

Middle Object Scrambling

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Abstract: This paper discusses syntactic and semantic aspects of direct object scrambling in Ukrainian. Given the complex nature of scrambling, the investigation is narrowed to only one of its types: the change SVO→SOV, defined as Middle Object Scrambling (MOS). This strategy affords a detailed examination of this phenomenon at a micro-level. MOS is scrutinized with regard to its syntactic aspects (e.g., position of a moved element) and semantic properties (e.g., possible interpretations of a direct object). The semantic features of definiteness, referentiality, and partitivity are particularly emphasized, as previous studies have claimed they play an important role in the process. This research demonstrates that the most relevant feature in Ukrainian MOS is specificity in the sense of partitivity/presuppositionality. The implication of this is that Slavic data provide further support for the universality of interpretational properties of the *v*P edge, in line with Chomsky 2001.

1. Introduction

Many studies have investigated variation in the syntactic position of arguments and sought to identify aspects that contribute to the phenomena unified under the term scrambling. The range of these aspects is wide and includes discourse, prosody, pragmatics, or NP type, depending on the language under examination. In Slavic languages, scrambling has traditionally been associated with Information Structure: new/unknown objects usually remain in post-verbal position, while old/known/given objects may also appear in pre-verbal position, yielding such word orders as SOV, OSV, or OVS (Adamec 1966, Daneš 1974, Firbas 1992, Hajičová 1974, Junghanns and Zybatow 1997, Sgall 1972, Sgall et al 1986, Yokoyama 1986, among many others). However, scrambling is a widespread phenomenon cross-linguistically, and in other languages its semantic/pragmatic properties have been defined in other terms. For instance, in the Germanic tradition, direct object scrambling (or shift) has been associated with the semantic features of specificity or definiteness or, more precisely, with the loss of nonspecific reading (see, e.g., Diesing 1997, Diesing and Jelenek 1993, de

Hoop 1992 and 2003b, Holmberg 1999, among others). Apparent syntactic differences between Slavic and Germanic languages (e.g., with regard to their basic word order, verb movement, articles, etc.) caused the development of distinct approaches to the types of scrambling they exhibit. For instance, assuming that Russian and Ukrainian are not Object-Shift languages, Lavine and Freidin (2002: 283) argue that in these languages “no Spec-*v*P is projected because *v* does not have an EPP requirement.” Extending this line of reasoning further, we might conclude that Slavic scrambling does not comply with the Phase Theory proposed by Chomsky (2001) (see also Legate 2003 on passives as phasal heads). If this is so, Slavic scrambling should be accounted for by other means, and the assumption that *v*P is a phase with interpretative properties of its edge becomes questionable.

However, it has long been noticed that there are some overlapping syntax-semantic characteristics of scrambling cross-linguistically, roughly described in terms of a Scrambling Rule: a scrambled direct object receives a specific interpretation (see Thráinsson 2001 for details). The aim of this research is to verify whether this rule, postulated primarily for Germanic languages, is operative in Slavic. The data under analysis come from Ukrainian, an East Slavic language exhibiting considerable freedom of word order in its colloquial variant (Shevelov 1993). The crucial aspect of Ukrainian grammar relevant to this study is the interpretational consequences of the change from SVO to SOV word order, which are reminiscent of the Germanic facts.

In Ukrainian, the direct object can take different positions in the sentence, and since the base structure of the language is SVO (see discussion in section 3), all other orders of constituents are considered derived. The direct object in a canonical transitive sentence, as in (1), can be interpreted in at least two ways: as some object unknown to the hearer or as an object specified by previous or following discourse.¹

- (1) Taras čytaje **knyžku**.
 Taras reads book_{ACC}
 ‘Taras reads a/some/a certain/the book.’

¹ The abbreviations used in the glosses are: ACC = accusative, ADJ = adjective, IMP = imperative, FEM = feminine, FUT = future, GEN = genitive, PART = particle, PL = plural.

When the direct object occurs before the verb, the sentence has different interpretive possibilities (assuming neutral prosody).² Specifically, the scrambled sentence in (2) could not be uttered by Ukrainian speakers intending to convey that Taras was reading some book the speaker does not know (or does not care) which one, i.e., that what matters is that reading took place, not what was read.

