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Voice and Diathesis in Slavic

0. Introduction

There is general agreement that voice is a universal linguistic phenomenon despite the fact that there is no agreement as to what the constraints on voice and voice-like operations are, where it fits in the overall organization of the grammar, or even precisely how voice is to be defined. For example, while voice clearly deals with alternations like active~passive and active~middle, opinion varies widely as to whether voice should include: (i) systematic alternations of the base verb's argument structure involving causativization and impersonalization (e.g. alternations like Russian *Veter unes lodku* 'The-wind$_{NOM.MASC}$ carried-away$_{MASC}$ the-boat$_{ACC}$' ~ *Lodku uneslo vetrom* 'The-wind$_{INST}$ carried-away$_{NEUT}$ the boat$_{ACC}$'; see Babby 1994a), which involve the base verb's external argument; (ii) systematic alternations involving only the base verb's internal arguments (e.g. applicative alternations).[1] The definition of voice I propose is part of a comprehensive theory of systematic alterations of the base verb's argument structure (diathesis). I will argue that alternations like active~passive, which are traditionally classified as voice, are in fact a small subset of the systematic alternations found in human language (most of which have not been given generally accepted names; see Mel´čuk and Xolodovič 1970: 118–19 for discussion), and that, while voice is a useful term for describing the most common or productive of the diathetic alternations (the ones with the fewest lexical constraints), voice per se is not a separate component or module of the speaker's internalized grammar and thus has no theoretical status in an explicit, generative analysis of language. However, the lexical representation of argument structure (diathesis) together with the systematic alteration of a verb's basic (initial)

[1] The literature dealing with voice is enormous and a proper survey of it would require far more than the number of pages allotted to this paper; I will therefore not attempt a survey of the literature. Most of the paper is devoted to the theory of diathesis, diathetic alternations, and the diathetic paradigm, which, I argue, subsumes the phenomena traditionally classified as voice. The theory of diathesis and its alteration relies on work done on argument structure in the American (generative) and Russian traditions.

diathesis by morpholexical rules, producing what we shall refer to as a given verb's *diathetic paradigm*, is an integral part of the grammatical system of human language, and, as such, deserves careful scrutiny.[2]

The theory of alternations that I propose below is based on a two-tiered lexical representation of the base verb's argument structure, which we shall refer to as a *diathesis*, a term first used in this sense in Mel´čuk and Xolodovič 1970 (the differences between their conception and mine is discussed in §2; cf. Babby and Brecht 1975; cf. Yip, Maling, and Jackendoff 1987). The upper tier of a diathesis contains the verb's semantic arguments (its theta grid or S-selection); the lower tier contains the verb's categorial or syntactic arguments (subcategorization frame or C-selection), which are linked to or aligned with the corresponding theta roles. It is further indicated in the diathesis which argument is external and which are internal. An *argument* is thus defined as a pairing of a theta role and the categorial argument it is linked to in a diathesis, and each such linkage represents a mapping rule from argument structure (lexical representation) onto X-bar representation of the sentence (Marantz 1984). The concept of diathesis and the morpholexical rules that operate on it proposed in this paper is based on two controversial assumptions. First, it has been widely proposed that the information encoded in the C-selection (subcategorization) is in fact predictable from the base verb's S-selection (theta grid) and, therefore is redundant and need not be represented in the verb's argument structure (for discussion see Chomsky 1986: 86; Grimshaw 1979, Pesetsky 1982, Bošković 1997). I will argue on the basis of evidence from the Slavic languages (primarily Russian) that C-selection is not predictable from S-selection and, therefore, that both tiers of diathetic representation are essential. The need for C-selection has been argued for by others.[3] Second, it has been assumed in generative theory since its inception that a verb subcategorizes only for internal arguments, i.e., since all verbs have an external syntactic argument (subject), even if it is not assigned a theta role (cf. expletives), verbs are not classified (subcategorized) with respect to whether or not they have a subject. The axiom that all sentences in all languages have to have a syntactic subject NP is reiterated in the Extended Projection Principle. There is, however, a great

[2] See Alsina 1996 who argues that argument structure should be considered a "fully autonomous level of syntactic structure" (see §1.4).

[3] See Pinker 1984 for a clear statement of this position.

deal of evidence from the Slavic languages (cf. especially impersonal alternations) that: (i) verbs in Slavic subcategorize for subject, i.e., I shall argue in this paper that not only is C-selection needed to account for the morphosyntactic structures of the Slavic languages, but external C-selection is needed as well (see Babby 1989 for preliminary discussion). (ii) An external categorial argument that is not linked to an external (or externalized) theta role is not projected onto the syntax. In other words, only aligned arguments are projected into the syntax (there is no "syntactic alignment," i.e., NP movement in Slavic (cf. Williams 1994)). This, if correct, is a major typological difference between Russian and English, where subject NPs that are not assigned a theta role occur in the syntax and are headed by expletives like *it* and *there*. Thus Russian impersonal sentences are subjectless, not "personal" sentences whose obligatory subject NP is obligatorily headed by a null expletive, as has been proposed (cf. Sobin 1985). The claim that there are subjectless sentences in Slavic is distinct from the claim that Slavic verbs involve both external and internal C-selection (see Babby 1989) and is considerably more controversial; since it is not central to the treatment of voice and the theory of morpholexical alternations to be proposed below, it can be rejected without rejecting the theory of alternations itself. However, the claim that C-selection is not redundant in Slavic is central to everything that follows.

1.0 Voice in linguistic theory

There is a paradoxical aspect to the treatment of voice in generative theory. The relation between active and passive sentences has played a highly prominent role in the development of generative theory. In early theory, the relation was conceived of as being entirely syntactic, with a complex passive transformational rule changing the position of the initial subject and direct object as well as introducing passive morphology. The treatment of passive sentences in recent theory reflects its lexicalist orientation, i.e., passivization is now conceived of as a lexical rule (a rule that alters a verb's predicate-argument structure) that introduces passive morphology, altering the base verb's initial theta grid (the external theta role is dethematized, i.e., made implicit), which has a number of systematic syntactic effects in its syntactic projection (cf. Jaeggli 1986, Bresnan 1982). While the proper treatment of the active~passive alternation has been

prominent in generative theory, there has been little mention of voice per se. This can most likely be explained by the fact alluded to above that voice is not an autonomous component or module of grammar and therefore has no theoretical status. But it is also true that voice phenomena other than passive have received relatively little attention in the generative literature, at least until recently.[4] But other theories that developed parallel to GB theory have made the analysis of voice phenomena their central issue. Speaking in very general terms, Case Grammar, Relational Grammar, and, to a lesser extent, Lexical-Functional Grammar, have placed what can be broadly defined as voice phenomena (if not the theory of voice itself) at the center of their theories of language. There is also a large body of Russian research that deals with what can be broadly defined as voice phenomena and with the theory of voice itself.[5] While the theory of alternations and its relation to voice to be presented below draws on the achievements of these and other theories, it nevertheless remains within the framework of GB theory and the Minimalist Program, and is intended as a contribution to its continued development.

2.0 Argument structure and diathesis

In the following sections I will outline the essential properties of the diathetic representation of a verb's predicate-argument structure, the kinds of rules that produce derived diatheses, the mapping of derived diatheses onto syntactic structure, and present some of the argumentation supporting the hypothesis that C-selection is not predictable from S-selection and that external C-selection is a property of the Slavic verb.

When we select a verb as part of the formation of a sentence, presumably on the basis of its lexical meaning, we automatically select the verb's argument structure or diathesis, which is the structured set of its theta roles (S-selection) linked to the set of its categorial arguments (C-selection) specified in the verb's lexical entry. Thus, when we select a predicate, the basic syntax of the sentence it projects is imposed on us by information encoded in its lexical representation. This explains why all languages have a set of lexical rules whose primary function is to alter the verb's initial diathesis and, therefore, to alter the syntactic structure of the sentences it projects (the semantic function

4 There are exceptions to this, e.g., the interesting work done on middle sentences; see Fagan 1988.

5 E.g., Xolodovič 1974, Xraxovskij 1978, 1979, 1981, Nakhimovsky 1983.

of these alternations is discussed below). We shall thus be interested a verb's *diathetic paradigm*, i.e., the set of sentences projected from the set of diatheses that can be derived by productive morpholexical rules of affixation from a verb's initial diathesis. Lexical rules of affixation that alter the base verb's lexical meaning in unpredictable ways are not involved in generating diathetic paradigms. To put it in slightly different terms, we shall be concerned in this paper with "the various ways in which the verb's arguments can be mapped into grammatical functions" (Pinker 1984: 337). The sentences traditionally classified as *voices* (e.g., active, passive, middle, reflexive, causative, anticausative, inchoative, detransitive etc.) are a subset of this diathetic paradigm. The purpose of this paper is to identify the canonical diathetic paradigm in Slavic.

A central goal of this diathesis-based theory of alternations is to determine the typology of derived diatheses in the world's languages (see Mel´čuk and Xolodovič 1970 for a delineation of the 34 potential diatheses (voices) that can be derived from a single dyadic verb).[6] In traditional definitions, voice is concerned primarily with the relation between the initial and derived subjects of the sentence. The notion of diathetic paradigm goes considerably beyond this arbitrarily imposed limitation: For a derived diathesis to be part of the verb's diathetic paradigm, its derivation must involve a systematic alteration of its initial diathesis; the external argument may not be involved at all. For example, in the case of *spray-load* verbs, the alternation gives the impression of being the VP-internal analogue of passivization:

(1)a. Devočka namazala xleb maslom.
'The girl smeared the bread with butter'

b. Devočka namazala maslo na xleb.
'The girl smeared butter on the bread'

Mel´čuk and Xolodovič (1970: 117) define *voice* as a diathesis that is formally marked on the verb; thus a verb's various voices constitute a subset of the full diathetic paradigm (assuming that not all diatheses involve affixation, cf. (1)). Passive, for example, is

[6] This is what the Minimalist Program is getting at when it claims that the differences between languages are primarily lexical differences (see Marantz 1995). Cf. Chomsky 1991: all syntactic parameters are to be found in the lexicon rather than the grammar itself.

classified as a voice because it involves affixation of specialized morphology to a verb as part of a lexical operation that alters its initial diathesis. If, however, we remove this arbitrary morphological restriction, then the distinction between voice and diathesis is eliminated (along with the endless circular argumentation over what is a voice and what is not).[7] We shall be concerned here with determining a verb's potential diathetic paradigm in Slavic and the morpholexical operations involved in its derivation. We will therefore not be concerned with traditional definitions of voice, which often boil down to finding names for diatheses with certain arbitrarily determined formal properties.

2.1. Formal properties of the diathesis

We begin our discussion of the formal properties of diatheses and of the rules that operate on them with the diathetic representation of a ditransitive verb:

(2)

(θ_1)	—	θ_2	θ_3
NP_1	V	NP_2	NP_3

The upper tier in (2) represents the set of theta roles associated with the predicate V (S-selection), and in the lower tier are the categorial or syntactic arguments (C-selection). The expressions in the upper and lower tiers are aligned or linked (see subnumbering) and each pairing is an argument of the verb.[8] The lower part of an argument and its relative position in the diathesis encodes mapping as well as categorial information. For example, the argument to the left of V is the *external argument*: it maps onto a position in the syntactic (X-bar) structure that is external to VP, the maximal projection of V; the two arguments to the right of V are internal arguments (we will not be concerned here with the internal structure of VP). An expression in parentheses is optional; thus in (2) the external theta role is specified as being optional (see discussion of detransitivization for details). While (2) incorporates a certain amount of redundant information (e.g., subjects are typically NPs), I will argue below that there are crucial aspects of C-selection that are

[7] According to their own definition of voice, the Ancient Chinese active ~ passive alternation given in examples (3) and (4) in Mel´čuk and Xolodovič 1970: 111 is not a voice since the verb in the passive is not morphologically marked.

[8] A number of linguists have argued for this type of representation, e.g.: Stowell 1992: 11–12; Rosen 1984; Pinker 1984: 297; Williams 1994: 118; Bresnan 1978: 15.

not predictable in terms of the S-selection and, therefore, the redundancies that we see in representations like (2) do not warrant the elimination of C-selection.

Case is not indicated in (2) because it is predictable: External arguments canonically map onto the subject NP, which is nominative; direct internal arguments θ_2/NP_2 maps onto the direct object position, which is accusative (both are genitive in the scope of negation (see Babby 1980, Neidle 1988, Franks 1995)). Nominative and accusative are thus characterized as the configurational cases. While the case of the subject and the direct object do not depend on the theta role they are linked to, the morphosyntactic realization of the indirect internal argument does depend on and is predictable in terms of its theta role (see Babby 1994a, 1994b, 1994c); we therefore refer to this type of case as *semantic case* (since it is predictable from S-structure; cf. *inherent case* in GB theory). For example, if V = *napolnit´* 'to-fill' in (2), the indirect internal argument selected denotes the material or substance that the direct object is filled with; the substance/material indirect internal role maps onto a bare NP assigned instrumental case: [9]

(3)Rabočie	napolnili	jamu	vodoj.
$workers_{NOM}$	filled	pit_{ACC}	$water_{INST}$

'The workers filled the pit with water.'

