Conditions on the Formation of Middles in Russian*

Charles Jones and James S. Levine

Abstract: This paper presents a VP account of the adverbial modification required, in some way, by the middle construction in Russian and the related construction in English: *Kartoška počistilas' legko* 'The potato peeled easily.' The account develops a syntax and semantics for the adverbial middle (Type I: Ackema and Schoorlemmer 2006) that is free of various requirements often supposed for it, notably an "implicit agent" and a generic interpretation. The main condition on adverbial middle formation is access to an embedded state predicate of the object in the logical structure of the head.

1. Introduction

Russian and English show a similar pattern of acceptability with respect to transitive and intransitive uses of certain verbs. The verb *razbit'* 'break' in (1) allows an intransitive, with its understood direct object in subject position. The verb *narezat'* 'cut' in (2) allows a similar intransitive only with some extra-verbal assistance, as in (2c), with the adverbial *legko* 'easily'. The verb *ignorirovat'* 'ignore' in (3) disallows such an intransitive in any case. The Russian intransitives feature a verbal morpheme *-sja/s'*, identical to the verbal reflexive morpheme, while the English intransitives are free of any special morphology.

(1) a. Mal'čik razbil stakan.

   'The boy broke_{PERF} the glass.'

   b. Stakan razbilsja.

   'The glass broke.'

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(1) c. Stakan razbilsja legko.

        'The glass broke easily.'

(2) a. Kuxarka narezala kapustu.

        'The cook cut$_{PERF}$ the cabbage.'

     b. *Kapusta narezalas'.

        'The cabbage cut.'

     c. Kapusta narezalas' legko.

        'The cabbage cut easily.'

(3) a. Ivan ignoriroval ee.

        'Ivan ignored$_{PERF}$ her.'

     b. *Ona ignorirovalas'.

        'She ignored.'

     c. *Ona ignorirovalas' legko.

        'She ignored easily.'

Terminology abounds for the types of verbs in (1–3) and their constructions. For convenience we adopt well-known terms proposed in Keyser and Roeper 1984, following Burzio 1981: verbs like *razbit'* 'break', which directly intransitivize, are *ergative* and verbs like *narezat'* 'cut', which stand in need of some aid, are *middle*.

The term "middle" has come to be associated with a constellation of properties, realized in different languages by different means. Ackema and Schoorlemmer (2006: (1), (18)) (henceforth: A&S) offer a useful list of candidate properties for middle constructions in general:

(4) a The external argument of the non-middle counterpart of the middle verb cannot be expressed as a regular DP argument in the middle.

     b. If the non-middle counterpart of the middle verb has a direct internal-argument role, the subject of the middle sentence carries this role.

     c. The middle verb is stative, non-episodic. The middle sentence is a generic statement.

(4)   d.   In a middle, the logical subject argument of the underlying
            verb is semantically present.

The surface syntactic structures of examples (1–3) illustrate property
(4b). Properties (4a, c, d), on the other hand, have no direct syntactic
expression.

   In view of our current understanding of middle constructions, the
parallelism of judgments between the Russian examples and the Eng-
lish glosses is somewhat unexpected. A&S propose a partition of lan-
guages that have middles into two general types. Type I languages,
e.g., English and Dutch, feature middles that are in need of extra, often
adverbial, elements, and we will often refer to them as *adverbial mid-
dles*. On the other hand, Type II languages, e.g., French and Greek,
characteristically employ the reflexive verbal morpheme in their mid-
dles, the syntax of which is (arguably) indistinguishable from that of
their passives or reflexives. Within this typology, Russian, with its re-
flexive-related *-sja* morpheme, would be expected to pattern with Type
II languages. Yet example (2) indicates that its middle is of the Type I,
English, sort. It will be one of the aims of this paper to demonstrate, by
drawing attention to continuing parallelism of behavior, that Russian
and English middles are of essentially the same construction. This
identity of construction invites an analysis for the Type I middle that is
independent of the passive-reflexive mechanisms of the Type II mid-
dle. Otherwise, the distinctly Type I properties of the Russian middle
would have no source. The primary subject of this paper, then, is the
Type I middle, its formation and properties. Specifically, its syntactic
formation (4b) will be related to its characteristic adverbial element,
and the properties which follow from this formation will motivate a
reevaluation of the (not overtly syntactic) middle properties presented
in (4a, c, d).

   A large literature on Type I middles, much of it concerning the
English middle, has reinforced the assumption of properties (4a, c, d).
Some of these assumptions are challenged by properties of the Russian
middle. For example, the characterization of the middle as a "generic
statement" in (4c) is challenged by the perfective aspect of the Russian
middle in (2c), which suggests a temporally located reading rather
than a generic reading. If the Russian middle and the English middle
are similar constructions, then this aspect of the Russian middle affects

what we might expect of the English middle, at least in terms of genericity.

The assumption of genericity is often related to the assumption in (4d) of the semantic presence of the "logical subject argument." In a situation like that depicted in (2c), for example, if the cabbage cut easily, then it would cut easily for anyone, in general. Along with genericity, assumption (4d) will come in for its share of scrutiny and reassessment.

The paper is organized as follows. In section 2 we discuss Russian *-sja* intransitive constructions, with specific attention to property (4d), the semantic presence of the logical subject. Here, the assumption of the logical subject can be seen to follow from a coherent pragmatic account of the interpretation of the middle. Hence, its wide acceptance and durability is not accidental. We note, however, well-known problems that (4d) poses with respect to middles and take these problems as motivation for an alternative analysis of the middle. In section 3 we review a syntactic and semantic framework for such an analysis. Section 4 is devoted to an analysis of the adverbial middle, one in which the logical subject plays no part. In presenting such an analysis, we are supposing that any intuitions about the presence of the logical subject, however real and robust, may not arise from some covert grammatical structure of the middle (as they may, for example, from the inner structure of the passive), but instead may find their source elsewhere, in, say, pragmatic, real-world knowledge of events denoted by middle verbs. In section 5 we discuss the alleged middle properties of genericity (4c) and logical subject (4d) in light of the proposed analysis. Section 6 concludes with remarks on Russian as a Type I middle language.

2. Derived Intransitive

We begin with a brief review of some of the properties of the Russian derived intransitive and then outline an informal, descriptive account of its thematic properties, in each case taking into account how the properties of the logical subject bear on the possibility of intransitivization.

2.1. Russian Intransitives in *-sja*

Ergative intransitives are derived from both perfective (5a) and imperfective (5b) verb forms. The attendant morpheme is *-sja/s'*.

(5) a. Dver' zakrylas'.

   'The door closed$_{PERF}$.'

   b. Dveri zakryvajutsja.

   'The doors are closing$_{IMPF}$. / The doors are being closed$_{IMPF}$.'

The imperfective in *-sja* gives rise to a systematic intransitive/passive ambiguity. This intransitive/passive ambiguity rests on the fate of the subject argument of the initial transitive verb. In passives an NP corresponding to the initial subject argument may appear as an adjunct in the Instrumental case, as in the passive reading of the imperfective intransitive (6b).

(6) a. Konduktor zakryvaet dveri.

   'The conductor is closing the doors.'

   b. Dveri zakryvajutsja konduktorom.

   'The doors are being closed by the conductor.'

On the other hand, the perfective passive in Russian is fully syntactic, involving participle and auxiliary, so the intransitive in (5a) cannot be passive.[1] This can be demonstrated by its inability to take

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[1] Perfective passives in *-sja* do occur, but their status is controversial. Babby 1975 noted that a small number of perfective verbs that take experiencer subjects, e.g., *počuvstvovat'* 'feel' in (i) and *zabyt'* 'forget' in (ii) can form passives in *-sja*, but he considered them exceptional.

   i. Èffekt ètogo lekarstva počuvstvuetsja vami srazu.
       effect this medicine will-be-felt you$_{INST}$ immediately

   'The effect of this medicine will be felt by you immediately.'

   ii. Èto sobytie ne zabudetsja nami.
        this event not forget us$_{INST}$

   'This event will not be forgotten by us.'

Recently, perfective passives in *-sja* have become a topic of considerable debate. Discussions center on the grammaticality and acceptability of constructions with

the Instrumental phrase, as in (7a), in contrast to the passive, which can, as in (7b).

(7) a. Dver' zakrylas' (*konduktorom).

   'The door closed (*by the conductor).'

   b. Dver' byla zakryta konduktorom.

   'The door was closed by the conductor.'

That the ergative in (7a) disallows the initial subject in an adjunct phrase can be taken to indicate a more fundamental elimination of the initial subject than in the passive (7b). The ergative 'The doors are closing' reading in (5b) shows a similar contrast with the passive 'The doors are being closed' reading in (6b) with respect to the possible realization of the initial subject as Instrumental adjunct.

2.2. Initial Subject

The apparent elimination of the initial subject in the non-passive intransitive construction is one of its signature properties. Many accounts of the intransitive make the nature and fate of the initial subject a central element. Here we outline a not atypical description of the properties of the intransitive in terms of the initial subject. What follows here is not a theory so much as it is a picture of the derived intransitive, and its properties, as seen from the initial subject.

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various types of perfective verbs in *-sja*, such as *Pis'mo pročitalos'* 'The letter was read', *Postel' zastelilas'* 'The bed was made', *Doroga zaasfal'tiruetsja* 'The road will be paved' (Nikitina 2006). Some linguists admit the possibility of passives formed from perfective verbs in *-sja* but view them as marginal (Percov 2003), while others see them as "occasional" and situate them outside the norms of standard literary Russian (Padučeva 2001, Apresjan 2002). One recent corpus study by Kolomackij (2007) demonstrates that perfective passives in *-sja*, normative or otherwise, are prevalent occurrences in forums on Russian Internet sites, as well as in edited journalistic, scientific, and literary texts. An overview of the issues involved, including differing interpretations of perfectives in *-sja* (e.g., whether they are true passives, "pseudo-passives", or decausatives), can be found in Gradinarova 2008.