- (2) Taras **knyžku** čytaje.
 Taras book_{ACC} reads
 ‘Taras reads a certain/the book.’

This paper offers a novel view of the change from SVO to SOV order of constituents. Based on the extensive literature on Germanic scrambling, such as some recent studies on Russian and parallel data from Ukrainian and Dutch, I propose that this word order change is a distinct type of scrambling—Middle Object Scrambling (MOS)—which is defined as the movement of a direct object from its base position within the VP to a higher pre-verbal (Middlefield/*v*P-edge) landing site.³ In this article, I examine the semantic properties of scrambled objects in various contexts and show that there are important interpretational similarities between Ukrainian and Dutch scrambling to middlefield. The data indicate that the most relevant feature in Ukrainian object scrambling is specificity in the sense of partitivity/presuppositionality. This provides further support for the universality of the interpretational properties of the *v*P edge, in line with Chomsky 2001, and opens new possibilities for a unified analysis of object scrambling at the syntax-semantics interface. This paper presents research that sets preliminary grounding for such an analysis at a cross-linguistic level.

²Crucially, for I assume here that the structure in (2) has neutral prosodic realization with a sentence-final falling pitch accent. Change in the prosody, addition of context, or other elements (such as intentional verbs, adverbs, negation, or (in)definite pronouns) would make the sentence interpretation more transparent. This is discussed in sections 3 and 4.

³Given that this reordering occurs within clause boundaries, the term Object Shift could be used. However, this term is usually reserved for Scandinavian languages referring to a process that is dependent on the position of the main verb, e.g., which means there is no object shift in constructions with periphrastic tenses or in embedded clauses (Holmberg 1999). It is not evident, however, that there is such a restriction concerning verb raising and object scrambling in other languages, e.g., Slavic.

This paper is structured as follows: Section 2 justifies the choice of the syntactic construction to analyze and defines the main research questions. Section 3 presents an analysis of direct object scrambling in Ukrainian, which includes a brief discussion of syntactic properties of the word order in the language (3.1 and 3.2) and an examination of the semantics of the scrambled NP (3.3). From a general overview of the interpretational correlates of scrambling based on Dutch-Ukrainian parallels and the role of lexical markers in Ukrainian (3.3.1–3.3.2) the discussion proceeds to the particular semantic features often associated with a scrambled direct object: referentiality (3.3.2.1), definiteness (3.3.2.2), and partitivity (3.3.2.3). Section 3.3 closes by presenting a language-specific construction with semantic properties similar to those found in a scrambled SOV structure. Section 4 touches upon a possible theoretical account for the data presented and indicates directions for further research. The last section places this research among recent studies on the issue.

2. Why Scrambling to Middlefield?

The SOV word order is common in various languages, including Slavic, and shows distinctive syntactic and semantic properties. Typologically, the SOV word order is one of the most prevalent. It is a base structure in a great many languages worldwide, e.g., in 69 out of a sample of 171 (Siewierska 1997), and is also known as a common alternative to the base word order (see, e.g., Corver and van Riemsdijk 1994 for an overview). Many scrambling languages do not allow movement to a high position (e.g., to TP-spec or CP-spec), but clause-internal NP or pronominal movement to “just out of” the *v*P is much more frequent, as summarized for Scandinavian languages and German/Dutch in Thráinsson 2001 (158). This holds for both SVO and SOV languages with the major difference that in SOV languages some landmarks of *v*P-edge are needed, i.e., adverbs or negation, to actually detect the object movement.

The syntactic properties of MOS include clause-boundedness of movement and a relatively limited choice of landing sites. Considering object scrambling in Germanic languages, such a position could be defined in general terms as the landing site somewhere within what has been called the *Mittelfeld* or middlefield (see also Sturgeon 2006 on Czech). Although in Slavic languages, non-clause-bounded scrambling

is also possible, the shorter syntactic movement $SVO \rightarrow SOV$ is likely to target positions similar to the Germanic middlefield, which could be marked with additional elements (e.g., adverbs), but does not require them. In more recent studies, which assume that syntactic derivation occurs by phase, the landing site of the object is associated with a single syntactic position, roughly the vP edge, as proposed in Chomsky 2001 for Scandinavian object shift (see also Mykhaylyk and Ko 2008 for Ukrainian). Thus, we can pose more precise questions about the nature of a particular type of syntactic movement involving a limited number of implicated elements and landing sites.