If a verb cooccurs with an unpredictable case (lexical or quirky case), this must be overtly specified in the verb's lexical entry (e.g. *podražat´* 'imitate' + dative case; *prenebregat´* 'scorn' + instrumental). Lexical-case assigning verbs thus not only subcategorize for an NP position, but for an NP *in a particular case*, which means that lexical case is part of the verb's C-selection.

The existence of lexical case forms the basis of our first argument against the hypothesis that C-selection can be predicted from S-selection and, therefore, that the

[9] We see below that if an indirect theta role is moved to the direct internal or external positions, it is realized as the accusative or nominative respectively, since the mapping from these positions is not sensitive to the value of the linked theta role. See discussion of "demiactive" sentences like *Voda napolnila jamu* 'Water$_{NOM}$ filled the-pit' vs. impersonals like *Vodoj napolnilo jamu* 'Water$_{INST}$ filled the-pit' in §4.5.

In English, which does not have semantic case, this theta role maps onto a *with*-NP phrase.

lower tier in our diathetic representation of argument structure should be eliminated. The criterial property of lexical case is that it is an oblique case that is *not* predictable in terms of the theta role it is linked to; it must therefore be stipulated in the lower tier of the diathesis (C-selection). Since verbs in the Slavic languages assign lexical case only to internal arguments, the existence of lexical case in Slavic can serve as evidence for internal C-selection only. But in other languages (e.g. Icelandic), a small class of verbs assigns lexical case to the subject of the sentence, which is evidence for external C-selection. There is however Slavic-internal evidence for external lexical case: The suffix *-ti* in Russian, which composes with verb stems to derive infinitives, assigns dative lexical case to its external argument, which means that infinitive clauses in Russian have lexical dative subjects (see Babby 1998 for details), a fact which could not be captured if verbs in Russian did not allow for external C-selection.[10]

Other types of idiomatic information must also be included in the diathesis' lower tier. For example, some complex predicates subcategorize for a internal NP that is obligatorily headed by a reflexive pronoun, e.g. *vesti sebja* 'to behave oneself', *vyvodit´ iz sebja* 'to-upset' (*Inogda on$_1$ vyvodit menja$_2$ iz sebja$_2$* 'He sometimes upsets me'); there is a small class of verbs in Russian that can cooccur with only one particular noun (e.g., *vysmorkat´ nos* 'to-blow nose'). This type of information belongs in the verb's lower tier.

There are a number of universal contraints on the organization of the diathesis; the most important for a theory of alternations are the following: If an agent is present in a verb's argument structure, it is canonically external (but see the discussion of lexical causatives in §4.4). Verbs do not normally have more than two internal arguments (see Babby 1997 for evidence from nominalization and causativization). Thus there are essentially five types of verbs in Russian: (i) no arguments (*Stemnelo* 'It-got-dark'); (ii) monadic verbs, which further divide into unaccusative and unergative; (iii) transitive impersonals; (iv) monotransitive (dyadic); and ditransitive (triadic); the possibility that an argument is optional creates a number of subtypes.

There is another notational convention that is needed to complete the description of diatheses. If a cell in the diathesis is marked with a minus sign, this means that it is

[10] The *-ant* suffix in Lithuanian also assigns external lexical dative case.

specified as being unoccupied in the diathesis; e.g., the diathesis of the transitive impersonal verb *to‰nit´* 'to feel nauseous' is given in (4):

(4)

—		θ_2
—	V	NP_2

The diathesis in (4) has no external theta role and no external categorial argument, and a sentence projected from this verb will always be subjectless (word order in Slavic reflects theme/rheme structure and topicalization):

(5)Menja tošnit.
me$_{ACC}$ nauseates
'I feel nauseous'

A cell that is left empty is understood to be unspecified in the initial diathesis; it receives a value from the diathesis of the expression it obligatorily composes with. For example, auxiliary verbs are unspecified for an external argument and, consequently, they appear to usurp the external argument of the lexical verb that becomes their infinitive complement. Thus an auxiliary verb that composes with an impersonal verb (see (4)), will itself be subjectless, as in (6); see §3.5 below for argumentation based on the behavior of auxiliary verbs for external C-selection:

(6)Menja prodolžal tošnit´.
me$_{ACC}$ contiued$_{NEUTSG}$ to-nauseate
'I continued to feel nauseated.'

2.1.1. A typology of external arguments

Given the representation of verbal diatheses presented above, we can classify verbs in Russian with respect to their external arguments as follows (instead of θ_1 we use 1 to indicate the external theta role, 2 for θ_2, etc.):

(7) Unergative:

1	—

NP_1	V

(8) Unaccusative:[11]

—	—	2
NP_1	V	NP_2

(9) Impersonal:

—	—	2
	V	NP_2

(cf. *tošnit´* in (4))

(10) Impersonal:

—	—	2
(NP_1)	V	NP_2

(cf. *korčit´* in §3.2)

(11) Auxiliary:

	V	

(12) Derived:[12]

1		2
—	V+af	NP_2

A comparison of the external argument in (7–12) demonstrates that these differences cannot be predicted solely in terms of the verbs' external theta role; external C-selection plays a crucial role here. This is particularly clear in the case of the impersonal verbs in (9) and (10), which will be discussed §3.

2.1.2. Lexical rules and the diathetic paradigm

[11] The status of unaccusative verbs in Russian is a problem. We see below that externalization of the direct internal argument is accompanied by affixation of the suffix *-sja*. It is not clear why *-sja* is not affixed to many Russian verbs that are classified as unaccusative in other languages (see Babby 1997: fn. 8).

[12] The derivation of deverbal adjectives (active participles), deverbal adverbs, and subject-control infinitives involves elimination of the base verb's external NP_1 argument, which captures the fact that while these nonfinite verbal categories do not project subject NPs of their own, they do have unlinked external theta roles, which project to the syntactic structure where they must be bound; see Babby 1996b, Babby 1998, Babby and Franks 1998. It is the "bare" external theta role in (12) that explains why deverbal adverbs behave like "verbal anaphors."

Each predicate's lexical entry in the mental lexicon contains an initial diathesis, which determines the projected sentence's basic syntactic structure. If no lexical rules are applied to the initial diathesis,[13] the projected sentence is said to be in the *active voice* (if there is a corresponding passive voice to contrast it with). The diathetic paradigm of a verb is derived from the initial diathesis by the application of productive lexical rules, which alter the relation between the theta roles and the categorial arguments they are aligned with in the diathetic representation; this derived relation is typically morphologically mediated, most often in Slavic by affixation (see Levin and Rappaport-Hovav 1994: 38; Pinker 1984: 293–94). The affixation of diathesis-alternating suffixes can iterate in some languages (e.g., in Turkish, an agglutinating language, causativization can apply more than once, and a causativized diathesis can be passivized).

A crucial question in the theory of alternations being explored here is the following: Do all diathesis-altering lexical rules involve affixation (including null affixes, i.e., affixes that do not have an overt lexical realization; see Pesetsky 1996)? If the answer to this question is affirmative, then what we are calling a lexical *rule* is in reality simply the composition of two diatheses, i.e., the combination of the verbal stem and its diathesis with a paradigmatic affix and its diathesis. We define *paradigmatic affix* as an affix that is a lexical item with its own argument structure that freely composes with verb stems to produce derived predicates with derived diatheses (paradigmatic affixes are thus themselves defective or bound lexical items). If all diathetic operations involved affixation, a *diathetic paradigm* would be the product of a base verbal stem and a small, closed set of argument-taking, meaning-preserving affixes. Since the affix is the head of the derived word (see DiSciullo and Williams 1987), its diathesis takes precedence over the diathesis of the lexical verb it composes with when each specifies how a particular cell is filled. For example, in the case of productive morphological causativization, the causative suffix's diathesis is specified for an external theta role (*causative agent*) and the diathesis of the lexical verb it combines with is also specified for an external theta role (the *direct agent*): the causative affix's external theta role becomes the external theta role of the derived diathesis (and thus the nominative subject of the projected sentence), while the lexical verb stem's external theta role is *internalized*, i.e., occupies the first available

[13] *Lexical rules* are also referred to as *lexical redundancy rules* (see Pinker 1984: 293).

(unoccupied) internal position in the derived diathesis, and is thus realized morphosyntactically as an agentive complement of the causative verb (see Babby 1981, 1983, 1993b, 1997 for details). For example, when an intransitive (unergative) verb is causativized, the lexical verb's initial external theta role is realized as the accusative direct object of the derived causativized verb (cf. English *The horse jumped over the fence ~ The rider jumped the horse over the fence*: the *horse* remains the agent). As we shall see below, there are a number of diathetic operations in Russian and other Slavic languages that do not appear to involve dedicated affixation (e.g., demiactives, benefactive causatives, productive impersonalization), in which case our theory will have to admit true, affixless lexical rules that directly alter the verb's argument structure in addition to the closed set of paradigmatic affixes plus a set of independently motivated principles governing the composition of verbs and affixes.

3.0 Arguments for C-selection

In this section to we return to a basic hypothesis of the theory of diathetic alternations proposed in this paper: C-selection cannot be predicted from S-selection, and, therefore, both tiers in the diathetic representation of argument structure are independent (neither can be predicted from the other), i.e., each type of selection encodes syntactically relevant information that the other does not. Below I present a number of arguments supporting the autonomy of C-selection.

3.1. Lexical case: Argument I

We saw above in §2.1 that if lexical case is a facet of C-selection, as I am claiming, then the existence of lexical case constitutes an argument supporting the hypothesis that C-selection as well as S-selection must be specified in a verb's diathesis: Lexical case is not determined by the theta role it is linked to nor is it configurationally predictable; it must therefore be stipulated in the diathesis as part of C-selection. Furthermore, the existence of external lexical case assignment by the infinitive suffix supports our hypothesis that the verb in Slavic involves external C-selection as well as internal C-selection.

3.2. Initial impersonal verbs: Argument II[14]

The hypothesis that a verb's argument structure consists only of S-selection makes the following easily testable prediction: Two verbs with identical S-selection should project sentences with the same syntactic structure. Let us consider the verbs *tošnit´* and *korčit´*, which have similar lexical semantics—both denote physical symptoms of illness—and have *the identical set of theta roles*: no external theta role and a direct internal theta role that is a patient or experiencer (an optional *ot* + NP 'from' phrase denotes the source of the ailment, but we shall ignore it here since it is not clear whether it is an optional argument or an adjunct), e.g. (see Babby 1989):

(13)a. Ego tošnilo ot boli.
him$_{ACC}$ nauseated$_{NEUT.SG}$ from pain

'He was nauseous from the pain'/'the pain made him nauseous'

b. Ego korčilo ot boli.
him$_{ACC}$ convulsed$_{NEUT.SG}$ from pain

'He was having convulsions from the pain' = 'the pain was giving him convulsions'

There is, however, a striking syntactic difference between these two verbs which cannot be predicted from their S-selection and lexical meanings alone: The direct internal argument of *korčit´* but not of *tošnit´* can optionally be as realized syntactically as the subject of the sentence (*-sja* is affixed to the verb when the initial direct internal argument is made external):

(14)a. *On tošnilsja ot boli.
he$_{NOM}$ nauseated$_{MASC.SG}$ from pain

'He was nauseous from the pain'

[14] An *initial impersonal verb* has neither an external theta role nor an external categorial argument in its initial diathesis; it contrasts with *derived impersonal verbs*, whose initial diathesis has an external argument that is removed as the result of lexical operations.

(14)b. On korčilsja ot boli.
he$_{NOM}$ convulsed$_{MASC.SG}$ from pain
'He was having convulsions from the pain'

I argued in Babby 1989 that the difference we see in (14) is due to the fact that the two verbs have different C-selection: While *tošnit´* has no external theta role and no external categorial argument (see the diathesis in (9)), *korčit´*, which also has no external theta role, is subcategorized for an optional external categorial argument (projected as subject), which is filled by the initial internal theta role when selected; this is represented in the diathesis of *korčit´* in (10). The morphosyntactic differences between *tošnit´* and *korčit´* are entirely unpredictable and arbitrary (there is no reason why the reverse should not be true), i.e., the differences cannot be derived from the theta roles or the lexical semantics of the two verbs, which leaves no alternative other than the stipulation of the difference in terms of the different C-selections represented in (9) and (10). Note too that the examples in (13) and (14) not only argue for the need to complement the S-selection with linked C-selection to account fully for the verbs' syntactic structure, but they also argue for *external* C-selection: The internal diatheses of both verbs are identical and neither has an external theta role, which means that the morphosyntactic differences between them must be exhaustively determined by differences in their external C-selection, as in (9) and (10).[15] This discussion of the lexical semantics, argument structure, and projected syntax of *tošnit´* and *korčit´* also undermines Grimshaw's (1990: 3) claim that a verb's argument structure derives from its semantics.