2.2.1. Continuum of Agentivity

Verbs that can derive intransitives have two arguments when used transitively, one external to VP and one internal (Williams 1981). Broadly speaking, the internal argument (object) denotes a participant in the action of the verb that undergoes a change of state. The semantic/thematic role it plays is along the lines of patient. The external (subject) argument, which denotes the cause of the change, is most often construed as an agent, but can also bear a different semantic role, such as instrument or natural force as in (8).

(8) a. Mal'čik otkryl dver'.

         'The boy opened the door.'

     b. Ètot ključ otkryl dver'.

         'This key opened the door.'

     c. Veter otkryl dver'.

         'The wind opened the door.'

Insofar as the transitive in (8c) presents the action without reference to the participation of an agent, it must be possible to conceptualize the caused outcome of the action as occurring without the direct participation of a volitional agent. This kind of non-agentive conceptualization is often proposed as a condition on intransitive formation.

Agentivity in the part played by the initial subject in the relations denoted by verbs in the intransitive construction can be seen to be of various "strengths."

2.2.1.1. Possible Non-Agent

Certain events described by intransitives have non-agentive causes. These often involve phenomena of nature, which preclude the possibility of an agent as the cause of the event. The following are examples:

(9) a. Veter usililsja.

         'The wind strengthened.'

     b. Frukty isportilis'.

         'The fruit spoiled.'

(9)   c. Temperatura povysilas'.

          'The temperature rose.'

     d. Dožd' prekratilsja.

          'The rain stopped.'

    Russian intransitives that describe events caused by a natural force or some circumstance freely allow adjunction of prepositional phrases or clausal adjuncts denoting the particular cause.

(10) a. Mašina oprokinulas' ot vzryva.

          'The car overturned from the explosion.'

     b. Flag razvevalsja na vetru.

          'The flag fluttered in the wind.'

     c. Zerkalo razbilos' pri perevozke.

          'The mirror broke in the move.'

     d. Kryl'ja mel'nicy zavertelis', kogda podnjalsja veter.

          'The wings of the windmill turned as the wind picked up.'

2.2.1.2. Agent Dissociated from Action

More often, caused events may be caused by an agent, but the outcome can be conceptualized as occurring without the participation of an agent. Even if an agent is present in the context, the intransitive makes no mention of the agent, and instead presents the caused event as occurring by itself, as in (11a–b). The agent cannot be expressed in an Instrumental NP adjunct (11c).

(11) a. Ja vošel v komnatu i dver' zakrylas' za mnoj.

          'I walked into the room and the door closed behind me.'

     b. Mal'čik uronil vazu. Vaza razbilas'.

          'The boy dropped the vase. The vase broke.'

     c. Vaza razbilas' (*mal'čikom).

          'The vase broke (*by the boy).'

2.2.1.3. Agent-Initiated Actions

A recent study on transitivity and voice by Gavrilova (2005) suggests that some verbs denote actions in which an agent initiates a process in which the agent does not directly participate. For example, in (12) the cook initiates the process of cooking the potatoes by creating the necessary and sufficient conditions (placing the potatoes in a pot of water on the stove at a sufficiently high temperature) to effect the desired change of state in the potatoes (they get cooked). In a situation of this type, the role of the subject is that of an "agent-initiator." The agent's role is limited to creating the conditions for a process to occur, but it is the process itself, not the agent, which brings about the denoted change of state. As shown in (12–14), the transitive verbs (a) allow perfectly good intransitives (b).

(12) a. Povar svaril kartošku.

         'The cook cooked (by boiling) the potatoes.'

     b. Kartoška svarilas'.

         'The potatoes cooked.'

(13) a. Pračka vysušila bel'e.

         'The laundress dried the wash.'

     b. Bel'e vysušilos'.

         'The wash dried.'

(14) a. Kuxarka zapekla ovošči.

         'The cook baked the vegetables.'

     b. Ovošči zapeklis'.

         'The vegetables baked.'

2.2.1.4. Agent Executes Action

In contrast to the "agent-initiated" actions in (12–14), Gavrilova argues that the actions in (15–17) are both initiated and carried out by an agent. She calls the performer of such actions the "agent-executor."

According to Gavrilova, situations like (15–17), in which the agent participates directly, fail to form intransitive correlates in *-sja.*

(15) a. Pračka pogladila bel'e.

          'The laundress ironed the linens.'

      b. *Bel'e pogladilos'.

          'The linens ironed.'

(16) a. Povar počistil kartošku.

          'The cook peeled the potatoes.'

      b. *Kartoška počistilas'.

          'The potatoes peeled.'

(17) a. Kuxarka narezala kapustu.

          'The cook cut the cabbage.'

      b. *Kapusta narezalas'.

          'The cabbage cut.'

Here we see an apparent correlation between the degree of agentivity in the role played by the subject argument and the possibility of forming an intransitive. We might summarize it thus:

(18) *Executive Agent Prohibition*

      When a verb imposes executive agentivity on its subject argument, that verb does not allow a derived intransitive.

Some explanatory sense could be made of the prohibition in (18) along these lines. The situations described in (15–17) do not seem to allow expression as intransitives because the semantics of their events are in conflict with the function of the intransitive. As noted above, the function of the intransitive is to dissociate any real-world agent from the action, i.e., to present the action as though it occurred by itself (Babby 1993). However, the situations described in (15–17) are difficult to conceptualize without reference to an agent. In these situations the agent directly participates in the action that affects the patient. For example, in (17) the participant denoted by the subject herself cuts the

cabbage. Though the subject uses a knife or a peeler to achieve the desired outcome, processes of this nature "in all stages of their realization" (Gavrilova 2005: 133) depend on the will of the agent and require the agent's direct participation.

Recall that the intransitive constructions considered so far have been of the direct ergative sort in (1b). We turn directly below to a complicating factor for the Executive Agent Prohibition, which immediately raises the problem presented by the middle construction, e.g., in (1c) and (2c). However, for the moment we can see from the foregoing discussion how an account of intransitives deriving from the properties of the initial subject might proceed.

2.2.2. Modification and Middle

As is well known, in an appropriate context and with some adverbial modification, the intransitive use of verbs like those in (15–17) seems acceptable. This is the signature property of the Type I middle construction.

(19) Ja kupila novyj utjug i včera pogladila rubaški v pervyj raz. Rubaški otlično pogladilis'.

'I bought a new iron and yesterday I ironed shirts for the first time. The shirts ironed beautifully.'

(20) Ja počistil kartošku v kartofelečistke. Kartoška očen' xorošo počistilas'.

'I peeled the potatoes in a (electric) potato peeler. The potatoes peeled very well.'

(21) My kupili novuju stiral'nuju mašinu. Bel'e postiralos' očen' xorošo, očen' čisto.

'We bought a new washing machine. The laundry washed really well, very clean.'

It would be natural at this point to suppose that these adverbials must have something to do with the properties of the missing initial subject. It is not difficult to find in the literature on middles the invocation of an "implicit agent" accompanying middles like those in (19–

21). For an early example, consider the following statement in Keyser and Roeper 1984 (383):

(22) Fiengo (1980) and others have observed that middles seem to have an "implicit agent," whereas ergatives do not. Thus, *the hedge trims easily* clearly presupposes a trimmer. On the other hand, *the boat sinks* does not require an agent, although the event it describes cannot occur without a cause.

An explanation for the power that adverbials have to induce middles might be offered along the following lines. The adverbial implies, or even requires, an agent, which, pragmatically, we know must be present in these situations. Without this modification, the middle, which presents the action as if there were no agent, runs up against our real-world knowledge that an agent must be involved in these situations. Introducing the adverb, then, which brings the "implicit agent" into play somehow, perhaps by identifying or licensing it, brings the semantics of these sentences in sync with pragmatics.

Such an appeal to an agent-oriented function of the adverbials for middles, while not unreasonable, runs into the following kind of difficulty. The adverbials in (23) both appear to modify, in some way, the *trimmer* subject argument, presumably modifying its agentive thematic content.

(23) a. Ivan podrezal kust tščatel'no.

          'John trimmed the hedge carefully.'

      b. Ivan podrezal kust legko (bez truda).

          'John trimmed the hedge easily (without difficulty).'

Of the two adverbials, only *easily* enables the middle construction.

(24) a. *Kust podrezalsja tščatel'no.

          'The hedge trimmed carefully.'

      b. Kust podrezalsja legko.

          'The hedge trimmed easily.'

If clearly presupposing a trimmer were the requisite semantic or pragmatic element that allows the middle, then it is not clear why *tščatel'no* 'carefully', which clearly modifies agentive activity, does not thereby license the middle. A further well-known example of the unavailability of the logical subject in the middle is its inability to control purpose clauses (25).[2]

(25) *Kusty podrezalis' (legko), čtoby osvobodit' dorogu proxodjaščimsja.

'The hedges trimmed$_{PERF}$ (easily) in order [PRO to make way for passersby].'

While we might find the absence of a logical subject unremarkable in ergatives, which allow non-agents as external arguments, its invisibility in the middle is a mystery, insofar as an agentive subject was invoked for an appropriate interpretation.[3] We take the opportunity here, then, to outline in the following two sections an account of the adverbial middle construction whose syntax provides no place for the "implicit argument" and whose semantic interpretation correspondingly involves no appeal to it. Instead, fulfilling the requirements of (4b), the semantics will focus on the sole overt argument of the middle, the "direct internal argument," and the syntax will provide for its location in subject position.