The middlefield area (or vP -edge) has been claimed to have certain interpretational correlates (see Chomsky 2001). In particular, in Germanic languages it has been shown that nonspecific direct objects cannot appear at the vP -edge. However, there is still much controversy regarding (i) the semantics of objects that appear in the scrambled position, (ii) specificity as a triggering feature or side effect of movement, and (iii) the universality of the interpretational properties of the vP -edge.

The semantics of scrambled objects has been variously analyzed and labeled as specific (in the sense of Enç 1991), referential (as in Fodor and Sag 1982), partitive (as in Ko, Ionin, and Wexler 2008), presuppositional (Diesing 1992), or definite (de Hoop 2003b). Specificity has been often used as a cover term in Germanic, as well as in many other languages, e.g., Hindi, Turkish, or Korean (Bhatt 1999, Bhatt and Anagnostopoulou 1996, Dayal 2003, de Hoop 1992, Diesing and Jelenek 1993, Enç 1991, Karimi 2003, Kim 1993, Lee 2004, Van Geenhoven 1998, among others). However, it seems that the definition of specificity has varied from study to study and its meaning is not always straightforward. To avoid any confusion, in this paper I will operate with the terms definiteness as defined in (3a), referentiality as defined in (3b), and partitivity (also-called presuppositionality) as defined in (3c). Note, that both (3b) and (3c) are commonly referred to as specificity.

- (3) a. Definiteness: a DP is definite when the speaker presupposes the existence of a unique individual in the set denoted by an NP and assumes that the hearer shares this presupposition (see Heim 1991 and Ionin 2003).

- (3) b. Referentiality: a DP is referential when a speaker intends to refer to an individual in the set denoted by an NP and considers this individual to possess some noteworthy property (see Fodor and Sag 1982 and Ionin 2003 and 2009).
- c. Partitivity: a DP is partitive when an individual in question is a part of a set introduced in the previous discourse (see Enç 1991, Diesing 1992, and Ko, Ionin, and Wexler 2008).⁴

While it has been shown for many languages that indefinite non-specific objects normally do not scramble, preferred positions of other NPs have not been clearly defined. Regrettably for linguists trying to rule out optional operations from the grammar, the syntactic movement of definite and/or specific objects seems to be optional in various languages (see Thráinsson 2001 for an overview). The direct object does not have to scramble to be interpreted as definite or specific. The same reading is available both in a *v*P-edge position and in situ. This fact has received various accounts. For instance, de Hoop (2003b: 202) explicitly states that scrambling in Dutch is not “interpretation-driven” or “triggered by anything” but that when NPs scramble they must be of a certain type. This claim, however, does not contribute much to our understanding of the motivation for scrambling, as the author simply asserts the freedom of word-order variations without accounting for it. Dyakonova (2009), on the other hand, states that scrambling in Russian *is* triggered “to encode referential givenness”, but later admits that the same reading can be achieved without movement. The role of semantic features in optional scrambling thus remains an intriguing issue that requires further research.

It also remains unsettled whether the *v*P-edge has the same semantic properties cross-linguistically, i.e., whether the same semantic effects can be obtained in various free-word-order languages, particularly in Slavic. The role of definiteness/specificity in word order has been investigated in Russian (Avrutin and Brun 2001, Brun 2005, Dyakonova 2004, Ionin 2003, Mezhevich 2001), Serbian/Croatian (Ilić and Deen 2004), Czech (Biskup 2006), and Ukrainian (Mykhaylyk and Ko

⁴ Enç (1991) analyzes specificity essentially similarly to “D[iscourse]-linking” (proposed in Pesetsky 1987), namely as reference to a previously mentioned set. Diesing, on the other hand, emphasizes identification of specificity with presuppositionality (implying that partitivity is its subtype).