The *Ego korčilo ~ On korčilsja* alternation we see in (13b) and (14b), which is encoded in the verb's initial diathesis by the parenthesis around NP_1 in (10), involves use of the "voice affix" *-sja* in (14b). This alternation would thus qualify as a voice relation according to the definition given in Mel´čuk and Xolodovič 1970 (a voice is a diathesis that is morphologically marked on the verb), but it is neither passive nor middle voice. This demonstrates why the notion of voice is so uninformative: It forces taxonomic distinctions that do not correspond to the native speakers' intuitive linguistic knowledge. But a more substantive problem is the following: What is the relation between the

[15] Problems with the null expletive subject analysis of these verbs are discussed in Babby 1989.

diathesis in (10), which predicts the occurrence of the alternation we see in (13b) and (14b), the externalization of q_2, and the affixation of *-sja* in light of the disscussion in §2.1.2? More precisely, is externalization of θ_2 induced by affixation of *-sja* or is affixation of *-sja* induced by the externalization of θ_2 (as proposed Babby 1975)? We will return to this problem below when we discuss the use of *-sja* in passives, middles, detransitives, and anticausatives, and attempt to find a unified explanation for its use. For the time being note only that its function is to mark an alteration in the verb's initial diathesis; in earlier treatments of these phenomena it would have been called an valency marker.

Now let us compare *tošnit´* and *korčit´* with *atrofirovat´sja* 'to atrophy', which has the following significant properties: it is a monadic verb that must cooccur with the *-sja* affix (see (15)).

(15)Ruka u nego atrofirovalas' (*atrofirovala).
arm$_{NOM.FEM}$ at him atrophied$_{FEM}$
'His arm atrophied'

It cannot be treated as an intransitive verb with a lexicalized *-sja* suffix like *bojat´sja* 'to fear' or *ostat´sja* 'to remain' because, unlike these verbs, *atrofirovat´sja* forms an *-en-* participle, which in Russian is normally possible only with transitive verb stems (see (16)).[16]

(16)Ruka u nego atrofirovana (*atrofirovanas´)
arm$_{NOM.\ FEM}$ at him atrophied$_{FEM}$
'His arm is/has atrophied'

Note too that, unlike *tošnit´* and *korčit´*, *atrofirovat´sja* cannot be the predicate of an impersonal sentence:

[16] The use of *-en-* participles in the derivation of passive sentences from perfective verbs is discussed below. Observe for now that *atrofirovana* in (14b) is not a "passive participle."

(17)*Ruku	u	nego	atrofirovalo/atrofirovano.
arm$_{ACC.FEM}$	at	him	atrophied$_{NEUT.SG}$

This cluster of properties is what we would expect if *atrofirovat´sja* is a basic unaccusative verb, i.e., has the diathesis in (18).

(18)

—	—	2
NP_1	V	NP_2

atrofirovat´sja

Since NP_1 is not linked to an external theta role in (18), θ_2 must externalize: Russian, unlike English, does not project empty NPs (which is why it has no expletives), so externalization of the initial direct internal theta role here is an obligatory lexical operation (a diathetic operation), not a syntactic operation, as assumed in GB theory (see Williams' 1994 argumentation against NP-movement). Thus the obligatoriness of *-sja* on *atrofirovat´sja* is an automatic consequence of its unaccusative diathesis in (18): θ_2 always externalizes and thus *-sja* is always introduced as a marker of derived intransitivity, unless of course, *-en-* is affixed to the transitive stem instead of *-sja*, forming a stative/resultative participle, as in (16). Thus the affixation of both *-sja* and *-en-* have the same effect: they make an initial transitive verb morphologically intransitive (at least in standard Russian; see the discussion of transitive impersonal passives in Ukrainian and dialect Russian below). Again, the relation between externalization of θ_2 and affixation of *-sja* and *-en-* (and the presence of an unaligned external NP) needs to be sorted out (which determines which?), which we leave until the derivation of passive sentences in §4.2. Note that the affixation of *-sja* in the derivation of verbs like *atrofirovat´sja* marks a systematic change in the initial diathesis but is not involved in a voice relation (*zasnežit´sja/zasnežen* 'to cover with snow' works the same way): We obviously do not want to claim that unaccusativity is a voice (cf. the derivations of *korčit´sja* and *atrofirovat´sja*).

Compare the diatheses in (18), (19), and (20). *Tošnit´(*sja), korčit´(sja),* and *atrofirovat´sja* are all verbs that have no external theta role. I have argued above that the different morphosyntactic structures of the sentences they project are due exclusively to

the external categorial argument in each: NP_1 is obligatorily absent in the case of *tošnit´* (hence it is always impersonal since θ_2 cannot externalize); NP_1 is optional in the case of *korčit´* (hence it is optionally impersonal); and NP_1 is obligatorily present in the case of *atrofirovat´sja* (hence it is obligatorily personal). Since these differences cannot be predicted from the lexical semantics of these verbs, and since their internal diatheses are the same and there is no external theta role in all three diatheses, the comparison of the morphosyntax of these verbs provides particularly convincing evidence for the centrality of external C-selection in Slavic.

(19)

—	—	2
—	V	NP_2

tošnit´

(20)

—	—	2
(NP_1)	—	NP_2

korčit´

3.3. Vspomnit´ vs. remember: Argument III

Let us look once again at the prediction discussed in the preceding section: If argument structure consists only of S-selection (C-selection being predictable from S-selection in terms of Canonical Structural Realization (cf. Chomsky 1986) and therefore redundant), then it should be true that two verbs with the same set of theta roles should project the same syntactic structures. In this section we look at the same verb in two different languages. *Remember* in English and *vspomnit´* in Russian have the same lexical meaning and the same set of theta roles: the rememberer (experiencer) and the rememberee (the thing remembered); it appears from a comparison of the "active" sentences in (21) that the two verbs do in fact project the same syntactic structures.

(21)a. We all remembered the old songs.

b. My vse vspomnili starye pesni.
we$_{NOM}$ all remembered old songs$_{ACC}$

However, the two verbs turn out to be quite different: while *remember* allows passivization, *vspomnit´* does not:

(22)a. The old songs were remember by all of us.

b. *Starye pesni byli vspomneni vsemi nami.

The crucial question can be posed as follows: What prevents *vspomnit´* from passivizing? Is this an idiomatic property of *vspomnit´* that must be explicitly stipulated in its lexical entry, or is the absence of passivization a systematic property, i.e., a gap in the diathetic paradigm that is predictable in terms of some other, more basic property of the verb or the class of verbs it is a member of? The following pair suggests the latter is correct:

(23)a. *To us remembered the old songs.

b.

Nam	vspomnilis´	starye	pesni.
us$_{DAT}$	remembered+sja	old	songs$_{NOM}$

‘The old songs remembered to us’

The alternation we see in (21b) and (23b) is possible with a number of other Russian verbs (e.g. *vstretit´(sja)* ‘meet’ (*Kogda vam vstretitsja sovet, kotoryj…* ‘When to-you$_{DAT}$ meets+*sja* advice$_{NOM}$, that...’), *xotet´(sja)* ‘want’, *poljubit´(sja)* ‘take a liking to’) and looks superficially like the passive alternation: (i) the direct object in the "active" sentence in (21b) is realized as the nominative subject in (23b); (ii) *-sja* is affixed to the verb in (23b), making it a derived intransitive; (iii) the nominative subject in (21b) is realized in (23b) as a bare oblique case--the dative. But (23b) is not the projection of a passive diathesis since: (i) we see in (22b) that *vspomnit´* cannot passivize; (ii) *-en-*, not *-sja*, is normally affixed to perfective verb stems in Russian passive derivations; (iii) the oblique case used in Russian passive sentences is instrumental not dative; (iv) the dative experiencer is an argument, not an adjunct. The alternation in (21b)~(23b) nevertheless meets the formal criteria for a voice relation, but it has no generally accepted name in traditional grammar (cf. Vinogradov’s (1972: 498) *sredno-passivno-vozvratnoe značenie*

'middle-passive-reflexive meaning' (of *-sja*) and Mel´čuk and Xolodovič's (1970: 118) characterization of *Mne mečtaetsja* '(lit.) to-me: dat. dreams+*sja*' as the *sub"ektnyj kvazipassiv* 'subjective quasipassive voice').

The question concerning us here is how to account for the different syntactic properties of *remember* and *vspomnit´*, which have the same S-selection. The solution I propose is essentially the same as in §3.2: Although the two verbs have the same meaning and the same set of theta roles, they have different C-selection and, therefore, their diatheses project different syntactic structures. We begin with *remember*. As we shall see in §4.2, the universal operation in passive derivations is *implicitization* of the verb's external theta role. Since *remember* passivizes, we can assume that it is an ordinary transitive verb whose external theta role happens to be an experiencer rather than an agent; its initial diathesis is thus (24). (Here and elsewhere in this paper we see Slavic evidence against Baker's 1988 Uniformity of Theta Role Assignment Hypothesis (UTAH)).

(24)

1	—	2
NP_1	V	NP_2

remember

(21a) is in fact "active," i.e., the projection of verb's initial, unaltered diathesis; (22a) is the projection of the passive diathesis derived from (24); (23a) is not a possible sentence of English, given the diathesis in (24) (see below for the reason).

Let us now consider the diathesis of *vspomnit´*. The most natural way to account for the fact that a transitive verb does not passivize is to assume that it has no initial external theta role: there is simply no external theta role for the passive rule to operate on and make implicit. Since *vspomnit´* does not impersonalize (*Nam_{DAT} *vspomnilo starye* $pesni_{ACC}$), it must have an obligatory external NP. Its external argument is thus identical to that of *atrofirovat´sja* in (18), which also does not passive. The question now becomes: Where is the experiencer theta role in the initial diathesis of *vspomnit´*? It must be in the indirect internal position for two reasons: First, we know that the theme (rememberee) is initially linked to NP_2 in the initial diathesis since *-sja* is affixed to the verb when it is

externalized (cf. (23b)); this leaves the indirect internal position NP_3 as the only initial position for the experiencer role to originate in, which is confirmed by the dative~nominative alternation. Recall from §2.1 that the morphosyntactic realization of the indirect internal argument is determined by its theta role (semantic case): experiencers in Russian map onto a bare dative case NP. The initial diathesis of *vspomnit´* can therefore be represented by (25).

(25)

—	—	2	3
NP_1	V	NP_2	NP_3

vspomnit´

As we saw above in the case of *atrofirovat´sja*, Slavic does not project NPs not linked to a theta role into the syntax. Since unprojected NPs violate the Projection Principle, NP_1 in (25) must be linked to one of the internal theta roles (= externalization) to avoid an ill-formed structure. NP_1 in (25) can be linked by externalizing θ_2, which derives (23b): *-sja* is affix to the transitive verb when its direct internal theta role is externalized; θ_3 remains internal and is realized as a bare dative case NP. We can refer to a sentences with this derivation as an *inversion* structure (see below for discussion). But θ_3 can be externalized instead of θ_2, in which case it is realized as the nominative subject (the case of subjects and direct objects does not depend on their theta roles) and the direct internal argument remains in its initial position in the diathesis and is realized as the accusative direct object (with no *-sja* affixation), as in (21b). Thus although (21b) looks like an ordinary (transitive) active sentence, it is not since its subject is derived (externalized); below we refer to sentences with this derivation as *demiactives*. Just as the passive cannot be derived given the diathesis of *vspomnit´* in (25) (no special stipulation is necessary), (23a) in English cannot be derived, given the diathesis of *remember* in (24).

Thus, speaking in general terms, when a verb has an external categorial argument but no external theta role, either of the two internal theta roles can be externalized (promoted) and made the nominative subject, producing the kind of alternation we see in (21b) and (23b). This type alternation is extremely common in Russian and other languages, e.g., see the discussion of *Jama napolnilas´ vodoj* 'The-pit$_{NOM}$ filled with-

water$_{INST}$' and *Voda napolnila jamu* 'Water$_{NOM}$ filled the-pit$_{ACC}$' below (the only difference here is that θ_3 = material/substance, which maps onto the bare instrumental case when projected to the indirect VP internal position).[17]

Thus (21b) is not "active voice" and (23b) is not passive voice. What we see in (21b)~(23b) is an alternation between a demiactive structure and an inversion structure. We see here once again that imposing a voice taxonomy on these sentences is pointless: They are predicted to occur in terms of their diatheses plus other independently motivated principles of grammar. In other words, what is significant is the number and type of diatheses that can be derived from a given verb's initial argument structure, not classifying the diatheses on the basis of what turns out to be arbitrary formal properties and finding names for them.[18]

The main point of this section can be summarized as follows. The morphosyntactic differences between verbs like *remember* and *vspomnit´* enumerated above can be accounted for entirely in terms of initial diatheses that specify C-selection, S-selection, and the relation between them (cf. (24) and (25)). S-selection alone, which is the same for both verbs, cannot account for their syntactic differences.