3. Predication and Properties

Taken at face value, the middle construction in (26) is a predicate structure. A *cut easily* VP is predicated of *the cabbage*. We take the rela-

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[2] Levine and Jones 1996 presents several kinds of examples of felicitous purpose (*čtoby*) clauses associated with derived intransitive (mostly ergative) predicates, which indicate that, under certain contextual or lexically compositional circumstances, such clauses may be licensed even in the absence of an agent argument. Whatever the exact nature of the licensing requirements of *čtoby* clauses, their general infelicity with middle predicates can hardly be taken as evidence of the presence of an implicit agent argument.

[3] Intuitions about the presence of the implicit argument can be quite weak. As Dowty (2000) notes of a remark by Greg Carlson: "Greg Carlson has pointed out to me that *This car drives well* does not entail *Someone drives this car*, much less does it entail that everyone drives this car well."
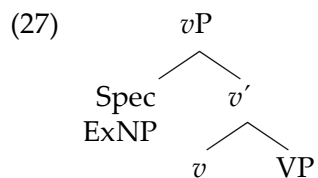
tive unacceptability of (26b) to indicate that the bare *cut* VP fails to qualify as a legitimate predicate.

(26) a. Kapusta [_{VP} narezalas' legko].

'The cabbage [_{VP} cut easily].'

b. *Kapusta [_{VP} narezalas'].

'The cabbage [_{VP} cut].'

From this point of view, the adverbial middle (26a) has a kind of improvisational quality. *Cut* alone cannot function as a predicate, but a characteristically optional adverbial element returns a workable predicate. To set up an account of how this happens, we begin by outlining some details of syntactic and semantic predication, including predicational conditions on adverbial adjunction. We then turn in section 4 to how an adverbial middle improvises a predicate that works.

3.1. Syntactic Predication

On many accounts, syntactic and semantic predication is mediated by a functional head. Thus, within the general outlines of current minimalist syntactic theory (Chomsky 1995, 2000, 2001), the standard assumption about VP predication is that the NP that serves as the subject (or external argument) to a VP is merged as a Specifier of the light verb *v*, [Spec, *v*P], as in (27).

(27)

$$
\begin{array}{c}
v\text{P} \\
\diagup \diagdown \\
\text{Spec} \qquad v' \\
\text{ExNP} \quad \diagup \diagdown \\
\qquad v \qquad \text{VP}
\end{array}
$$

Bowers (1993) argues that all instances of syntactic predication are mediated by a functional head Pr (mnemonic for Predication), and thus the VP in (27) should be generalized to predicate phrases of any category: V, N, P, and A.

Marantz (1984) argues that the external argument cannot be a lexical property of the lexical head that projects the predicate phrase, and Kratzer (1996) works this into a syntactic and semantic account in

which the external argument is introduced as an argument of a VoiceP, again in the configuration in (27).

In Chierchia's (1985, 1989/2004) property theory, the semantic value of a predicate is a primitive property, π. As a semantic primitive, π joins the familiar semantic primitives of type e, entities, and type p, propositions as an individual element (ur-element) in the domain of discourse. In VP syntax, for example, V combines with its subcategorized elements toward composing a phrase of type π. V by itself can project no syntactic structure to which an external argument can merge. Externally to the phrase, a predicate operator $^\cup$ "up" associated with a functional head syntactically combines with the VP: π to return a propositional function <e,p>. Again, as in (27) the e argument that saturates the propositional function is introduced into the syntax in the position that corresponds to the Spec of the functional head. Since much of the present account of the middle construction will be in terms of syntactic and semantic properties, we will regularly note the correspondences between Chierchia's property theory and the standard logical notation.

Abstracting away from many particulars, we draw attention to two general properties of the predication operator that these accounts share, stated in (28) in property-theoretical terms.

(28) A predication operator Π

  a. selects for some element recognizable as a property, π, and

  b. provides the syntax (corresponding to Spec) for an external argument for that predicate: $\pi \rightarrow$ <e,p>

We can think of (28b) in purely structural terms, following Hale and Keyser 2002:

(29) The Fundamental Relations of Argument Structure

                  H&K 2002: 12, (23)

  a. Head-complement: If X is the *complement* of a head H, then X is the unique sister of H (X and H c-command one another).

  b. Specifier-head: If X is the *specifier* of a head H, and if P_1 is the first projection of H (i.e., H', necessarily nonvacuous), then X is the unique sister of P_1.

Hale and Keyser identify a construction that arises as a logical consequence of these properties, with "a type of head that requires a specifier but excludes a complement. This type can be generated only by composition. The head that has this property must itself appear as the complement of another head, *Head**, as in [(30), below], in which Head can be seen as endowing Head* with the ability to project a specifier" (H&K 2002: 13).[4]

(30)   Head*

      Spec   Head*

          Head*   Comp
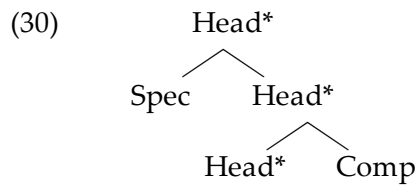
In this view, the Spec is purely configurational, a non-trivial non-sister to a predicative head. We exploit this structural characteristic in our account of the composition of middles.

3.2. Semantic Composition

Without an external argument to project, the logical representation (LR) of a transitive verb like *cut* has a single individual argument, as in (31a). Assuming an event semantics, *cut* and its object will compose a property of an event (31b).[5]

(31) a. $\lambda x[\text{cut}(x)]$

      b. $\lambda x\lambda e[\text{cut}(x)(e)]$

To illustrate the syntactic and semantic components at work, (32) presents the syntax ((32b), noting the syntactic property types of
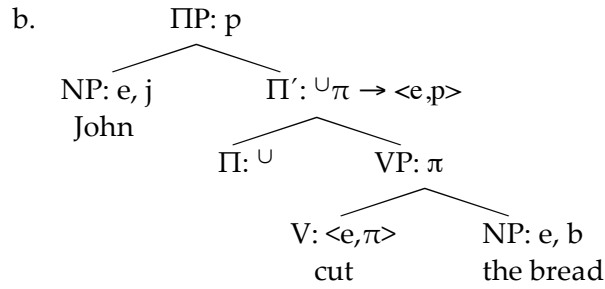
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[4] Hale and Keyser provide for the possibility that the Head in need of a Spec may be phrasal explicitly in their footnote 7: "The head designated *Head* in [(30)] may represent a simple head, without further projection, or it may represent a full phrase, since this is a complement and thus occupies an argument position within the larger structure headed by *Head**."

[5] We take the logical representations to be expressions of a typed λ-calculus, where the variables *x,y* range over entities of type *e*, *s* over states and *e* over events, both of situation type *s*.

Chierchia 1989/2004) and semantic interpretation ((32c), following Kratzer 1996, which is more explicitly worked out in terms of the standard λ-calculus) of an ordinary transitive sentence (32a). We comment on the interpretive steps (32c) in (32d).

(32) a. John cut the bread.

b.

$$
\begin{array}{c}
\Pi P\text{: }p
\end{array}
$$

NP: e, j
John

Π': $^\cup\pi \rightarrow$ <e,p>

Π: $^\cup$

VP: π

V: <e,π>
cut

NP: e, b
the bread

c. Interpretation

1. [$_V$ cut] $\lambda y\lambda e[cut(x)(e)]$

2. [$_{VP}$ cut [$_{NP}$ the bread]]
$\lambda y\lambda e[cut(x)(e)](b) = \lambda e[cut(b)(e)]$

3. Π $\lambda y\lambda e[agent(y)(e)]$

4. [$_{\Pi'}$ Π [$_{VP}$ cut [$_{NP}$ the bread]]]
$EI(\lambda y\lambda e[agent(y)(e)], \lambda e[cut(b)(e)]) \rightarrow$
$\lambda y\lambda e[agent(y)(e) \,\&\, cut(b)(e)]$

5. [$_{\Pi P}$ John [$_{\Pi'}$ Π [$_{VP}$ cut [$_{NP}$ the bread]]]]
$\lambda y\lambda e[agent(y)(e) \,\&\, cut(b)(e)](j) =$
$\lambda e[agent(j)(e) \,\&\, cut(b)(e)]$

d. Comments

1. $\lambda y\lambda e[cut(x)(e)] = (31b)$.

2. *the bread*$_{NP}$ saturates the *x* variable. *cut*(*b*) is now a property of an event: 'the bread gets cut in some event *e*.'

3. The predication operator, here Π, will compose with VP and return a propositional function. In Kratzer 1996, this amounts to introducing an additional predicate, identifying a thematic role, with a variable place for the

external argument— $\lambda y\lambda e[agent(y)(e)]$ —'something y is an agent in e.'

(32) d. 4. The LR of the external argument and that of the VP are identified with the same event, via a conjunction operation, Event Identification:

Event Identification (EI)   K: 122, (23)

f	g	→	h
$\langle e,\langle s,t\rangle\rangle$	$\langle s,t\rangle$		$\langle e,\langle s,t\rangle\rangle$

$$LR = (\lambda y\lambda e[f(x)(e)\ \&\ g(e)])$$

5. *John*$_{\text{NP}}$ saturates the y variable, yielding a proposition: 'John is the agent in some event e in which the bread gets cut.'

3.3. Lexical Representation of Change of State

In many treatments of change-of-state verbs, the LR (or, in some frameworks, the Lexical Conceptual Structure, cf. Jackendoff 1990, Levin and Rappaport-Hovav 1995, among many others) is taken to be of a causal relation between events, one event causing a resultant state (event) of the change. The resultant state predicate is a property of the object, for which we adopt SMALL CAP notation. Hence, while lexical *cut* takes its object as a complement, the property CUT, abstracted from *cut*, takes the object of *cut* as a subject. Call this kind of property the "object property".

Following Kratzer 2000, the full LR for *cut* would be as in (33a). Since we will be concentrating on the fate of the individual variable x, we abbreviate the LR of *cut* to that of the sole predicate of x, as in (33b).