3.4. The derivation of nonfinite verbal categories: Argument IV

This argument for the autonomy of C-selection, which is quite straightforward, is based on morpholexical operations that play a central role in the syntax of Slavic

[17] *Nravit´sja/ponravit´sja* 'to like, please' is interesting in the light of this derivation: It too has a theme (the likee) and an experiencer, and is not used impersonally. But, unlike *vspomnit´* and like *atrofirovat´sja*, *-sja* is always present and the experiencer cannot be subject:

(i) Emu ponravilas´ pesnja 'He$_{DAT}$ liked+sja the-song$_{NOM}$'

(ii) *On ponravil pesnju 'He$_{NOM}$ liked the-song$_{ACC}$'

(iii) *Emu ponravilo pesnju.'He$_{DAT}$ liked$_{MEUT}$ the-song$_{ACC}$'

This suggests that the diathesis of *ponravit´sja* is essentially the same as that of *vspomnit´*, but the affix *-sja* is permanently affixed to the verb in the initial diathesis, which forces externalization of the initial direct internal theta role, thus effectively blocking the externalization of the experiencer, which must therefore always be realized internally as the semantic dative case. If this analysis of *ponravit´sja* is correct, it provides part of the answer to the question posed above, namely, does externalization of θ_2 induce affixation of *-sja* (as in Babby 1975) or does affixation of-*sja* induce externalization of θ_2? This analysis supports the latter.

[18] I proposed that sentences like (21b) be called *demiactives* in Babby 1994a. In the earlier transformational literature, sentences like (23b) were called "flip" sentences (the flip voice?) and the rule that formed them was referred to as the "flip transformation." Spenser 1991: chap. 7 uses the term *inversion* for similar constructions. See Givon 1994.

languages. It has been demonstrated in Babby 1996b, 1997, 1998, and Babby and Franks 1998 that deverbal adverbs (*deepričastija*) and deverbal adjectives (active participles) have the following criterial properties in Russian: (i) They are productively derived by lexical rules of affixation from the diathesis of verbs that have an external theta role. (ii) Neither category can have an overt subject NP in modern Russian. (iii) Both must have an understood subject, i.e., a bound external theta role with no categorial realization. These properties of deverbal adverbs and adjectives can be fully accounted for by assuming that they are bare (subjectless) nonfinite VPs with an external theta role that must be satisfied syntactically (bound). (iv) The external theta role of both must be vertically bound by the external theta role of the XP immediately dominating them (see Williams 1994 for discussion of vertical binding).[19]

These four properties are accounted for in terms of the lexical rule that is schematically represented in (26); on the left is the verb's initial diathesis and on the right is the derived diathesis of deverbal adverbs and deverbal adjectives (the affix (= af) is of course different in each case, and is responsible for the syntactic distribution of the nonfinite categories). Note that the derivation of nonfinite categories (including infinitives) does not alter the base verb's S-selection. See (7)-(12).

(26) The derivation of deverbal adverbs and adjectives:

1	—	2	3
NP_1	V	NP_2	NP_3

→

1	—	2	3
—	[V+af]	NP_2	NP_3

Other than affixation, the only significant change to the verb stem's initial diathesis is the elimination of the external categorial argument NP_1, which formally encodes the crucial fact that, unlike the verb stem from which they derive, they cannot have (project) a subject NP (i.e., deverbal adverbs and adjectives do not have null PRO subjects). Since deverbal adverbs and adjectives cannot function as main predicates, the only way to satisfy their external theta role is by vertical binding, which accounts for all the significant morphosyntactic properties of these categories.

[19] The lexical derivation of infinitives is more complex and will not be considered here; for details see Babby 1998.

The main point in this section is this: If the representation of the diathesis did have an autonomous tier designating both external and internal C-selection, rules like (26), which do not affect the S-selection, could not be formulated: there would be no external NP for the lexical rule to operate on. In other words, both primary and secondary predicates in Russian have an external theta role; the difference is that the diathesis of the former has an external NP (= syntactic subject) but the latter does not. Thus we see another case where not only is C-selection acted upon independently of the S-selection, but the crucial argument-structure level operations involve *external* C-selection.[20]

3.5. Auxiliary verbs and external C-selection: Argument V

Auxiliary verbs all share a formal property that sets them apart as a distinct natural verb class. While nonauxiliary lexical verbs control their infinitive complement, the reverse is true in the case of auxiliary verbs: here it is the infinitive complement that appears to control the matrix verb. For example, if the infinitive complement is formed from an impersonal verb, the auxiliary itself must be impersonal, e.g. (cf. (19)):

(27)Menja	stalo/	prodolžalo/	perestalo	tošnit´.
me$_{ACC}$	began$_{NEUT}$	continued$_{NEUT}$	stopped$_{NEUT}$	to-nauseate

'I began/continued to feel nauseous / stopped feeling nauseous'

Williams (1994) identifies auxiliary verbs are *functors* (expressions that do not assign their own theta roles), and suggests the following formal analysis, which works particularly well in Slavic. A lexical verb's argument structure can be represented as in (28), where X is the external argument and W represents the remainder of the diathesis, i.e. the lexical verb V and its two internal arguments Y and Z; in our terms, W stands for the verb V and the internal diathesis:

[20] Long and short forms of the adjective in Russian are derived from the same initial diathesis. The derivation of long forms crucially involves elimination of the initial external categorial argument NP$_1$, which accounts for the syntactic difference in the function and distribution of long and short forms: Long forms are secondary predicates only. Short forms project their external NP$_1$, which is why they function exclusively as main clause (primary) predicates. Note that deverbal adjectives (active participles) in Russian function only as secondary predicates, which is why they have long forms only.

(28)X - [V - Y - Z]$_{w}$

Auxiliary formation can be represented as (29):

(29)X - [V_{aux} - W]$_{Vaux}$m

The external argument X of the lexical verb's diathesis becomes the external argument of the auxiliary verb and the rest of the lexical verb's diathesis W becomes the infinitive complement of the auxiliary.[21] The infinitive complement thus gives the impression of controlling its matrix auxiliary verb because the auxiliary in effect inherits the lexical infinitive's external argument.

This analysis of auxiliaries provides additional evidence for external C-selection and, therefore, for C-selection as an autonomous component of a verb's argument structure. First of all, if argument structure consisted only of S-selection, we could not account for the fact that auxiliary verbs preserve the distinctions discussed above that crucially depend on external subcategorization, e.g. *korčit´* + auxiliary verb (but not *tošnit´*) can be personal or impersonal (cf. (19) and (20)): *Ego perestalo korčit´ ~ On perestal korčit´sja*, but *Ego perestalo tošnit´ ~ *On perestal tošnit´sja* (cf. (13) and (14)). Second, in order to distinguish between impersonal verbs, which have no external argument in Slavic, and auxiliary verbs, which inherit their complement's external argument, we must be able to make a distinction in our diathetic representation between positive specification for no external argument (cf. (19)) and nonspecification of the external argument: this distinction presupposes external C-selection (cf. §2.1.1).

The analysis of auxiliaries proposed here also explains why certain predicates permit their complements to passivize and others do not. Consider the short form adjectives *nameren* 'intend' and *dolžen* 'must', which appear to have the same syntax (see (30)). But, as (31) demonstrates, they in fact have different syntactic properties: *dolžen*, but not *nameren*, allows its complement to be passive.

[21] The infinitive complement of an auxiliary is always a bare infinitive VP (never an infinitive clause). See Babby 1998 for details. Williams does not specify the categorial status of W.

(30)a. On nameren upotrebljat' èto lekarstvo.
'He intends to-use this medicine'

b. On dolžen upotrebljat' èto lekarstvo.
'He must use this medicine'

(31)a. *Èto lekarstvo namereno (im) upotrebljat´sja.
'This medicine intends to-be-used (by-him)'

b. Èto lekarstvo dolžno (im) upotrebljat´sja.
'This medicine must be-used (by-him)'

Dolžen is an auxiliary and therefore is unspecified for an external argument of its own in its diathesis; it thus inherits the external theta role of its bare infinitive complement and, as we see in (30b) and (31b), it makes no different whether the infinitive is "active" (θ_1 is external) or passive (θ_2 is external). But *nameren* is not an auxiliary: it has its own external theta role (the *intender*, which is an agent). *Nameren* is a subject-control predicate, i.e., according to the analysis proposed in Babby 1998, the external theta role of its bare infinitive complement is satisfied by being vertically bound by *nameren*'s external theta role, which means that the subject of *nameren* and the *understood subject* (lexically unlinked θ_1) of its infinitive complement must be coreferential. However, in (31a), the external theta role of the passive infinitive complement is inanimate (*lekarstvo*), which is responsible for the sentence's ungrammaticality: the external argument of *nameren* is specified as being an agent and, therefore, human, but here it is inanimate.[22]

The syntactic differences between these two adjectives thus follows from the crucial difference in their external diatheses and no further stipulation is necessary: *nameren* has a specified external argument and *dolžen* has an unspecified external argument. The diathesis of an auxiliary can thus be schematically represented as in (32) (V = *dolžen*). (Recall that an empty cell in a diathesis is unspecified, and must be "filled in" by the lexical predicate it composes with.)

[22] *On nameren spešit´sja* 'He intends to-dismount' is well-formed because the infinitive complement's derived external theta role q2 is an agent and thus human; see §4.4.1 for discussion.

(32)

	V_{aux}	

Compare (32) to (33), the diathesis of *nameren* (θ_1 = agent).

(33)

1	—	2
NP_1	nameren	VP_{inf}

4.0. Diatheses and the diathetic paradigm

Now that I have outlined the formal properties of the diathetic representation of predicate argument structure, the kinds of rules that operate on these structures, the relation between diathesis and voice, and a series of arguments supporting the hypothesis that C-selection is autonomous and that external C-selection is crucial to the syntax of the Slavic languages, we can now go on to the diathetic paradigm itself, i.e., the full range of diatheses derived from a single verb. While the typology of diatheses provides an insightful way of discussing systematic differences among the Slavic languages, this task goes well beyond the limits imposed on this paper, which should accordingly be viewed as laying the groundwork for a comprehensive diathetically based comparative analysis of the Slavic languages (see Lavine 1997). Below I will present the full diathetic paradigm of a typical verb in Russian, commenting where appropriate on differences between standard Russian, the other Slavic languages, and data from Russian dialects.

We began the discussion of diathesis and voice with the verb *napolnit´* 'to-fill' (see (3) in §2.1) since it has a full diathetic paradigm and its analysis illustrates rather nicely the range of structures the theory of diathetic alternations is concerned with. The full diathetic paradigm of *napolnit´* is presented in (34) along with the conventional names of the diatheses, when they exist (see Babby 1994a); its initial diathesis is given in (35).

The diathetic paradigm of a Russian verb does not include its derived nominal since the suffix used and the alterations of the base verb's lexical meaning that are introduced under nominalization are not systematic (see Chomsky 1970). The diathetic paradigm of the Polish verb, however, should include its derived nominal because the suffix used is

predictable, the verb's lexical meaning is not affected, and the derived nominal in Polish preserves both the base verb's aspect and the *-się* suffix (*-sja* is not preserved in Russian derived nominals, which leads to the virtual neutralization of the voice relations found in the corresponding sentence; see Babby 1997: 231–32).[23] There is no productive morphological causative in Slavic, i.e., there is no causative suffix af_{caus} whose external agrument becomes the external argument of the causative verb when af_{caus} composes with a lexical verb (see Babby 1981, 1997, Levin and Rappaport-Hovav 1994, Pinker 1984). While there are alternations in Slavic that can be characterized as a causative alternation, I argue that there are nevertheless no specifically causative diatheses in Slavic (see §4.4.1).

(34)Diathetic paradigm of *napolnit´*:

a. Rabočie napolnili jamu vodoj. (active voice)
workers filled pit_{ACC} $with\text{-}water_{INST}$

b. Jama byla napolnena vodoj (rabočimi). (passive voice)
pit was filled $with\text{-}water_{INST}$ $by\text{-}the\text{-}workers_{INST}$

c. Jama napolnilas´ vodoj (*rabočimi). (detransitive/middle/anticausative)
pit filled $with\text{-}water_{INST}$

d. Voda napolnila jamu (*rabočimi). (demiactive)
$water_{NOM}$ filled pit_{ACC}

e. Jamu napolnilo vodoj. (impersonal: adversity)
$pit_{ACC.FEM}$ $filled_{NEUT}$ $with\text{-}water_{INST}$
'The pit got filled with water'

f. Jamu napolnilo voda. (hybrid impersonal=dialect only)
$pit_{ACC.\ FEM}$ $filled_{NEUT}$ $water_{NOM.FEM}$

g. Jamu napolneno vodoj. (impersonal passive=dialect only)
$pit_{ACC.FEM}$ $filled_{PARTICIPLE.\ NEUT}$ $water_{INST}$
'The pit was filled with water'

[23] Given the Strong Lexicalist Hypothesis (which I assume in this paper), this last fact from Polish can be construed as evidence that affixation of *-sja* is a lexical, not a syntactic operation (cf. Babby 1975).

What I am calling a derived nominal in Polish does not correspond to the two types of deverbal nouns identified by Chomsky (1970): it is neither a *derived nominal* nor a *gerundive nominal* given Chomsky's definitions.