(33) a. $\lambda x\lambda s\lambda e\ [cut(e)\ \&\ event(e)\ \&\ CUT(x)(s)\ \&\ CAUSE(s)(e)]$

    b. $\lambda x\lambda s[CUT(x)(s)]$

With these tools in hand, we turn to the construction of the adverbial middle.

4. Building the Middle

Here we immediately outline in section 4.1 the skeleton of an extremely simple syntactic account of how the adverbial middle is composed and then turn in section 4.2 to discuss its interpretation.

4.1. Skeleton

Consider again the contrasting acceptabilities of the examples in (26), repeated here in (34). In particular, consider the second member of the set, in which the bare *cut* VP somehow fails as a predicate.

(34)   a.   Kapusta [$_{VP}$ narezalas' legko].

'The cabbage [$_{VP}$ cut easily].'

b.   *Kapusta [$_{VP}$ narezalas'].

'The cabbage [$_{VP}$ cut].'

In light of the above semantic considerations, the failure can be attributed to the failure of *cut* to form a property. Suppose, somehow, that *cut* does not assign its single argument as a complement. A strict view of syntactic combination would require this transitive property to be satisfied in all cases. A looser notion, which we entertain here, is that failure to satisfy the requirement usually results in a failed derivation, a crash. If this were true in all cases, then the requirement would need no stipulation or enforcement.[6] Let us suppose that there is no such stipulative requirement and continue to consider *cut* without an object.

With the object argument unassigned, the VP is one argument short of a property. Assuming now that the predication operator Π selects for a VP property π, it cannot recognize the bare *cut* VP, which projects the type <e,π> of its transitive head.

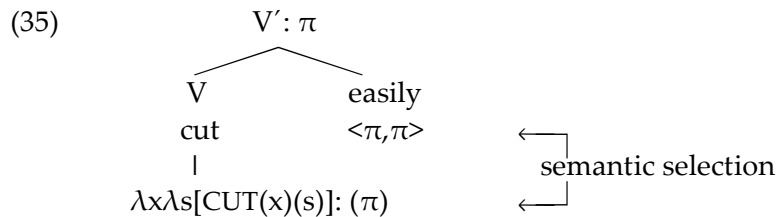[6] See Chomsky 2000: 132 where the general condition (53) is observed to be optimal for derivations.

(53)   Properties of the probe/selector α must be satisfied before new elements of the lexical subarray are accessed to drive further operations.

As Chomsky notes, "If the properties of α are not satisfied, the derivation crashes." Hence, failure to meet Condition (53) is (typically) its own punishment.

Consider now the adverbial in (34a). Suppose that, as a nonsub-categorized adjunct, *easily* is sensitive only to the semantic type of the constituent to which it adjoins: it must be a property. On most accounts, e.g., Jackendoff 1972, Roberts 1989, Chierchia 1989/2004, Bowers 1993, 2002, *easily* belongs to the class of adverbials whose syntactic distribution indicates that it adjoins at V-level. Chierchia identifies them as property adverbs of type $<\pi,\pi>$.
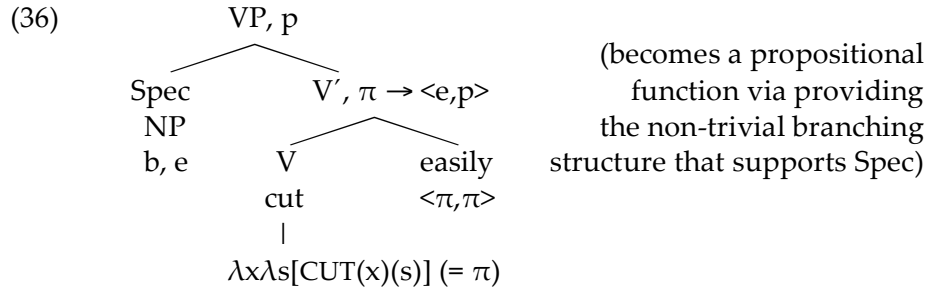
From our assumption about the LR of *cut* in (33), lexical *cut* has within its logical representation a property, the object property CUT. Suppose *easily* can see this property and adjoin directly to *cut*, as in (35) (where we attribute no special status to V′ other than that of some projection of V). The semantic function of *easily* is the usual semantic function of property adverbs, to take a property as input and return a (modified) property: $<\pi,\pi>$.

(35)   V′: π

                   V   easily
                   cut $<\pi,\pi>$
                    | ←⎤
         $\lambda x \lambda s[CUT(x)(s)]$: (π) semantic selection
                                          ←⎦

We now have a configuration in which an operator has adjoined to a predicate expression, of type π, syntactically fulfilling the first conjunct of (28), repeated below.

(28)   A predication operator Π

   a.   selects for some element recognizable as a property, π, and

   b.   provides the syntax (corresponding to Spec) for an external argument for that predicate: $\pi \rightarrow <e,p>$

The suggestion here is that, having fulfilled the first conjunct of (28), the structure is ripe to fulfill the second conjunct, as in (36).

(36)   VP, p

   Spec   V′, $\pi \rightarrow$ <e,p>   (becomes a propositional
   NP   function via providing
   b, e   V   easily the non-trivial branching
       cut   <π,π> structure that supports Spec)
       |
    $\lambda x \lambda s[CUT(x)(s)]$ (= π)

With respect to (28), Spec position is simply a non-trivial non-sister to a head. The branching structure provided by *easily* sets up such a position. In short, we propose (36) as the syntax of the middle VP.

The middle VP in (36) comes equipped with a Spec position at which a subject NP can be merged, bypassing the machinery of the usual predicational Π operator.[7] In this analysis, the adverbial fulfilling both conjuncts of (28) *is* the predication operator. Hence, we loosen the strict notion "No predication without Π" to "No predication without what Π does."

Kratzer (2000: 11), primarily concerned with participles formed from lexical structures that feature embedded states, characterizes these participles as "derived by operators that retrieve target state properties from the constituents they operate on." In the present account, the adverbial middle is derived by a syntactic operator in just this way: "through a state argument that is present at the relevant level of representation."

As for the externality of the single argument of the middle, we note that, by hypothesis, the internal single argument of CUT was never assigned prior to the adverbial adjunction. With Merge of an NP like *the bread* in Spec, the logical representation has its individual variable *x* saturated, as in (36).

In having the single argument of the middle as an external argument, the present account resembles the analysis in Ackema and Schoorlemmer 1994, which also has a single, external argument for the middle. In that account, the characteristic external argument is suppressed at a pre-lexical level, and the internal argument, next in line on

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[7] Stroik (2006), working under a different set of assumptions about the syntax of the middle construction, presents arguments that it (nevertheless) occurs without the functional *v*P projection.

a hierarchy of arguments, is promoted as the external argument in the argument structure of the head. In both cases there is no VP-internal assignment of the single θ-role; it is assigned externally. Such constructions are expected to exhibit unergative behavior rather than the unaccusative behavior expected in accounts which involve movement of the internal argument to external position. Ackema and Schoorlemmer (1995) demonstrate the unergative behavior of adverbial middles in Dutch.

The Spec position at which the *bread* NP merges is of course internal to the VP. There is a sense, however, that it is external to the V which contains the embedded abstract CUT property. In this sense, the Spec position of the middle VP serves as the position for an external argument of an embedded property of V. The VP itself is a structure of syntactic predication.[8]

4.2. Interpretation

As a property operator, the adverbial could be expected to contribute some property to the property it modifies. Let us suppose that *easily* contributes some property related to *easy*: EASY. Following Basilico 2004: 118, we suppose that adding a property to a property results in a generalized version of Event Identification (32d.4): Argument Identification, in which unsaturated arguments of conjoined predicates in general can be identified, as in (37).

(37)   *Argument Identification (AI)*
$$f \qquad\qquad g \qquad\qquad \rightarrow \qquad h$$
$$\langle e,\langle s,t\rangle\rangle \qquad \langle e,\langle s,t\rangle\rangle \qquad\qquad \langle e,\langle s,t\rangle\rangle$$
$$\mathrm{LR} = \lambda x \lambda e[f(x)(e)] \; \lambda x'\lambda e'[g(x')(e')] \qquad \lambda x \lambda e[f(x)(e) \,\&\, g(x)(e)])$$

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[8] Bowers (2002) adds an additional TrP projection to the structure of transitive VP. The non-assignment of the internal argument to VP-internal object position considered in the present account would presumably vacate this TrP projection of content. It is not clear whether this vacation would be benign or whether TrP should be bypassed under these circumstances.

TrP figures in Bowers' own analysis of the middle construction, with the head Tr holding an abstract morpheme μ, resembling passive *-en* in having no φ-features but requiring no auxiliary. Morpheme μ is thus a dedicated middle-voice marker, that derives an unaccusative-type middle.

AI returns a conjunction of properties sharing arguments. The interpretation of *the bread cut easily*, then, will be as in (38).

(38)   The bread cut easily: $\lambda e[CUT(b)(e)$ & $EASY(b)(e)]$

In (38), EASY is predicated of *the bread*. In what sense can we take something like bread to be "easy"? Consider how the *easily* works in the non-middle example (39).

(39)   Ètot provod provodit èlektričestvo legko.

'This wire conducts electricity easily.'

Here, *easily* indicates that the wire has a low resistance to electricity. That is, *easily* denotes a property of the wire. *Easy*, along with its adverbial relative *easily*, in general describes situations in which little work is done. If we take *easily* as generally denoting a property like "with little resistance," then the interpretation of the conjunction in (38) yields a satisfactory reading: 'In some event *e,* the bread was cut and it offered little resistance.' Taken as a whole, the VP offers a reading along the lines of 'The bread had a property: the property of cutting easily.'

Adverbial modifiers in the middle are typically characterized as manner adverbials, describing "how the action of the predicate can be carried out with respect to the entity specified by the subject" (Fagan 1992: 41). This characterization must immediately be qualified, however, to exclude any agent-orientation, hence, e.g., *The hedge trimmed carefully.* The qualifying characteristic of the adverbials, then, must be possible object orientation.[9] Oriented as they must be toward the object, they must be less manner-of-action adverbials than they are adverbial predicates of the object, in the sense suggested for *easily* above. A (non-exhaustive) list of such adverbials (from Fiengo 1980: (89)) shows adverbial variations on either a general, vague, predicate

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[9] It is of course not impossible for an adverbial capable of setting up the middle to have agent orientation in some other context. E.g., in *John cut the bread easily*, *easily* naturally describes something about John's manner, and we might expect that capacity to follow from *easily*'s ability to adjoin (at least) to full (i.e., with assignment of object argument) VP. *Easily* qualifies as a middle adverbial because it can characterize a property of an object (i.e., having low resistance) as well.

"good": *well, nicely, poorly, better than others,* or properties of the object in terms of how they receive action of the verb: *unevenly, neatly, easily, with difficulty.* Such (perhaps latent) object-orientation of these adverbials no doubt contributes to their "low," VP-level distribution (section 4.1)—VP is where the object is.

Interpreting the adverbial as a predicate of the object extends straightforwardly to cases where the adverbial is a PP, as in (40).

 (40)   a.   Èto mjaso režetsja kak maslo.

            'This meat cuts like butter.'

       b.   Ogurec čistitsja kak jabloko.

            'A cucumber peels like an apple.'

Here, in (40a) for example, there is no other likely interpretation for *like butter* than one in which it is predicated of the *meat.* As is well known, attributive modification is routinely relativized to some context (Parsons 1990: 43). In (40a), the verbal context sets *meat* up as *something being cut*, and as such it is *like butter* according to the PP.

Fagan (1992: 43, 57) considers middles like those in (40) to be "nonstandard" middles, insofar as "they do not express any notions of modality," nor do they "generalize over events." If these criteria are defining properties of the middle, as in (4c) above, then "non-standard" is the appropriate judgment. An alternative view of the matter would be to take the object predication of these adjuncts to be the general property of the middle. Any modal or generic connotations connected with the middle would then be taken to arise from the usual independent factors, such as non-definite subject or present tense, as in the non-middle *Dogs bark,* versus *Your dog barked.* We return to this matter in section 5.

4.3. Related Structures

The adverbial middle construction is in principle available to any V with a property predicate in its lexical representation. Here we discuss this requirement with respect to two kinds of V.

4.3.1. Non-Change of State

The embedded state predicate is characteristic of verbs that denote a change of state in the participant denoted by the object NP. A transitive verb like *ignore* entails no such change of state in that participant. Let us suppose that this kind of verb has no object property in its LR. Rather, it is only a function from individual arguments to properties, as in interpretation (41, line 1) below. Standard notation obscures the difference between these property functions and propositional functions, both being type <e,<s,t>>. In property theory, this difference is straightforwardly characterized, as <e,π> for property functions and <e,p> for propositional functions.

(41) a. $\quad$ V′: π

$$
\begin{array}{cc}
\text{V} & \text{NP} \\
\text{ignore} & \text{Bill} \\
\text{<e,}\pi\text{>} & \text{e}
\end{array}
$$

  b. Interpretation

  1. [$_V$ ignore] $\quad\quad$ $\lambda x\lambda e[\text{ignore}(x)(e)]$

  2. [$_{V′}$ ignore [$_{NP}$ Bill]]

  $\quad\quad\quad\quad\quad\quad\quad$ $\lambda x\lambda e[\text{ignore}(x)(e)](b) = \lambda e[\text{ignore}(b)(e)]$

In a structure like (41) there is no possibility of a <π,π> adjunct selecting V, since there is no property in its LR. The only property these verbs can project is a syntactic VP property requiring composition with the object. Hence the unacceptability of such verbs in the middle, as in (1c), repeated here as (42):

(42) *Ona ignorirovalas' legko.

  'She ignored easily.'

4.3.2. Ergative

We have seen that certain verbs, the ergatives, can appear in the intransitive without the aid of adverbial adjunction, as in (1), repeated here as (43):

(43) a. Mal'čik razbil stakan.

'The boy broke the glass.'

b. Stakan razbilsja.

'The glass broke.'

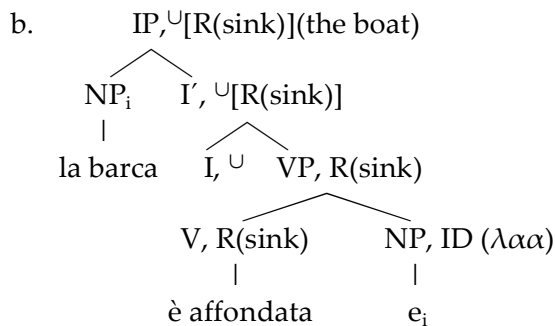c. Stakan razbilsja legko.

'The glass broke easily.'

For present purposes, Chierchia's (1989/2004) theory offers an attractive account of this alternation. Adopting it here allows us to contrast the present account of the middle with a well-defined account of a superficially similar structure.

In Chierchia's theory, the intransitive ergative is formed by reflexivizing the transitive V.

(44) Reflexive (R)   (adapted from C: 29, (13))

i. Logical type of R: $\langle e,\pi\rangle \to \pi$

ii. Content: $^{\cup}[R(break)](x) \leftrightarrow {}^{\cup}[break(x)](x)$

Because R works on the transitive V, the resultant single argument of R(V) is identified with the internal argument. Hence, the syntax has the familiar structure of NP movement to relate the external subject position with the internal object position, as in (45b), Chierchia's example for the Italian in (45a).

(45) a. La barca è affondata.

'The boat sank'

b.   IP,$^{\cup}$[R(sink)](the boat)

NP$_i$ I′, $^{\cup}$[R(sink)]
|
la barca   I, $^{\cup}$ VP, R(sink)

V, R(sink)   NP, ID ($\lambda\alpha\alpha$)
| |
è affondata   e$_i$

As Ackema and Schoorlemmer (1995) demonstrate for Dutch, a Type I language, ergatives show unaccusative properties in their aspectual auxiliaries, selecting *zijn* 'be' over *hebben* 'have', while adverbial middles, even with ergative verbs, show unergative auxiliary selection. The reflexivization account of the ergative, with its NP-movement-like dependency between subject and object position, sets up this unaccusative behavior.

The overall picture we get of the relations between the various kinds of transitive verbs with respect to their intransitivizing behaviors is in (46).

(46)   **transitive V**

   simple transitive   **change-of-state**   **middle**
       ignore   embedded object   **construction**
  no embedded object   property in LR   any V with
    property in LR   an embedded
                middle   **ergative** object property
               cut   *break*   can form
    abstract embedded   lexicalized for a middle
     object property: reflexivization construction
  no projection as predicate of object   via adverbial
without adverbial adjunction property   adjunction
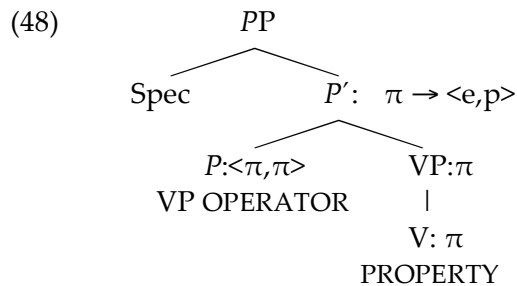
4.4. Outside VP

Given the account so far, it is to be expected that without adverbial modification a VP projection of a middle verb that has not assigned its object θ-role would crash the derivation. Here we discuss a couple of well-known cases where the middle V apparently escapes this consequence.

4.4.1. Periphrastic VP Operators

Middle VPs without adverbials gain some acceptability in the presence of a periphrastic VP element, such as negation in (47a), future imperfective in (47b), or modal in (47c).

(47) a. Ètot xleb ne rezalsja.

          'That bread didn't cut.'

      b. Ètot xleb budet rezat'sja.

          'That bread will cut.'

      c. Èto mjaso dolžno rezat'sja.

          'This meat should cut.'

Suppose that these VP elements are non-subcategorized, semantic, $<\pi,\pi>$ operators P. On the assumption that the embedded object property of the middle V remains visible at its phrasal projection, these P-operators may be expected to provide a Spec for its subject.[10]

(48)   *P*P

              Spec   *P′*: $\pi \rightarrow <e,p>$

                        P:$<\pi,\pi>$ VP:π
                        VP OPERATOR |
                                      V: π
                                    PROPERTY

The assumption that the embedded object property of V is visible and accessible to operators at the phrasal level is essentially that of Kratzer (2000), whose stativizing operators operate at either lexical or phrasal levels, contingent only on the existence of an embedded object property. Hence, operator-derived phrasal middles are to be expected.

Evidence that the modal and negation in (47) are operating on the embedded property of the middle can be found in the kinds of readings they impose on those properties. Brennan (1993) syntactically distinguishes VP-level readings of modals, which are subject-oriented, from S-level readings, which are event-oriented, treating the proposition as a whole. The readings of the modal and negation in (49) are subject-oriented, or "dispositional" in the sense discussed in Lekakou 2004. This subject-orientation can be brought out by different adverbial

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[10] Note that the particular semantic content of the VP operator—negation, modal, etc.—is irrelevant. All that is necessary for the middle structure is the branching VP syntax it provides.

modifications, where, as first noted by Van Oosten (1977), subject-oriented adjuncts are acceptable with the middle and event-oriented adjuncts are not.