(35)

(θ_1)	—	θ_2	θ_3
NP_1	V	NP_2	NP_3

4.1. Active voice: (34a)

Active voice can be defined simply as the mapping of a verb's initial, unaltered diathesis onto syntactic structure. Thus in (35) the initial external argument is realized as the syntactic external argument (outsideVP), i.e., as the subject, which is assigned nominative case independently of its theta role (agent here) and canonically agrees with the predicate. The direct internal argument is realized syntactically as the accusative direct object *jamu* (also independently of its theta role), and the indirect internal argument (*vodoj*) is realized as the instrumental case, which is semantic case, since θ_3 = material/substance (see §2.1). However, aside from the fact that the active voice does not meet Mel´čuk and Xolodovič's criterion for a voice (there is no systematic marking on the verb), there are other problems. For example, in the case of unaccusative verbs like *atrofirovat´sja* (see (18)), the nominative subject is the initial direct internal argument and *-sja* is not present in the initial diathesis as it is in the case of *nravit´sja* (see discussion in §3.2): the introduction of *-sja* is associated in Russian with the externalization of θ_2. Also, unergative verbs are not normally referred to as active. Thus active voice is normally thought of as part of the active~passive alternation. However, since the entire diathetic paradigm derives from the diathesis that projects active sentences, the notion of active voice really serves no useful function and, as shown above, it creates problems when applied consistently. The notion of *initial diathesis* does not run into these problems.

4.2. Passive sentences: (34b)

A great deal has been written about passive sentences and I will not attempt a survey. First I will present an uncontroversial argument-structure based analysis of passivization and then concentrate on a far more controversial and important issue, namely, the status of the affixes used in passivization and precisely what it is that the morphology is marking.

Passivization is a lexical operation on the verb's initial diathesis; (36) is its schematic representation:

(36)

(θ_1)	—	θ_2	θ_3
NP_1	V	NP_2	NP_3

→

—	θ_1	θ_2	θ_3
NP_1	[V+af]	NP_2	NP_3

The passive operation in (36) effects the following changes:

- The external theta role is *dethematized*; more specifically, it is made *implicit* (internalized and linked to [V+af] rather than to one of its categorial NP arguments), which creates a derived unaccusative predicate; see Jaeggli 1986.
- The implicit external theta role licenses an optional argument adjunct (a bare instrumental case NP in Russian, a *by*-phrase in English, etc.). Even if the implicit theta role is not overtly realized in the sentence, it is nevertheless has syntactic effects, e.g., it can bind the external theta role of deverbal adverbs (see Babby and Franks 1998) and, as (37) demonstrates, it can bind reflexive pronouns.

(37)Vse oborudovanie, privezennoe s soboj, bylo rassovano po škafam.
all equipment brought with self was put on shelves

'All the equipment they brought with them was put on the shelves'

Soboj is bound by the implicit theta role (agent = 'they') of the passive participle *privezennoe*, not by the nominative subject *oborudovanie* (see Ickovič 1984 for details).

- A suffix is affixed to the verb stem: af = *-sja* when the verb is imperfective and af = *-en-* when it is perfective (the influence of aspect on the selection of the suffix must be stipulated, cf. Babby and Brecht 1975). *-Sja* does not affect the base verb's syntactic category, [V+en-] is a participle.

- q_2 is externalized in standard Russian and realized as the nominative subject.

The central issue here can be formulated as a question: Which facet of the lexical operation represented in (36) is directly associated with affixation of *-sja*, implicitization of θ_1 or externalization of θ_2?[24] Since making the external theta role implicit (not externalizing the direct internal argument) is the only universal component of passivization (cf. impersonal passives from intransitive verbs), we would naturally expect the suffix in (36) to directly effect implicitization of θ_1 (with externalization of θ_2 being epiphenomenal).[25] But we can nevertheless not directly associate affixation of *-sja* in passive derivations with making the external theta role implicit because affixation of *-sja* to transitive verb stems is common in nonpassive derivations, where *-sja* is clearly associated with externalization of the direct internal theta role. For example, see the function of *-sja* in the derivations of *atrofirovt´sja* and *korčit´(sja)* discussed above: There is no external theta role in the initial diathesis of these verbs, which means that affixation of *-sja* in both derivationsis is directly associated with externalization of the transitive verb's direct internal theta role. This is confirmed below in §4.4 where we deal with the derivation of *detransitive* (middle) verbs.[26] Thus we must conclude that the affixation of *-sja* to a transitive verb always makes it intransitive and, therefore, in passive derivations *-sja* is also directly associated with externalization of the initial direct internal theta role θ_2, which makes sense diachronically: *-sja* in Common Slavic was an accusative enclitic pronoun. Note that this analysis appears entail the assertion that passivization, which we have reduced to implicitization of q_1, is a lexical operation that is *not* associated with affixation (cf. §2.1.2).

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[24] We return to the function of *-en-* below (see Babby 1993a for analysis of the morphosyntax of the *-en-* suffix). I assume in what follows that *-sja* is affixed to a transitive stem and that there are no rules that eliminate an initial *-sja*.

[25] In the GB analysis, the passive affix is conceived of as having two simultaneous functions: absorption of the external theta role (dethematization = implicitization) and absorption of the base transitive verb's ability to assign accusative case (case absorption), which is responsible for the syntactic movement of the direct object NP to subject position. See Babby 1989 for argumentation against this analysis of the passive suffix's dual function.

[26] The only alternative to this conclusion is to assume that there are several homophonous *-sja* affixes and that the one used in passive derivations affects the external theta role, but the one used in the derivation of *korčit´sja* , detransitives, etc. does not. I shall assume here, however, that there is one *-sja* suffix and attempt to determine its "invariant" function, which is the more interesting hypothesis.

The analysis proposed above raises another question. What is the precise nature of the relation between externalization of θ_2 and affixation of *-sja*: which is the cause and which the effect? In Babby 1975 it was assumed that movement of the direct object in passive and detransitive derivations was a syntactic rule (NP-movement) and that affixation of *-sja* was the result of the operation of this syntactic rule, *-sja* being construed as essentially an overt trace of the displaced direct object NP. The lexicalist hypothesis favors a different interpretation of this relation: Affixation of *-sja* to V is the morphological component of a *lexical* rule whose function is the externalization of θ_2. Thus externalization of θ_2 is a diathetic operation, not a syntactic rule. This interpretation is entirely compatible with the data we have seen above. For example, in the case of unaccusative verbs like *atrofirovat'sja*, the initial diathesis contains a direct internal argument and an unlinked external categorial argument NP_1 (see (18)). Since Russian, unlike English, does not project empty (unlinked) NPs, θ_2 must be externalized as a diathetic operation so that the external argument can project into the syntax and thus avoid an ill-formed structure. It is the affixation of *-sja* that makes θ_2 external (see Babby 1996a).

We have now come to the crucial question: What is the relation between passivization, *-sja*, and externalization of θ_2? Passivization is a maximally simple universal operation: It makes the external theta role θ_1 implicit, creating a *derived unaccusative predicate* (see (36)), which then behaves just like initial unaccusative predicates like *atrofirovat'sja*: θ_2 must externalize in order to link to the external NP_1 and *-sja* is the affix associated with θ_2's externalization. In other words, viewed from this point of view, passivization is primary and the rule involving affixation of *-sja* and externalization of θ_2 is secondary and not passive-specific.

Viewed from a minimalist point of view, which builds structure from the bottom up, when *-sja* is affixed to a transitive verb's stem, θ_2 is made external, which means that the initial external theta role θ_1 must be *dethematized* to avoid a violation of the theta criterion (two theta roles cannot be assigned to the same position). Dethematization can take the form of *implicitization* (in passive derivations) or *suppression* (in middle/ detransitive derivations; see below). The prediction is that any diathetic operation that

dethematizes a transitive verb in standard Russian has the effect of externalizing θ_2, which is accomplished through affixation of *-sja* (if *-en-* has not already been affixed). Thus we see that passivization in Russian is in fact associated with an affix, but only *indirectly*.

There is some additional evidence that *-sja* in Russian is associated with externalization of θ_2 rather than with the dethematization of θ_1. In Russian V+*sja* does not canonically cooccur with an accusative direct object (*bojat´sja* 'to fear' + accusative is a lexicalized exception) and there is no productive *impersonal passive* in Russian. Impersonal passives are defined as passive sentences formed from intransitive (unergative) verbs. The external theta role is made implicit and, since there is no direct object, the sentence is impersonal by default: there is no direct object to externalize. Now, if *-sja* were directly related to the dethematization of the external theta role in Russian, we would expect there to be impersonal passives with *-sja*.[27] Note finally that productive impersonalization operations, which involve eliminating the base verb's external argument in standard Russian, do not involve affixation of *-sja* (cf. adversity impersonals like (34e); see Babby 1994a for details).

4.3. Transitive impersonal passives: The *-no/-to* construction (34g)

As noted above, when the base verb is perfective in standard Russian, the suffix *-en-* is affixed to the verb, forming a "passive participle;" everything else appears to be the same as in imperfective passive derivations, where the af(fix) specified in (36) is *-sja*. Thus it appears that the function of *-en-*, like *-sja*, is to facilitate externalization of the diathesis' direct internal theta role. However, there is evidence from Russian dialects, Ukrainian, and Polish showing that this impression may be false.

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[27] Sentences like the following are not productive (paradigmatic) in Russian: *V gazetax ne soobščilos´ o vojne* '(lit.) In the newspapers (it) was not announced+sja about the war.'

Consider sentences like *Mne ne spalos´/ne čitalos´/ne rabotaetsja/poetsja* etc. 'I_{DAT} don't feel like sleeping/reading/working/singing', which are not passive or detransitive. Here *-sja* is affixed to *intransitive* verbs and does appear to involve dethematization of the initial external argument; the dative experiencer is an adjunct (cf. Schoorlemmer 1996). Note that in Serbian/Croatian, the verb in this construction can be transitive, which shows that *se* (=*-sja*) in other Slavic languages does dethematize transitive verbs (see note 41): *Meni se pije kafa* 'I feel like drinking coffee.' *Kafa* is the derived nominative subject.

In addition to the canonical passive analyzed above for standard Russian (and English), Russian dialects, Ukrainian, and Polish have a transitive impersonal passive formed with the *-en-* suffix; this construction has the following significant properties:

(38)a. *-En-* is affixed to the perfective transitive verb stem, forming a participle.

b. The direct internal argument remains internal and maps onto the accusative direct object NP. So *-en-* does not absorb case and does *not* make θ_2 external.

c. Like intransitive impersonal passives, there is no subject, i.e. the sentence is subjectless (see Sobin 1985 for an orthodox GB analysis where there is a subject NP headed by a null expletive; see Babby 1989 for arguments against this analysis).

d. An impersonal inflectional ending is affixed to *-en-*; this is especially clear in Ukrainian, where the inflection suffix is *-o*, which is used only in impersonal constructions (*-e* is the neuter ending). In Russian the two endings are homophonous.

The following are examples of this construction.

(39)Litak zbyto (*zbyte). (Ukrainian)
airplane$_{ACC.MASC}$ shot-down$_{O}$ shot-down$_{NEUT}$
'The airplane has been shot down'

(40)Stefana wzięto do wołjska.[28] (Polish)
Stefan$_{ACC.MASC}$ taken$_{O}$ into army
'Stefan was drafted into the army'

[28] This construction is possible in Polish from intransitive verbs as well: *Pęakano bez końca* 'There was endless crying.' The Polish examples were supplied by James Lavine.

The transitive impersonal passive construction is important for two reasons. First, it demonstrates that *-en-* does not always involve externalization of the direct internal theta role. This suggests that, unlike *-sja*, affixation of *-en-* may involve dethematization of the external theta role. The second is that this construction provides additional evidence for external C-selection: Ukrainian has both the canonical passive and the impersonal passive just described, while standard Russian has only the canonical passive. The difference between Ukrainian and Russian can be easily accounted for in terms of the alterations to the initial diathesis introduced by passivization: while the Russian version of passive is accounted for by (36), Ukrainian passivization can be accounted for by the rule represented in (41).

(41)

(θ_1)	—	θ_2	θ_3
NP_1	V	NP_2	NP_3

→

—	θ_1	θ_2	θ_3
(NP_1)	[V+en]	NP_2	NP_3

According to (41), the only difference between the two rules is that passivization in Ukrainian makes the external categorial argument NP_1 optional: If NP_1 is selected, θ_2 must be externalized, the result being a canonical passive sentence. If optional NP_1 is not selected, the direct internal argument does not externalize, and the resulting diathesis projects an impersonal, subjectless sentence (see below for discussion of the function of the impersonal ending). Since the passive diathesis in both Russian and Ukrainian has no external theta role, the crucial difference between them boils down to the obligatoriness vs. optionality of the external categorial NP_1, which could not be captured if the argument structure representation did not include the lower tier (C-selection) and external C-selection.[29]

Notice that the external argument in the derived passive diathesis in (41) is identical to the *initial* external diathesis of verbs like *korčit´(sja)* (see §3.2) and the initial diathesis

[29] There is another way of capturing the difference between passivization in Russian and Ukrainian: We can assume that the Russian rule in (36) holds for Ukrainian as well and claim that the elimination of NP_1 in Ukrainian in impersonal passives is directly related to the affixation of the impersonal *-o* ending. This reduces the difference between these two closely related languages to a difference in the properties of their cognate impersonal affixes, not to a difference in the passive rule or diathesis. See the discussion of the effect of inflectional morphology on argument structure in §4.5. No matter how we account for the difference between Russian and Ukrainian, external C-selection plays a key role.

of adjectives like *vidno* 'visible' *slyšno* 'audible' in standard Russian, which have a personal ~ impersonal alternation parallel to the canonical ~ impersonal passive in Ukrainian. (42a-b) is an example and (42c) is the initial diathesis of this small class of "unaccusative" adjectives.[30]

(42)a. Doroga byla vidna.
road$_{NOM.FEM}$ was$_{FEM}$ visible$_{FEM}$

b. Dorogu bylo vidno.
road$_{ACC.FEM}$ was$_{NEUT}$ visible$_{NEUT}$

'The road was visible.'

(42) c.

—	—	2
($NP_{1)}$	A-	NP_2

[30] *-Sja* is not affixed to [+N] stems when their direct internal theta role is externalized; thus we do not find *-sja* affixed to *-en-* participles, basic adjectives, and derived nominals, even when the corresponding sentence has a *-sja* (see Babby 1997: 224). Thus (a) is the nominalization of both (b) and (c):

(i) napolnenie jamy vodoj 'the-filling of-the-pit with-water'.

(ii) Jama napolnilas´ vodoj 'The-pit filled with-water'.

(iii) Napolninli jamu vodoj 'They-filled the-pit with-water'

There are two exceptions to this generalization, which demonstrates that the two-featured analysis of lexical categories is inadequate: "active participles" in Russian have *-sja* where the finite verb in the corresponding sentence would, and Polish derived nominals have *-się* affixed to them when the finite verb in the corresponding sentence would.

Note too that the constructions discussed in this section argue against Burzio's generalization.

4.4. Detransitivization: Middle, derived intransitive, and anticausative (34c)

The initial diathesis of *napolnit´* given in (35) is repeated here as (43). In active derivations, the optional external theta role in (43) is selected and mapped onto the subject NP of the projected sentence; in passive derivations, θ_1 is also selected, but made implicit (licensing an optional *by*-phrase).

(43)

(θ_1)	—	θ_2	θ_3
NP_1	V	NP_2	NP_3

If θ_1 is *not selected*, (43) becomes an unaccusative diathesis and, as we saw above, θ_2 must be externalized and *-sja* must be affixed to the verb (see §4.3). We shall refer to these sentences as *detransitives* (the term *derived intransitives* was used in Babby 1975); (44) is an example. The main difference between the unaccusative passive diathesis (41) and the unaccusative detransitive diathesis in (45) is that θ_1 is not mapped onto the syntax in detransitive sentences (which is why the *by*-phrase is impossible). The function of passive sentences is thus primarily to *defocus* the verb's initial external theta role (agent) while the function of detransitives is to *dissociate* or even eliminate the agent from the action denoted by the verb (e.g.: *xorošaja sigara budet kurit´sja po krajnej mere polčasa* 'a good cigar will smoke for at least half an hour'.[31]

(44)Jama	napolnilas´	vodoj	(*rabočimi).	[= (34c)]
pit	filled+sja	with-water$_{INST}$	(*by-the-workers)	

(45)

(θ_1)	—	θ_2	θ_3	→	—	—	θ_2	θ_3
NP_1	V	NP_2	NP_3		NP_1	[V+af]	NP_2	NP_3

[31] In this sentence a *smoker* (agent) is implied, but the action is presented as dissociated from the agent; smoking for a certain period of time is interpreted as a property of the cigar (cf. English *This toy assembles in minutes*). By contrast, in the following sentence no agent is implied: *Vulkan kurítsja* 'The volcano is-smoking' (notice the stress here). Thus there are two subtypes of detransitives with respect to the initial agent, which correspond to suppression (nonprojection) of the agent vs. elimination of the agent.

-*Sja* is affixed to both perfective and imperfective verbs in detransitive sentences.[32] Note that *vodoj* 'water$_{INST}$' in (44) is the indirect internal argument, not the bare instrumental *by*-phrase (cf. *Kondensator oxlaždalsja morskoj vodoj* 'The-condenser was-cooled with seawater'). Now consider the sentences in (46) and (47).

(46)Frukty bystro portjatsja.
'Fruit spoils quickly'

(47)Frukty isportilis´.
'The fruit spoiled'

Sentences like (46) are usually referred to as *middle* sentences (they denote an inherent property of the subject), while sentences like (47) are treated as a different type of sentence. However, the difference in meaning between sentences like (46) and (47) can be accounted for in terms of the verbs' tense and aspect, the adverbs involved, the definiteness and referentiality of the subject NP, etc., but both sentences have the same derivation (represented in (45)) and both are thus detransitive sentences (see Fagan 1988). (Another subtype of the detransitive sentence, the *anticausative*, is discussed below).

Notice that in the derived detransitive diathesis in (45) I did not specify -*sja* as the affix; this is because -*en*- is also used in Russian to form *stative* or *resultative detransitives*, e.g.:

(48)a. Frukty isporčeny.
'The fruit is spoiled'

b. Frukty isportitlis´.
'The fruit spoiled'

[32] The fact that the affix in passive derivations is -*sja* when the verb is imperfective and -*en*- when the verb is perfective must be stipulated. In other Slavic languages, these restrictions do not apply.

(49)a. On prostužen.
‘He has a cold’

b. On prostudilsja.
‘He caught cold’

(50)a. U nee ruki smorščeny.
‘Her hands are wrinkled’

b. U nee ruki smorščilis´.
‘Her hands wrinkled’

The a-sentences in (48–50) are stative *-en-* detransitives and the corresponding b-sentences are nonstative *-sja* detransitives: both are derived by the rule in (45) and, therefore, neither has an implicit theta role and neither can cooccur with a *by*-phrase. Thus both *-sja* and *-en-* are used in passive and detransitive derivations, and neither can therefore be characterized as a “passive affix,” i.e., neither suffix is directly and/or exclusively associated with making the external theta role implicit (cf. Andersen 1989).

4.4.1. The causative ~ anticausative alternation

It has been proposed that the transitive verbs *break* is a causative verb that alternates with the anticausative intransitive of *break* (see Levin and Rappaport Hovav 1994), e.g.: *John broke the vase* (causative) ~ *The vase broke* (anticausative). I argue on the basis of Russian that transitive sentences like *Ivan razbil vazu* ‘Ivan broke the vase’ are not causatives and their intransitive counterparts are thus not anticausatives (*Vaza razbilas´* ‘The vase broke’). While Russian does have sentences that can be characterized as anticausatives, these sentences and the causative sentences they alternate with are not the projection of a special type of derived diathesis, i.e., they are not independent members of the diathetic paradigm in Russian. I argue rather that the causative sentences we shall be looking at in this section are simply projections of initial monotransitive diatheses and the anticausatives they alternate with are simply detransitives and, like the middle sentences discussed above, their status as a subtype of detransitive sentences is determined semantically—in terms of the value of the theta roles involved.

I define a sentence, either initial or derived, as a canonical causative if it contains two agent theta roles: One agent role is external (the subject) and is semantically interpreted as the *causative agent* (the initiator of the action denoted by the verb); the other agent is VP-internal, typically the direct object, and it denotes the *direct agent*, the one who is made or convinced (or allowed) by the causative agent to perform the action denoted by the verb. Given this definition, transitive verbs like *razbit´*, *isportit´* 'spoil, break', *slomat´* 'break' etc. are not causative verbs (their diathesis contains only one agent, the external direct agent) and their detransitive forms *razbit´sja*, *isportit´sja*, *slomat´sja*, are thus not anticausatives.

While Russian does not have a productive morphological causative, which would be a distinct member of the diathetic paradigm since it involes affixation of a productive causative suffix (see discussion of Turkish in Babby 1981, 1997), it does have initial (underived) transitive *lexical causative* verbs which have intransitive anticausative counterparts to which *-sja* has been affixed, e.g.:

(51)a. Kapitan spešil vsadnikov.
'The captain dismounted the riders'

b. Vsadniki spešilis´.
'The riders dismounted+sja'

c. Kapitan zastavil vsadnikov spešit´sja / *spešit´
'The captain made the riders dismount'

(52)a. On possoril staryx druzej.
'He quarreled the old friends (= made them quarrel)'

b. Starye druz´ja possorilis´.
'The old friends quarreled+sja'

(53)a. Pastux paset stado.
'The shepherd grazes the flock'

(53)b. Stado pasetsja.

'The flock is grazing+sja'

The initial diathesis of *spešit´* 'dismount' is represented in (54): it is an ordinary monotransitive diathesis with the following criterial property: both the initial external theta role and the direct internal theta role are agents, which means that its *active* (unaltered) projection will be interpreted as a causative sentence. Thus the initial diatheses of *spešit´* and *razbit´* have the same structure; the only significant difference is that the direct internal theta role of *razbit´* is not an agent and its projection thus does not received a causative interpretation.

(54)

θ_1	—	θ_2
NP_1	V	NP_2

The anticausative b-sentences in (51–53) are simply the projection of the base verb's detransitive diathesis. Its subject is interpreted as a *direct agent* because it is the externalized direct internal theta role, which is the direct agent of lexical causative verbs. *-Sja* here, as in all derivations involving a transitive verb, is associated with making the direct internal argument external; it is not an anticausative suffix any more than it is a passive or middle suffix; in all these cases it is the detransitive suffix.

This analysis accounts for the *-sja* affixed to basic transitive verbs of motion like *vernut´* 'return', which are detransitive verbs with an agentive subject = θ_2. *On vernulsja domoj* 'He returned home' is the anticausative of the transitive *Ego vernuli domoj* 'They made him return home'; i.e., in this use, *vernut´* is a basic montransitive verb which assigns an agent role to both its subject and direct object (=causative); thus *On vernulsja* 'He returned' has the same derivation and semantics as *On spešilsja* 'He dismounted': *on* is the initial direct internal argument whose theta role is agent. What makes *vernut´* more complicated is that it can also assign an ordinary patient role to the direct internal argument, in which case the transitive sentence does not receive a causative reading: *On vernul knigu v biblioteku* 'He returned the book to the library.' This analysis correctly

predicts that sentences like *My vernuli ego* should be ambiguous between a causative and noncausative reading, i.e. 'We made him return' ~ 'We brought him/it back.' See also: *Ja ostavil Ninu i otpustil drugix* 'I had/made Nina remain and let the others go' (*Ja ostavil Ninu = Ja zastavil Ninu ostat'sja* 'I made Nina remain/stay').

I conclude that the causative ~ anticausative alternation, which is common in Slavic, is a special case (subtype) of the initial ~ detransitive alternation and, therefore, there is no distinct causative diathesis or voice in the diathetic paradigm of the Slavic verb. The causative ~ anticausative meaning of basic transitive verbs like *spešit'~ spešit'sja* is determined entirely by the presence of two agents in the base verb's diathesis. The issue of whether causative alternations should be subsumed under *voice* is simply a pseudo issue. In languages like Japanese, which have dedicated causative affixation, causative is a member of the diathetic paradigm; in Slavic, causative alternations like (51–53) do not involve special morphology or lexical rules, are not projections of special diatheses, and are not a voice phenomenon.

4.5. Demiactive diatheses, lexical rules, and voice: (34d)

Let us return once again to the initial diathesis of *napolnit'* in (43). If the optional external theta role (agent) is not selected, the following ditransitive unaccusative diathesis is derived:

(55)

—	—	θ_2	θ_3
NP_1	V	NP_2	NP_3

Three different diatheses can be derived from (55): the detransitive (34c), the demiactive (34d), and the impersonal (34e) (impersonals are considered in the next section).

If the direct internal theta role is externalized (which is associated with affixation of the suffix *-sja*), the resulting sentence is a detransitive: *Jama napolnilas' vodoj* (**rabočimi*) 'The-pit filled with-water (*by-the-workers)'; the indirect internal argument remains internal and its syntactic realization depends on its theta role (= semantic case), just as it does in the active sentence (the material/substance theta role is realized as an instrumental NP; see *vodoj*). But it is also possible in (55) for the indirect internal theta

role to externalized (=θ_3/NP_1), in which case it is realized syntactically as a derived nominative subject linked to a material/substance theta role, as in (56) (recall that subjects are realized as the bare nominative NPs no matter what their theta role is). We can refer to this type of sentence as *demiactive* since it looks superficially like an initial, underived transitive active sentence; but evidence is presented below that demiactives behave differently from underived transitive sentences. Thus the diathesis in (57), which projects the demiactive in (56), is derived from (55) by externalizing θ_3 (cf. the initial diathesis in (54)).[33] (Subnumber refer to NP's theta role.)