(49) a. *Adverbial middle*
Èta odežda stiraetsja bez truda, potomu čto…
'These clothes wash with no trouble because…
  i.   …ona prisposoblena dlja mašinnoj stirki.
         …they're machine washable.'
  ii.   *…u menja mnogo vremeni.
         *…I have lots of time.'

b. *Modal*
Èta odežda dolžno stirat'sja, potomu čto…
'These clothes should wash because…
  i.   …ona prisposoblena dlja mašinnoj stirki.
         …they're machine washable.'
  ii.   *…u menja mnogo vremeni.
         *…I have lots of time.'

c. *Negation*
Odežda ne postiralas', potomu čto…
'The clothes didn't wash (clean) because…
  i.   …ona ne byla zaranee obrabotana pjatnorastvoritelem.
         …they weren't pretreated.'
  ii.   *…u menja ne bylo vremeni.
         *…I didn't have time.'

d. *Event*
Netrudno stirat' odeždu, potomu čto …
'It's no trouble to wash the clothes because…
  i.   …ona prisposoblena dlja mašinnoj stirki.
         …they're machine-washable.'
  ii.   …u menja mnogo vremeni.
         …I have lots of time.'

As (49d) indicates, when the object assumes its characteristic object position, it is interpreted simply as part of the *wash* event, and the VP shows no subject-orientation effects.

4.4.2. Lexicalization

In certain contexts, where the middle verb is emphasized, as in (50a), or contrasted, as in (50b), the middle reading is available without any operator assistance.

(50) a. Ètot xleb REŽETSJA.

 'This bread CUTS.'

 b. Èto   mjaso sejčas režetsja.
 this   meat   now   cuts

 'This meat cuts now.'

In a context, for example, where some frozen meat has been impossible to cut, an utterance of (50b) would pass naturally once the meat has thawed. We might take the emphasis and focus of these uses to be signals of a kind of spontaneous neologism: the embedded object property is opportunistically lexicalized as the complete verbal property, and the syntax of the construction is simply that of any intransitive unergative. This is a sort of null hypothesis about these cases: they are what they look like. A more elaborate analysis would have to demonstrate some correspondingly significant degree of further insight into their properties.

4.5. Russian *-sja* and the Reflexive Morpheme

If there is anything like a "rule" of middle formation involved in the present account, it might be informally stated as (51).

(51) *Middle formation*

 Use the embedded object property of V as the propositional predicate.

Insofar as the English middle is devoid of special morphological marking, we might take this "rule" to involve a spontaneous, pre-

grammatical choice about the elements in the initial lexical array, a choice of V and only enough NP material for one argument.

The Russian middle, on the other hand, is accompanied by morphological marking. As in many languages, this marker is identical to the reflexive marker. Now, Russian *-sja* famously resists encapsulating as a single-function morpheme, figuring in a variety of constructions with their characteristic readings. A quick way to deal with the *-sja* of the Russian middle would be to associate it with the English "rule" in (51), and chalk that association up to just one more function of a multifunctional morpheme.

A more expansive treatment of the middle use of the reflexive morpheme in general and of *-sja* in particular would show how its association with at least the major syntactic phenomena of passivization in (52a) and reflexivization in (52b) is not accidental but rather follows from some general property.

(52) a. Dveri zakryvajutsja.   (= (5b))

        'The doors are closing/The doors are being closed.'

    b. Mal'čik privjazalsja k mačte.   (= Williams 1983: (8))
       boy$_{NOM}$ tied$_{SJA}$ to mast$_{DAT}$

       'The boy tied himself to the mast.'

While a full treatment is beyond the scope of this paper, we briefly and somewhat informally discuss here how aspects of the present treatment of middles bear on these constructions.

Unlike the middle, which in the present analysis bypasses the VP θ-assignment of the object argument, passive and reflexive VPs assign those θ-roles within VP. The problem, then, is to establish how they relate to the NP that surfaces as the external argument of the clause. The typical supposition is that they are anaphorically bound by the external argument, the passive by identification (say, through movement), the reflexive by reflexive binding. Here, the relation between the two kinds of constructions is in the anaphoric nature of the required binding on their objects.

It bears noting that in both constructions the status of the object θ-role must await the external argument for its anaphoric binding. In terms we have adopted, it is as though these constructions invoke an embedded object property and await the predication operator to sup-

ply it with an argument. Chierchia's (1989/2004) theory involves just this kind of invocation, with both passive and reflexive operating as $\langle e,\pi\rangle \to \pi$ functions which ensure that the resulting proposition is true just in case the external argument functions as the object. That is, both passive P(V) and reflexive R(V) are object properties.

(53) a. Passive (P)

      i.   Logical type of P: $\langle e,\pi\rangle \to \pi$
      ii.   Content: $^{\cup}[P(\text{see})](x) \leftrightarrow \exists y \, ^{\cup}[\text{see}(x)](y)$

   b. Reflexive (R)

      i.   Logical type of R: $\langle e,\pi\rangle \to \pi$
      ii.   Content: $^{\cup}[R(\text{wash})](x) \leftrightarrow \, ^{\cup}[\text{wash}(x)](x)$

Note that, while passive P and reflexive R differ in their treatments of the object, spelled out in the (ii) examples of Contents, they both get the object as subject of the derived property. What relates them, then, is their general object property $\langle e,\pi\rangle \to \pi$ functionality.[11] Seen in this light, the informal "middle rule" in (51) is simply an injunction to proceed to an object property, $\langle e,\pi\rangle \to \pi$, aided by an adjunct operator, and bypassing the assignment of the object θ-role. Hence the relation of the Russian adverbial middle to the major productive uses of *-sja* is not as far-fetched as it first appeared. It too is an object property operation, its difference from the unaccusative types residing in the directness of its application.

5. Middle Interpretation

Of Ackema and Schoorlemmer's (2002) four criteria for middles in (4), repeated here (with (4c) expanded to its full text) in (49), the first two, (54a–b), are syntactic. The remaining two, (54c–d), are semantic.
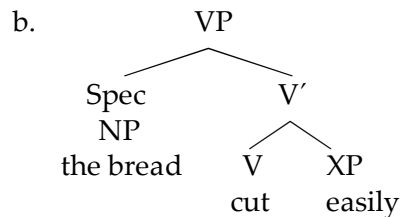
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[11] Basilico 2004 presents a phase-based theory in which the reflexive morpheme existentially binds the object argument in antipassive, reflexive, and decausative (here, ergative) constructions, thus unifying their underlying treatments. The fate of the existential binding, however, differs from construction to construction, remaining unchanged, for example, in the antipassive and being undone, (via Dekker's 1993 Existential Disclosure) in the reflexive and decausative. Here too, then, the generalization holds only at a certain level of operation.

(54) a. The external argument of the non-middle counterpart of the middle verb cannot be expressed as a regular DP argument in the middle.

  b. If the non-middle counterpart of the middle verb has a direct internal argument role, the subject of the middle sentence carries this role.

  c. The middle verb is stative, non-episodic. The middle sentence is a generic statement. It expresses that the argument mentioned in (b) has a particular individual-level property, or that events denoted by the verb or the verb-argument combination have a particular property in general.

  d. In a middle, the logical subject argument of the underlying verb is semantically present.

The proposed VP structure for the middle in (55b) meets the syntactic specifications of (54a–b) and sets up a straightforward semantic representation along the lines of (55c).

(55) a. The bread cut easily.

  b.

```
                VP
              /    \
          Spec      V′
           NP      /  \
       the bread  V    XP
                 cut  easily
```

  c. $\lambda e[\text{CUT}(b)(e) \, \& \, \text{EASY}(b)(e)]$

Here we argue that (55c) is the necessary and sufficient semantics for the middle. Consequently, properties (54c–d) are extrinsic to the middle.

5.1. Implicit External Argument

The assumption that the external argument of a predicate is introduced by a predicational operator effectively removes that argument from the lexical properties of the head of the predicate. Let us suppose,

however, that (54d) is operative and that the characteristic external argument must be present, at least in the semantics. As Condaravdi (1989) notes, there is nothing to prevent the incorporation of an extra argument into the semantic structure. Suppose the middle semantics is always accompanied by an extra argument place, assuming the thematic relation θ of the characteristic external argument to the event:

(56) $\lambda x \lambda e[\text{CUT}(b)(e) \ \& \ \text{EASY}(b)(e) \ \& \ \theta(x)(e)]$

A common way to fix the referent of this extra argument is to give it an *arb* interpretation (Fellbaum 1985, Fagan 1988, Zribi-Hertz 1993, and others). We are now in a position to ask what interpretive business the θx argument has to accomplish. If we take the basic predication structure of the middle seriously, in which *cut easily* is predicated of *the bread*, then any kind of participation in the event assumed by θx must be external to that predication. Suppose θ = agent. Then we might interpret (56) along the lines of "*x* is an agent of an event in which the bread cuts easily." On this reading, the agency is extrinsic to the event of *the bread cut easily*—an agent cutting bread cannot cause it to have the property of cutting easily. Suppose, alternatively, following Hoekstra and Roberts 1993, that θ = experiencer, as the participant who experiences the ease of cutting the bread. Here, the participant experiences a property of the bread, the evaluation of which is wholly contained in the proposed semantic interpretation (38)/(55c): it cuts easily (i.e., with little resistance). Hence, any experiencer of a "middle event" is in the "outside" position of evaluating the experience in terms of a property given by the basic semantics (55c).

The overall superfluity of an external argument for the middle is more sharply indicated with PP middles like (57a).

(57)   a.   Èto mjaso režetsja kak maslo.

        'This meat cuts like butter.'

    b.   Èto mjaso kak maslo.

        'This meat is like butter.'

    c. $\lambda e[\text{cut}(m)(e) \ \& \ \text{like butter}(m)(e)]$

Any presumed agent or experiencer present in (57a) can only be in the position of evaluating, from the outside, some proposition like (57b), which is simply one conjunct of the proposed semantics (57c).

The essential externality of the extra argument is maintained when such an argument is syntactically present, as in (58).

 (58)   The bread cut easily for John.

Here, whether John is agent or experiencer, he remains outside the event of *the bread cut easily*.

Stroik (1992, 2006) argues that the *for*-PP in (58) is an indication of the syntactic projection of the characteristic external argument. We return to this argument in the next section, where we discuss genericity. Here we note an independent, adjunct source for the *for*-PP. In (59) the null hypothesis would be that *for you* is simply a predicative PP, with *for* independently bearing thematic connotations very vaguely and roughly along "possessive" or "goal" lines.

 (59)   This (gift) is for you.

In cases like these, the parallelism between English and Russian breaks down to a certain extent. In the Russian correlate to (58), (60a), the extra argument follows the preposition *u* in the Genitive Case, while in the correlate to (59), the predicate NP is either in the Dative Case, as in (60b), or in the Genitive Case after the preposition *djla*, as in (60c).

 (60)   a.   Ètot xleb   režetsja u   Ivana   legko.
               this   bread   cuts   by   John$_{GEN}$ easily

               'This bread cuts easily for John.'

         b.   Èto   vam.
               this   you$_{DAT}$

               'This is for you.'

         c.   Èto   dlja   vas.
               this   for   you$_{GEN}$

               'This is for you.'

There is nothing obvious about this non-parallelism of Case, however, that rules out an independent adjunct source for the Genitive *u Ivana*$_{GEN}$ in (60a).[12]

Casting the semantics of the middle as an evaluation of the properties of the object gives a clue as to why the supposition of an implicit agent, introduced in section 2.2.2, went awry when confronted with the inapplicability of agent-oriented adverbs to middles as in *The meat cut carefully.* The V-level distribution of the property adverbials like *easily* (in the sense of "offering little resistance") surely reflects the domain of their modification: they modify what's going on inside VP, what we have been calling the "object property." The proposed semantics for the middle here involve an evaluation of that property.

In this light, Keyser and Roeper's (1984) observation in (22), "Thus, *the hedge trims easily* clearly presupposes a trimmer," while no doubt true of possible intuitions concerning the sentence, is something of an overstatement with respect to its grammar. When *trim* combines with an object NP to form a VP, the syntactic structure of predication supplies a VP-external position for the realization of the trimmer. In the middle, on the other hand, while the agent, trimmer, argument evades detection, the VP offers an apparently successful predicate, of *the hedge*. There is no grammatical mechanism in the present account that predicts, or adjudicates, intuitions about the relative semantic presence of syntactically absent arguments in the middle. What it does offer is a minimal semantic reading of the predicative middle VP in terms of the only syntactically realized argument.

From this point of view the "continuum of agentivity" outlined in section 2.2.1, with its increasingly specific intuitions of agentive participation, could as well, though not as obviously, have been taken as a continuum of specificity regarding the object property of the syntactic subject. In the present account, for the middle, this object property is all there is.

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[12] The extra argument in (60a) raises issues of phrase order as well, insofar as English does not allow the PP between the head V and the adverbial: *This bread cuts* [$_{PP}$ *for John*] *easily*. We acknowledge the non-parallelism here and leave the details for further research on VP syntax.

5.2. Genericity

Let us suppose that property (54c) requires some kind of generic quantification in the semantics of middles. At this point, it bears pointing out that generic quantification for a middle construction is freely available under the present assumptions. Suppose we want to make a general statement of a property of, say, a kind of meat using a middle as in (61a). Let us assume Chierchia's 1995 analysis of individual-level properties as inherent generics. There the contextual restriction on the modal generic operator is simply that the subject argument be present "in" some situation, while its scope is VP. This yields (61b), with a reading paraphrased as in (61c).

(61) a. Takoe mjaso režetsja legko.

'This (kind of) meat cuts easily.'

b. **Gen** e [IN(m)(e)][CUT(m)(e) & EASY(m)(e)]

c. "Generally, when this (kind of) meat is around, it (has the property:) cuts easily."

We see here in somewhat different form the same persistence and irreducibility of the basic semantics proposed for the middle in (54c). That is, we have generalized over situations in which we find the meat, but in each situation the relevant evaluation is that *it cuts easily.*

The same persistence of the central predication is present in modal analyses of the middle like that of Lekakou 2004. There, the interpretation of a middle involves a covert modal related to the dynamic, root reading of *can.* This modality is intended to capture the dispositional nature of the middle predication, as noted above in section 4.4. As with any modal operator, however, the bottom line in the interpretation is the property attributed to the subject in any given world or situation.[13] This property, and only this property, is what the basic semantics in (54c) supplies.

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[13] In Lekakou's 2004 representation of the truth conditions of the generic operator below, the literal bottom line, $<w', d> \in [[VP]]^g$, is simply an evaluation of the VP with respect to the subject.

$[[\text{Gen}(\char94 VP)(d)]]^{w,g,h,x,j} = 1$ iff

$\forall w' \in W$ if

The proposed middle semantics, then, does not necessitate a generic reading. This is exactly the semantics we need for Russian, which, as shown in examples throughout this paper, routinely allows middles in the perfective aspect. These examples are by nature temporally located. Lekakou (2002) suggests if a language has an aspect, typically the imperfective, dedicated to expressions of genericity, then it will be of the adverbial-free Type II and will express middles in that aspect. Now, Russian is a language with such an imperfective aspect, dedicated to generic expressions, yet it has Type I middles and those middles are free of the requirement of (event) genericity.

In parallel with the Russian perfective middles, we have been giving English glosses, typically in past tense, which on its natural reading is not generic. That is, if grammatical, the gloss we have been giving to *Ètot xleb narezalsja legko* (with *narézalsja*$_{PERF}$), 'This bread cut easily', expresses a proposition about some (non-generic) time in the past. We have been supposing that it is grammatical.

One of the cornerstone arguments for the genericity of middles dates from Keyser and Roeper 1984, based on the quartet of sentences in their (12), here (62), including their "?" judgments.

(62)   a.   ?Yesterday, the mayor bribed easily, according to the newspaper.

       b.   ?At yesterday's house party, the kitchen wall painted easily.

       c.   ?Grandpa went out to kill a chicken for dinner, but the chicken he selected didn't kill easily.

       d.   ?If it hadn't been for the wet weather, my kitchen floor would have waxed easily.

Note that the sentences are degraded by elements that do not relate to the dispositional properties of the middles, *yesterday*, *according to the newspaper*, *house party* (with respect to *paint*), etc. This degradation is expected, given the subject-oriented nature of the predicate in the middle as seen above in section 4.4. When the adjunct elements have a plausible relation to the dispositional properties of the subject, *the*

    (i)   w′ is accessible from w for d given h_x

   (ii)   w′ is maximally close to the ideal established by j(w), then

  (iii)   <w′, d> ∈ [[VP]]^g

chicken he selected, the wet weather (with respect to *wax*), the sentences improve. To the extent that these sentences mix these dispositional effects, their usefulness in the general case for the genericity of middles is weakened. The general argument here is that there is no necessary generic component to the semantics of the Type I middle.

So far we have been dealing with generalization over events. It is sometimes proposed that the argument place of the external *arb*-marked argument in (56) can serve as the variable for the generic operator, giving rise to paraphrases like (63b), adapted from Stroik 2006.

(63)   a.   This bread cuts easily.

     b.   "It is a generic property of events of cutting this bread by any arbitrary person that they are events easily performed by that person."

We have already seen that neither the performance nor the experience of the participant denoted by the extra argument contributes to the bread's having the property of cutting easily. We might amend the paraphrase along the lines of (64), though now, as above, the addition of a generically quantified place for the external argument here adds nothing to the central predication.

(64)   "It is a generic property of events of cutting this bread by any arbitrary person that they are events in which the bread cuts easily."

Non-generic readings for the middle indicate that the property denoted by the middle can only *tend* to an individual-level reading, but cannot *be* an individual-property as required in (54c). As is well known, many predicates can, given a context, assume individual-level or stage level readings. As Kratzer (1995: 126) notes with respect to the property of having brown hair, "If I dyed my hair every other day, my property of having brown hair would be stage-level. Usually we think of having brown hair as an individual-level property, though, since we don't think of persons dying their hair capriciously." That middles have property readings follows from the object property from which they are derived, syntactically and semantically. That they are necessarily generic or individual-level does not follow, nor should it.

6. Russian and English

Russian's reflexive *-sja* morphology makes it a good candidate for the Type II middle, of the French and Greek sort. As Ackema and Schoor-lemmer (2006) comment, the syntax of these middles is indistinguish-able from the passive-reflexive in these languages. Hence, the middle reading in these languages may be a purely semantic matter. Russian, however, resorts to a Type I adverbial middle strategy of the English and Dutch sort. Thus the presence or absence of reflexive morphology is separable from choice in middle formation. We have argued above that genericity and the semantic presence of the characteristic external argument are also separable from the adverbial Type I middle. The surviving condition on the formation of the adverbial middle is access to an embedded object property in the logical representation of the head V.

We have been supposing that verbs that have this abstract-object property are change-of-state verbs, the abstract property being a state property of the result of the change. "Change-of-state" is a fair ap-proximation of the general nature of the verbs that allow middle.[14] Ackema and Schoorlemmer 2006: 159, reviewing a variety of candidate generalizations concerning the class of verbs that allow the middle, observe that "none of these generalizations is without its problems, however, and it seems fair to say that the jury is still out on the issue." We will not attempt to settle the issue here. However, we note that the embedded-object property in the logical representation of "change-of-state" verbs is motivated independently of the middle construction. That this type of V fits so closely to the class of middle verbs should be no accident, and we would expect that the correct generalization, whatever it turns out to be, would include that object property as a component.

In conclusion, Russian, despite the reflexive morphology afforded by *-sja*, has the properties of the Type I adverbial English middle. The overall syntax and semantics of the adverbial middle proposed here

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[14] Well-known problems for the "change-of-state" characterization include *read* and *translate*, which form middles—*This book reads/translates easily*—but do not suggest any straightforward sense of "change-of-state;" and *murder* and *assassinate,* which at least implicate a change of state in the object argument but form poor middles: **The duke murdered/assassinated easily.*

fulfill the necessary condition that all its overt operative elements are accounted for. The syntax is driven by Merge and general constructional properties of predication. The semantics employs the elementary mechanisms of argument satisfaction and conjunction. That this is sufficient for the essential semantic properties of the adverbial middle is our argument.