(56) Voda$_3$ napolnila jamu$_2$ (*rabočimi).
water$_{NOM}$ filled$_{FEM}$ pit$_{ACC}$ (by-the-workers)
'Water filled the pit'

(57)

θ_3	—	θ_2
NP_1	V	NP_2

There has been very little discussion of demiactive sentences in the literature (see Apresjan 1967, 1974; Babby 1994a) for the obvious reason that they appear to be ordinary, underived active transitive sentences. We have already encountered a detransitive ~ demiactive alternation above in §3.3: *Mne$_3$ vspomnilis´ starye pesni$_2$ ~ Ja$_3$ vspomnil starye pesni$_2$* 'I remembered the old songs.' The diathesis from which this alternation is derived can also be represented by (55), only for *vspomnit´* (55) is the initial diathesis while for *napolnit´* it is derived (the optional agent has been deselected); cf. (25) and (45). What is crucial is that in the derivation of both *Voda napolnila jamu* and *Ja vspomnil starye pesni*, the nominative subjects are externalized indirect internal argument (in the case of *vspomnit´,* θ_3 = experiencer, which is realized VP-internally as dative

[33] This derivation correctly predicts that sentences like the following are ambiguous: *Studenty zapolnili teatr* 'Students filled the theatre': *Studenty* can be the agent, in which case the sentence is initial (active) or *studenty* can be the indirect internal theta role (=material), in which case the sentence is demiactive (with a human indirect internal argument). This analysis is confirmed by the existence of sentences like *Teatr zapolnilsja studentami* 'The theatre filled with (*by) students', which is detransitive, not passive (the passive of perfective verbs in Russian is formed with *-en-*, not *-sja*. *Teatr zapolnen studentami* 'The theatre is filled with/by students' is predictably ambiguous in the same way.

when it remains internal in the corresponding detransitive sentence, and in the case of *napolnit´*, θ_3 = material / substance, which is realized VP internally as the instrumental case). The following is an example of an active ~ demiactive alternation:

(58)a. (Oni$_1$) tušat ogon´$_2$ vodoj$_3$.
'They put out fire with water'

b. Voda$_3$ tušit ogon´$_2$.
'Water puts out fire'

In §2.1.2 the issue was raised whether or not lexical rules always involve affixation (recall that Mel´čuk and Xolodovič 1970 defined *voice* as a morphologically mediated derived diathesis, which implies the existence of derived diatheses without special morphology). If all systematic modification of the verb's initial theta roles involves affixation, then what we have been calling a *lexical rule* reduces to the simple composition of stems and affixes and the amalgamation of their initial diatheses.[34] The demiactive is important because it seems to be a clear-cut example of a lexical rule that does not involve affixation; more precisely, unlike the derivation of detransitive sentences, externalization of θ_3 in demiactive derivations does not appear to involve corresponding affixation.

However, according to the Minimalist Program, derivations proceed from bottom to top: First the verb and its arguments are formed (cf. strong lexicalist hypothesis), then these fully formed words are combined two at a time into phrases, and phrases combine into larger phrases and sentences (cf. [[[X+Y] +Z]+W], where all expressions are fully formed words). If this is correct, then the verb must be affixed with its *inflectional* (subject-agreement) morphology *before* it composes with its arguments, which means in effect that it is the verb's inflectional morphology that determines(selects) which of the internal arguments is to be externalized (when the initial external argument is not selected or made implicit under passivization). For example, if the verb agrees with its initial

[34] A crucial assumption of theta theory and the theory of diathetic alternations being proposed in this paper is that lexical rules may rearrange, eliminate, or add a theta role (cf. passive, detransitive, and causative derivations respectively), but a lexical rule is not able to *convert* one theta role into another (e.g. agent into experiencer). See note 27.

indirect internal argument, the derivation must allow for the externalization of the indirect internal argument so that its agreement features can be properly checked (or the derivation will crash). In other words, the indirect internal argument's selection as subject is induced by the verb's inflectional morphology (see Babby 1994a and 1996a for preliminary discussion of the interaction of inflectional morphology and argument structure).[35] If this analysis of agreement morphology is confirmed by future research, it seems feasible to claim that diathetic operations canonically involve affixation and its principled effects on the fused diatheses of the affix and the verb stem, which constitutes a considerable simplification of the overall theory. Note that the reduction of diathesis-changing lexical rules to affixation entails that syntactic differences between languages can by and large be reduced to the inventory and properties of their affixes, a stated goal of the Minimalist Program. One result of these proposals then is the realization that *agreement* is far more central to the syntax of the Slavic languages than is usually supposed and its function in the Slavic languages should be reconsidered in this light (see Lavine, in preparation).

4.5.1. Arguments supporting the demiactive derivation

Keenan 1976: 325 correctly notes that while derived subjects may look superficially like initial subjects (i.e., nominative + agreement), they often do not *behav*e syntactically like initial subjects. It follows that if the subjects of demiactive sentences are derived subjects, as I am claiming, then demonstrating that demiactives do not behave syntactically like basic transitive sentences with initial subjects provides evidence supporting my analysis.

The derivation proposed above correctly predicts that demiactives are transitive sentences with nominative subjects that should **not passivize**.[36] This follows automatically from the fact that passivization invariably involves making the verb's external theta role implicit and, according to our analysis, the initial diathesis of the

[35] If it is the inflectional morphology that is responsible for the externalization of internal theta roles, why is *-sja* affixed to the verb in detransitive derivations? Note that there is no suffix used in the corresponding English sentences.

[36] We will limit this part of the discussion to verbs like *vspomnit´* 'remember', whose initial diathesis does not have an external theta role, since the initial diathesis of verbs like *napolnit´* has an initial optional external theta role (agent), which obscures the crucial relations; see footnote 33.

sentences we are calling demiactives do not have an external theta role and, therefore, are not candidates for passivization.[37] For example, recall the diathesis of *vspomnit´* is (25), repeated here as (59), which predicts that *vspomnit´* can be the predicate of a detransitive sentence, as in (60a) and a demiactive sentence in (60b) (where the direct internal experiencer theta role is externalized), but not a passive sentence (see (60c)); (61) is an additional example (see Babby 1994a: 49 for details; Kil´dibekova 1980: 195).

(59)

—	—	2	3
NP_1	V	NP_2	NP_3

(60)a. Nam_3 vspomnilas' staraja $pesnja_2$.

b. My_3 vspomnili staruju $pesnju_2$.

c. *Staraja $pesnja_2$ byla vspomnena nami.

(61)a. Im slyšatsja stony. (detransitive)
$them_{DAT}$ $hear_{PL}$+sja $moans_{NOM.PL}$

b. Oni slyšat stony. (demiactive)
$they_{NOM.PL}$ $hear_{PL}$ $moans_{ACC.PL}$
'They hear moans'

[37] While it is clear that derived subjects in Slavic cannot passivize, it is not immediately clear why. The most promising explanation is essentially morphological: the affixation involved in externalization is not compatible with the affixation involved in passivization.

(61)c. *Imi slyšatsja stony. (passive)
by them$_{INST}$ are heard+sja moans$_{NOM\cdot PL}$

'Moans are heard by them'

If the sentences we are calling demiactive were ordinary transitive sentences with an initial external theta role, there would be no natural explanation of their systematic failure to passivize. In other words, the diathesis in (59) correctly predicts that all verbs that have no initial external theta role must have a systematic gap in their diathetic paradigms: the passive is simply underivable.

A second type of evidence supporting the hypothesis that the nominative subject of demiactives is an externalized θ_3 comes from a phenomenon called *shadow reflexives* in Klenin 1973 (the term *resumptive reflexive* was used in Babby 1994a); examples are given in (62–63). In the transitive sentences we are calling demiactives (but not in initial transitive sentences, whose subject is a θ_1), there can be an optional reflexive pronoun with the following significant properties: (i) its case is the same as the semantic case that the θ_3 role has when it is VP-internal (e.g. instrumental if θ_3 = material/substance, etc.); (ii) the reflexive is not an autonomous argument of the verb in the sense that it does not have its own theta role: it appears to share the theta role of the subject, which makes it look like an overt trace; (iii) its presence does not alter the sentence's meaning (the restrictions on the use of these resumptive reflexives and their function are not clear).

(62)a. Gotovaja stal' napolnila (soboj) vysokie štamby.
'The finished steel filled the high vats (with itself)'

b. Soglašenie zamenilo (soboj) stat´i Versal'skogo dogovora.
'The agreement replaced the articles of the Versailles treaty (with itself)'

(63)a. Laborant rastvorjaet sol' v vode. (active: subject = θ_1)
'The lab assistant dissolves salt in the water'

b. Sol' rastvorjaetsja v vode. (detransitive: subject = θ_2)
'Salt dissolves in water'

(63)c. Voda rasstvorjaet (v sebe) sol′. (demiactive: subject = θ_3 (locative))
'Water dissolves salt (in itself)'

The fact that it is just the class of transitive verbs that we are calling demiactives that permits these optional resumptive reflexives is another formal difference between demiactive (subject = θ_3) and initial active transitive sentences (subject = θ_1). But the fact that these optional reflexives act like VP-internal traces is particularly convincing evidence for our analysis, which claims that the surface subjects of demiactives move from their initial indirect internal position in the verb's initial diathesis to the external position in the derived diathesis.[38]

4.6. Impersonal diathesis: (34e)

We saw in §4.5 that three diatheses can be systematically derived from the diathesis in (55) (repeated here as (64)): the detransitive and demiactive were discussed above. In this section we consider the third, the *adversity impersonal* diathesis, which, as we see below, provides additional evidence for our analysis of demiactives and for our central hypothesis that verbs in Slavic crucially involve external C-selection.

(64)

—	—	θ_2	θ_3
NP_1	V	NP_2	NP_3

If the diathesis in (64) is *impersonalized*, the following happens: (i) The verb is affixed with what appears to be neuter, third person, singular morphology (which we abbreviate as *-o*). (ii) Neither of the internal arguments is able to externalize: the direct internal argument is realized as a bare accusative NP and the morphosyntactic realization of the indirect internal argument depends on its theta role. As we saw above, θ_3 is

[38] We are assuming here as elsewhere that externalization of an internal theta role is a diathetic operation, not a syntactic one (see Williams' 1994 argumentation against the syntactic rule of NP-movement). It is thus not clear whether we need to claim that externalization leaves a "trace" in its initial position (cell) in the diathesis. Since the constraints on the appearance of the resumptive reflexive have not been determined, we must leave these questions for future research. This however does not diminish the diagnostic value of resumptive reflexives (see Babby 1994a for discussion).

material/substance with *napolnit´* and is thus realized as a bare instrumental case NP. No overt subject is possible with Russian impersonal sentences (recall that the Slavic languages have no expletives like *it* and *there* in *English*.). Now, this is precisely what we would expect to happen when externalization is blocked (which, of course, also happens when the base verb's external theta role is selected, producing an active sentence, as in (34a)): neither of the internal theta roles can externalize and both are realized VP-internally. This derivation thus supports the internal origin of the subject in demiactive sentences. The following are examples of adversity impersonal sentences ((65a) = (34e)); (see Babby 1994a for details).

(65)a. Jamu$_2$ napolnilo vodoj$_3$.
pit$_{ACC.FEM}$ filled$_{NEUT.SG}$ water$_{INST.FEM}$

'The pit filled with water'

b. Vzryvnoj volnoj ix razbrosilo podobno igruškam.
shock wave$_{INST}$ them$_{ACC}$ tossed$_{NEUT}$ like toys

'The shock wave (from the bomb) tossed them around like toys.'

c. Vrač zakryl ranu polotencem, čtoby
doctor$_{NOM}$ covered wound$_{ACC}$ with towel$_{INST}$ so-

that

ego ne zabryzgalo krov´ju.
him$_{ACC.MASC}$ neg spattered$_{NEUT}$ with blood$_{INST.FEM}$

'The doctor covered the wound with a towel so that he wouldn't get spattered with blood.'

We must first ask why verbs like *vspomnit´,* whose initial diathesis can also be represented by (64), cannot impersonalize (**Nam vspomnilo staruju pesnju*). The reason is that impersonalization is not like passivization, which applies to transitive verbs without regard for the natural semantic class of the main verb or the overall semantics of the sentence: If the verb is transitive and has an external theta role, it will normally passivize. Adversity impersonalization is semantically restricted, i.e. it applies to the natural class of verbs that denote a real-world physical event that can proceed either with or without the participation of human beings; this excludes *vspomnit´*. The resulting

impersonal sentence asserts that the action denoted by the verb is *not* controlled by the verb's optional agent; it most frequently has an *adversity* meaning because assertion of *noncontrol* of the action denoted by the verb by an agent(human) is easily construed as being "out of control" and, therefore, dangerous for human beings (see Babby 1994a for details).

We have seen above what an impersonal sentence looks like and how impersonalization affects the internal arguments (blocks their externalization). A far more difficult task is stating explicitly what kind of a rule impersonalization is. More specifically, is affixation systematically involved? Space allows me to present some of the alternatives but not conclusive argumentation for which is correct (see Babby 1989, 1994a for preliminary discussion).

- Impersonalization in traditional grammar is normally considered to be a syntactic operation that deletes the subject (the verb's external argument) and *-o* is a default agreement suffix affixed to the verb whenever there is no subject for it to agree with. Since affixation of *-o* here is induced by a syntactic rule, derivations of this kind violate the strong lexicalist hypothesis and can thus be eliminated.
- Impersonalization involves making a neuter singular null expletive the subject of the sentence, and *-o* simply agrees with it as in the case of overt neuter singular subject nouns. The null expletive subject blocks the externalization of the internal arguments just as overt subjects do.