References

Ackema, Peter and Maaike Schoorlemmer. (1994) "The middle construction and the syntax-semantics interface". *Lingua* 93: 59–90.

———. (1995) "Middles and nonmovement". *Linguistic Inquiry* 26: 173–97.

———. (2006) "Middles". Martin Everaert, Henk van Riemsdijk, Rob Goedemans, and Bart Hallebrandse, eds. *The Blackwell companion to syntax*. Vol 3. Oxford: Blackwell, 131–203.

Apresjan, Jurij. D. (2002) "Vzaimodejstvie leksiki i grammatiki: leksikografičeskij aspekt". *Russkij jazyk v naučnom osveščenii*. No. 1. Moscow: Jazyki slavjanskix kul'tur, 10–29.

Babby, Leonard H. (1975) "A transformational analysis of transitive *-sja* verbs in Russian". *Lingua* 35(3–4): 297–332.

———. (1993) "A theta-theoretic analysis of *-en-* suffixation in Russian". *Journal of Slavic linguistics* 1: 3–43.

Basilico, David. (2004) "Antipassive, anticausative, and reflexive: Phases and reflexive morphology". Leah Bateman and Cherion Ussery eds. *Proceedings of the thirty-fifth annual meeting of the North East Linguistics Society*. Amherst, MA: GLSA Publications, 115–26.

Brennan, Virginia. (1993) *Root and epistemic modal auxiliary verbs*. PhD dissertation, University of Massachusetts, Amherst.

Bowers, John. (1993) "The syntax of predication". *Linguistic inquiry* 24(4): 591–656.

———. (2002) "Transitivity". *Linguistic inquiry* 33: 183–224.

Burzio, Luigi. (1981) *Intransitive verbs and Italian auxiliaries*. PhD dissertation, Massachusetts Institute of Technology.

Chierchia, Gennaro. (1985) "Formal semantics and the grammar of predication". *Linguistic inquiry* 16(3): 417–43.

———. (1995) "Individual-level predicates as inherent generics". Gregory N. Carlson and Francis Jeffry Pelletier, eds. *The generic book*. Chicago: University of Chicago Press, 176–223.

———. (1989/2004) "A semantics for unaccusatives and its syntactic consequences". Artemis Alexiandou, Elena Anagnostopoulou, and Martin Everaert, eds. *The unaccusativity puzzle*. Oxford: Oxford University Press, 22–59.

Chomsky, Noam. (1995) *The Minimalist program*. Cambridge MA: MIT Press.

———. (2000) "Minimalist inquiries: The framework". Roger Martin, David Michaels, and Juan Uriagereka, eds. *Step by step: Essays on Minimalism in honor of Howard Lasnik*. Cambridge, MA: MIT Press, 89–155.

———. (2001) "Derivation by phase". Michael J. Kenstowicz, ed. *Ken Hale: A life in language*. Cambridge, MA: MIT Press, 1–52.

Dekker, Paul. (1993) "Existential disclosure". *Linguistics and philosophy* 16: 561–87.

Dowty, David. (2000) "The semantic asymmetry of 'argument alternations' (and why it matters)". Geart van der Meer and Alice G. B. ter Meulen, eds. *Making sense: From lexeme to discourse.* Groningen: Center for Language and Cognition Groningen, 171–85. [*Groninger Arbeiten zur germanistischen Linguistik,* 44.] [Available at: http://www.ling.ohio-state.edu/~dowty.]

Fagan, Sarah. (1988) "The English middle". *Linguistic inquiry* 17: 501–57.

———. (1992). *The syntax and semantics of middle constructions*. Cambridge: Cambridge University Press.

Fellbaum, Christiane. (1985) "Adverbs in agentless actives and passives". *Proceedings from the annual meeting of the Chicago Linguistic Society* 21: 21–48.

Fiengo, Robert. (1980) *Surface structure: The interface of autonomous components*. Cambridge, MA: Harvard University Press.

Gavrilova, V. (2005) "Vzaimodejstvie kategorij perexodnosti i zaloga v russkom jazyke (Proizvodjaščie i iniciirujuščie perexodnye glagoly i ix vozvratnye korreljaty)". Ju. D. Apresjan and L. L. Iomdin, eds. *East–West Encounter: Second International Conference on Meaning and Text Theory*. Moscow: Slavic Culture Languages Publishing House, 132–45.

Gradinarova, A. (2008) "Russkij vozvratnyj perfektivnyj passiv: K probleme suščestvovanija". *Acta linguistica* 2(1): 71–78.

Hale, Kenneth L. and Samuel J. Keyser. (1993) "On argument structure and the lexical expression of syntactic relations". Kenneth L. Hale and Samuel J. Keyser, eds. *The view from Building 20*. Cambridge, MA: MIT Press, 53–109

———. (2002) *Prolegomenon to a theory of argument structure*. Cambridge, MA: MIT Press.

Jackendoff, Ray. (1972) *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.

Jackendoff, Ray. (1990) *Semantic structure*. Cambridge, MA: MIT Press.

Keyser, Samuel J. and Thomas Roeper. (1984) "On the middle and ergative constructions in English". *Linguistic inquiry* 15: 381–416.

Kratzer, Angelika. (1995) "Stage-level and individual-level predicates". Gregory N. Carlson and Francis Jeffry Pelletier, eds. *The generic book*. Chicago: University of Chicago Press, 125–75.

———. (1996) "Severing the external argument from its verb". Johan Rooryck and Laurie Zaring, eds. *Phrase structure and the lexicon*. Dordrecht: Kluwer, 109–37.

———. (2000) "Building statives". Lisa J. Conathan, Jeff Good, Darya Kavitskaya, Alyssa Wulf, and Alan C. L. Yu, eds. *Proceedings of the twenty-sixth annual meeting of the Berkeley Linguistics Society*. Berkeley: Berkeley Linguistics Society, 385–99.

Kolomackij, D. I. (2007) "K voprosu o raspredelenii russkix passivnyx form po vidu". *Acta linguistika* 1(1): 14–32.

Lekakou, Marika. (2002) "Middle semantics and its realization in English and Greek". *UCL Working Papers in Linguistics* 14: 399–416.

———. (2004) "Middles as disposition ascriptions". Cécile Meier and Matthias Weisgerber, eds. *Sinn and Bedeutung 8: Proceedings of the eighth annual meeting of the Gesellschaft für Semantik*. Konstanz: Universität Konstanz, FB Linguistik, 181–96.

Lekakou, Marika. (2006) "A comparative view of the requirement for adverbial modification in middles". Benjamin Lyngfelt and Torgrim Solstad, eds. *Demoting the agent: Passive, middle, and other voice phenomena*. Amsterdam: John Benjamins, 167–96.

Levin, Beth and Malka Rappaport Hovav. (1995) *Unaccusativity: At the syntax-lexical semantics interface*. Cambridge, MA: MIT Press.

Levine, James S. and Charles Jones. (1996) "Agent, purpose, and Russian middles". *Journal of Slavic linguistics* 4: 50–75.

Marantz, Alec. (1984) *The nature of grammatical relations*. Cambridge, MA: MIT Press

Nikitina, E. N. (2006) "Norma i vozvratnye glagoly v forme soveršennogo vida". L. N. Krysin, ed. *Russkij jazyk segodnja: Problemy jazykovoj normy*. Vol. 4. Moscow: Institut russkogo jazyka im. V. V. Vinogradova RAN, 412–22.

Padučeva, Elena V. (2001) "Kauzativnyj glagol i dekauzativ v russkom jazyke". *Russkij jazyk v naučnom osveščenii.* No. 1. Moscow: Jazyki slavjanskix kul'tur, 52–79

Parsons, Terence. (1990) *Events in the semantics of English*. Cambridge, MA: MIT Press.

Percov, N. V. (2003) "Vozvratnye stradatel'nye formy russkogo glagola v svjazi s problemoj suščestvovanija v morfologii". *Voprosy jazykoznanija* 4: 43–71.

Roberts, Ian G. (1989) *The representation of implicit and dethematized subjects*. Dordrecht: Foris.

Stroik, Thomas S. (1992) "Middles and movement". *Linguistic inquiry* 23: 127–37.

———. (1995) "On middle formation: A reply to Zribi-Hertz". *Linguistic inquiry* 26: 165–71.

———. (1999) "Middles and reflexivity". *Linguistic inquiry* 30: 119–31.

———. (2006) "Arguments in middles". Benjamin Lyngfelt and Torgrim Solstad, eds. *Demoting the agent: Passive, middle, and other voice phenomena*. Amsterdam: John Benjamins, 301–26.

Van Oosten, Jeanne. (1977) "Subjects and agenthood in English". Samuel E. Fox, Woodford A. Beach, and Shalamith Philosoph, eds. *Proceedings from the thirteenth regional meeting of the Chicago Lingusitic Society.* Chicago: Chicago Linguistics Society, 459–71.

Williams, Adger. (1993) "The argument structure of *sja*-predicates". *Journal of Slavic linguistics* 1: 167–90.

Williams, Edwin. (1981) "Argument structure and morphology". *Linguistic review* 1: 81–114.

Zribi-Hertz, Anne. (1993) "On Stroik's analysis of English middle constructions". *Linguistic inquiry* 24: 583–89.

English Department 3E4   Received: January 2009
George Mason University   Revised: March 2010
Fairfax VA 22030
cjones@gmu.edu

Department of Modern and Classical Languages, 3E5
George Mason University
Fairfax, VA 22030
jlevin2@gmu.edu