There are many problems with the null expletive analysis (see Babby 1989, 1994a for details). First, there are no overt expletives in Russian (Slavic), and it is therefore unlikely that there is a covert one. The best argument against the null expletive analysis of impersonals comes from Ukrainian (and Lithuanian): the impersonal suffix *-o* here is *neither* the neuter, masculine, or feminine singular, which means that the null expletive would have agreement features shared by no other lexical item in the language; it would require a "forth gender" in Ukrainian (see (39)). We will thus discard the null expletive analysis and consider other analyses that are more "minimal," i.e., do not rely on null categories for which there is no language-internal evidence.

- It was assumed in Babby 1989 and 1994a that impersonalization is a diathetic operation that involves eliminating the external categorial argument NP_1; this is of course possible only when NP_1 is not linked to an external theta role.[39] I will assume that this is the correct approach, and consider its implications. If correct, this is another piece of evidence supporting the hypothesis that the verb's external syntactic category must be specified in the diathesis (external C-selection): NP_1 cannot be deleted by a lexical rule if it is not represented in the verb's diathesis to begin with.

The crucial question now is: What is the relation between elimination of NP_1 and affixation of *-o*, the "impersonal ending" (which is the term used for it in traditional Russian grammar)? This question is related to another that was raised earlier: Do all lexical rules involve affixation (cf. §§2.1.2 and 4.5)? More specifically, does the rule of impersonalization involve affixation? It appears that the impersonal affix *-o* is directly related to elimination of the external categorial argument NP_1, which is another case of inflectional morphology having a direct effect on the verb's diathesis and, therefore, on the syntax (cf. the derivation of demiactive sentences). The *-o* suffix cannot simply be the "default" ending affixed to the verb when there is no subject for it to agree with because this sequence of events violates the strong lexical hypothesis. We saw in the derivation of demiactives that only fully formed words combine in the syntax, and that selection of θ_3's agreement inflectional morphology by the verb has the effect of inducing the externalization of θ_3 so that its features can be checked. What happens in the derivation of impersonal sentences is that selection of *-o* is equivalent to nonselection of an external argument; this means that there can be no externalization of an internal argument because there are no external features to check. Thus externalization of an internal argument when

[39] It was pointed out above that an NP_1 linked to a theta role is removed from the diathesis in the derivation of nonfinite verbal categories (verbal adverbs, verbal adjectives, controlled infinitives), in which case the projected bare nonfinite VP's external theta role is satisfied by being vertically bound by the external theta role of the XP immediately dominating it (cf. Babby 1998). While these nonfinite categories are *subjectless*, they are not *impersonal*, i.e. they have an "understood subject" (their unlinked external theta role). This means that an *impersonal* predicate has no external theta role and no external categorial expression.

-o is affixed to the verb should result in an ill-formed structure (but see the hybrid impersonal sentence (34f) in the next section). Thus, when a verb like *napolnit´* is impersonalized, neither of its internal argument can externalize; they both remain internal in the impersonal diathesis and have the same realization as they do in active sentences where it is the selection of θ_1 and its inflectional features by the verb that blocks externalization. Note finally that if nonselection of the external theta and elimination of NP_1 are separate diathetic operations, as I am claiming, then this constitutes additional evidence for claiming that S-selection and C-selection are autonomous tiers in the representation of the verb's argument structure.

Thus *impersonalization* is a systematic, affix driven diathetic operation (with semantic constraints) that operates on a diathesis, initial or itself derived, that has NP_1 but no external theta role: affixing the impersonal suffix *-o* is directly associated with eliminating the unlinked NP_1. More specifically, impersonalization involves composition of a verb's diathesis with the impersonal suffix *-o*, whose diathesis is specified for not having an external theta role or NP_1. Since *-o* is the head of [V+o], the resulting derived word has no external theta role or external NP. Impersonalization thus coverts the diathesis in (64) into the impersonal diathesis schematically represented in (66).

(66)

—	—	θ_2	θ_3
—	$[V+\text{-o}]_V$	NP_2	NP_3

If this analysis of impersonalization is correct, the study of impersonal sentences properly reduces to determining which classes of *personal* verbs, i.e., verbs with an initial external NP, license affixation of *-o* under what circumstances.[40] Must all constraints on impersonalization be stated in terms of verb class restrictions?

If *-o* is a dedicated impersonalizing suffix, as I am claiming, then the impersonal sentence in diathetic paradigms like (34) can be classified as a separate voice, which has

[40] This raises an interesting question: What must be stipulated in the initial diathesis of initial (absolute) impersonal verbs like *tošnit´*: a diathesis like (9), which entails affixation of *-o*, or [V+o], which induces elimination of NP_1 (cf. verbs like *bojat´sja* 'to fear' with lexicalized *-sja*), or both?

no consequences for the grammar and illustrates once again the pointlessness of voice taxonomies.

4.7. Hybrid adversity impersonal sentences: (34f)

The last type of sentence in the diathetic paradigm in (34) is the hybrid impersonal, a type of sentence which occurred in Old Russian; it is still found in some dialects, but not in standard Russian. I call it the *hybrid impersonal* because it combines crucial properties of the adversity impersonal (34e) (the verb is affixed with the impersonal ending *-o)* and the adversity personal (demiactive) (34d): there is a nominative subject despite the presence of *-o*, which is precisely what we predicted in the preceding section should not happen. See the following examples ((67) = (34f)).

(67)Voda napolnilo jamu.
water$_{NOM.FEM.SG}$ filled$_{NEUT\cdot SG}$=impers. pit$_{ACC}$

'Water filled the pit (which had an adverse effect)'

(68)a. Menja strela ranila. (adversity personal=demiactive)
me$_{ACC}$ arrow$_{NOM.FEM,SG}$ wounded$_{FEM.SG}$

'An arrow wounded me'

b. Menja streloj ranilo. (adversity impersonal)
me$_{ACC}$ arrow$_{INST.FEM.SG}$ wounded$_{NEUT.SG}$=impers.

'An arrow wounded me'

c. Menja strela ranilo. (hybrid adversity impersonal)
me$_{ACC}$ arrow$_{NOM.FEM.SG}$ wounded$_{NEUT.SG}$=impers

'An arrow wounded me'

Note first of all that sentences like (67) and (68c) are possible only when the verb also has a demiactive diathesis ((68a)), which is additional evidence that the syntactic properties of demiactives are different from those of basic transitive sentences: initial transitive active sentences cannot have an impersonal verb (V+o) and a nominative subject (**Oxotnik menja ranilo streloj* 'The-hunter (accidentally) shot me with an arrow'). We will be concerned here with the cooccurrence of *-o* and a nominative subject whose head is not neuter, which precludes a subject-verb agreement analysis.

My proposal is that Old Russian sentences like (68c) and (67) are demiactives, not impersonals: The verb's initial indirect internal theta role θ_3 has externalized and is

projected as the sentence's nominative subject, just as it is in standard modern Russian demiactives. The reason why the verb fails to agree with its nominative subject in these sentences is the following: In Old Russian, the verb normally agrees in gender and number with the projection of its *initial* external argument, but not with the projection of derived external arguments. As we saw above, the nominative subject in demiactives is derived (externalized), i.e., occupies the indirect internal position in the initial diathesis. This means that the Old Russian *-o* suffix in sentences like (67) is not an impersonal ending; it is either a default neuter singular (the same used with infinitive subjects, which have no inherent features for the verb to agree with), or, more likely, it is affixed to the verb in Old Russian to mark the fact that the verb's initial external theta role has been displaced (dethematized). Since Old Russian and modern Russian are different languages, we expect to find that what is historically the same affix has different properties or functions in each language (e.g., *-sja* has different properties in other Slavic languages[41]).

This analysis of *-o* in Old Russian and modern dialect sentences like (67) and (68c) makes the following correct prediction: If the function of *-o* in *adversity demiactives*

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[41] The *-sja* suffix in Russian is normally directly associated with the verb's direct object (we have considered only its productive uses in this paper, i.e. in passive, unaccusative, and detransitive derivations). Here *-sja* is affixed only to transitive stems since it is associated with externalization of θ_2, which, in turn, "induces" dethematization of the external theta role (it is made implicit or suppressed/eliminated) (cf. theta criterion). Thus in Russian, *-sja*'s effect on θ_1 is indirect. What seems to have happened in other Slavic languages is that the function of -SJA (=-sja in any Slavic language) was reanalysed as *directly* effecting dethematization of the verb's external theta role. In languages in which -SJA is directly associated with displacing initial θ_1 we expect to see different uses of -SJA, e.g., affixation of -SJA to intransitive (unergative) verbs as well as transitive and cooccurrence of -SJA with an accusative direct object. This is indeed what we find, which confirms our analysis.

In languages in which -SJA is associated with θ_1 we find *impersonal passives*, i.e. -SJA is affixed to an intransitive verb and θ_1 (= human) is dethematized; the sentence is *impersonal* because there is no direct internal theta role to externalize. See the following examples:

(i) Nabalu się tańczy. (Polish)
atball SJA dance*3.SG*

'One dances/there is dancing at the ball'

(ii) Tridana se jelo, pilo, i pevalo. (Serbian/Croatian)
threedays SJA ate*3RD.NEUT.SG* drank and sang

'There was eating, drinking, and singing for three days'

The following Polish example of -SJA + accusative is from James Lavine.

(iii) We wsi buduje się nową szkolę.
invillage builds SJA new*ACC.FEM* school*ACC.FEM*

'A new school is being built in the village'

See Siewierska 1988 and Dziwirek 1994 for discussion.

(=hybrid impersonals) simply marks a noninitial nominative subject, then we should observe the same lack of agreement in passive sentences, where the nominative subject is also derived (=θ_2). Examples like the following demonstrate this is precisely what we find (see Spinãak 1960 for discussion; here the *by*-phrase is the preposition *u* 'at' + genitive).

(69)U staruxi voda prineseno. (Russian dialect)
at old-lady water$_{NOM.FEM.SG}$ brought$_{NEUT.SG}$
'The water has been brought by the old woman'

(70)Učinilos´ u moskovskogo carja s pol'skim krolem vojna.
done$_{NEUT.SG}$ by Moscow tsar$_{GEN}$ with Polish king
war$_{NOM.FEM.SG}$
'A war was initiated by the tsar of Moscow with the king of Poland' (Old Russian)

In modern standard Russian, subject-verb agreement no longer distinguishes between initial and derived subjects, and the *-o* suffix has developed into an impersonal ending, as it has in Ukrainian and Lithuanian, where the relations are clearer because the "new" impersonal endings are not homophonous with neuter agreement: in Lithuanian, the impersonal ending is also historically neuter, but Lithuanian no longer has neuter nouns (see Babby 1996a for details).

5.0. Summary and conclusions

I have argued in this paper that a verb's *argument structure* consists of the set of its theta roles (S-selection) linked to the set of its categorial arguments (C-selection); this two-tiered representation of argument structure is encoded in the verb's lexical entry as its *diathesis*. The Slavic languages provide evidence that (i) C-selection and S-selection are autonomous: neither can be predicted from the other and, therefore, both provide information that is essential for determining the projected sentence's basic syntactic structure. (ii) More controversially, we have also seen various kinds of evidence from Slavic that *external C-selection* must be specified in each verb's diathesis.

Lexical rules operate on the initial diathesis, and the set of a verb's derived diatheses is its *diathetic paradigm*. We have also seen that the vast majority of (if not all) argument-structure based rules in Slavic can be shown to involve affixation and, therefore, the evidence presented above supports the hypothesis that a *lexical rule* is essentially the composition of a stem and affix and the integration of their diatheses.

I have also argued that, while *voice* can be defined as subset of a base verb's derived diatheses (determined by an arbitrarily selected formal property), it is by and large a taxonomy rather than an autonomous component of grammar, which is why there is no discussion of "the theory of voice" in the generative literature. I have proposed that *voice* should be replaced by the notion of *alternation* based on the full diathetic paradigm. One of the problems with earlier studies of Slavic alternations like active~passive, active~middle, adversity personal~adversity impersonal, etc. is that each alternation is typically analyzed in isolation from the other members of the diathetic paradigm. For example, as we saw above, it was not understood in the earlier literature that the adversity impersonal alternates with the demiactive rather than the verb's initial (active) diathesis (which resulted in the misanalysis of the instrumental NP's function); this mistake resulted from not taking the whole diathetic paradigm into consideration.

However, alternations themselves inherit some of the problems associated above with voice. Most important, alternations are necessarily binary, and deciding which member of the diathetic paradigm forms an alternation with which is often just as arbitrary as deciding which diatheses are classified as voices and which are not. I conclude on the basis of this discussion of argument structure, voice, alternations, and diathesis, that what is essential to a truly minimalist account of the kinds of morphosyntactic phenomena discussed in this paper is: (i) a lexicon containing both predicates and paradigmatic affixes with their argument structures encoded as diatheses; (ii) general principles that constrain the combination of these lexical stems and affixes into words, words into phrases, and phrases into larger phrases and sentences.

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