2008), but the results of these studies are rather inconsistent with regard to semantic features and syntactic structures involved. Several recent studies highlight the special status and syntactic-semantic aspects of the SOV word order in Russian. This is one of the most frequently used scrambled construction in the language (Kallestinova 2007, Slioussar 2007), and also the one that exhibits a number of puzzling properties (Dyakonova 2009, Van Gelderen 2003). Specifically, it has been noted that the pre-verbal object is not always associated with known information or contrastive focus. For instance, Dyakonova shows that the direct-object constituent might precede the verb even if its referent is not contrasted with anyone else mentioned in the immediate discourse. Slioussar, based on data from a corpus study by Sirotinina (1965/2003), also notices a weak correlation between the position of an object and its informational load. She suggests that since the interpretational differences between VO and OV sentences are often very elusive, this might be a sign of that colloquial Russian is shifting towards a head-final OV language. Van Gelderen (2003: 189), however, emphasizes the distinct nature of the SOV order and suggests that this might be due to the same process as shift/scrambling in Germanic languages. Along these lines, Dyakonova proposes that only D(iscourse)-linked objects appear in pre-verbal position, admitting, nonetheless, the optionality of this movement.

In this study, I acknowledge the multifaceted nature of optional scrambling and admit that there are considerable differences between Dutch/Germanic and Ukrainian/Russian syntactic systems, but I leave these very important issues aside for the moment. My aim is to explore universal rather than language-specific properties of scrambling and to verify claims proposed earlier against new data. My strategy is to start from a micro-level analysis of one type of syntactic movement in a particular language—Ukrainian.

3. MOS in Ukrainian

3.1. Basic Word Order

Ukrainian allows various orders of constituents in a sentence with some of them more marked than others. Traditional grammars distinguish *prjamyj porjadok slov* (direct word order) and *neprjamyj porjadok slov* (indirect/inverse word order) (Hryshchenko 1997, Šul'žuk 2004,

Vyxovanec' 1993, and many others). Ukrainian syntax has not been investigated extensively in the generative framework. Typically, the basic facts and their analysis are either treated in line with the few Ukrainian grammars available in English or assumed to be similar to Russian, a closely related and much better investigated language (e.g., Pugh and Press 1999, or Shevelov 1993 and 2003) or assumed to be similar to Russian, a closely related and a better investigated language.⁵ According to the available sources, the basic (canonical, standard, unmarked, direct) word order in Ukrainian exhibits patterns, such as in (4).

- (4) a. the subject precedes the verb;
- b. the verb precedes its objects;
- c. the attributive adjective precedes its head noun;
- d. the preposition is placed before the noun phrase, etc.

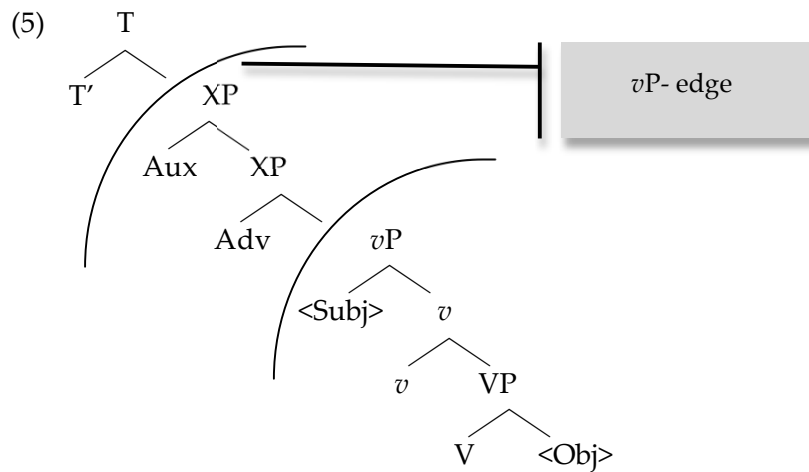
Departures from the basic word order are widely employed in colloquial Ukrainian, so that, as Shevelov (2003: 978) states, "paradoxically as it may sound, the standard word order is omnipresent, but more through departures from it than through straight adherence to it."⁶ That is, all deviations from the word order rules in (4) are semantically/pragmatically/phonologically marked in some way. Following the generative tradition, I assume that Ukrainian, similarly to other Slavic languages, has a basic SVO word order and all other possible variations are derived by movement. Claims of a basic VSO structure for Russian (King 1995) or base-generated scrambling variants in Rus-

⁵ This paper does not include a comparative analysis of Ukrainian and Russian syntactic structures. These languages are typologically close (as, e.g., Dutch and German), but to what extent their syntactic properties overlap is an open question. It is known, however, that the phonology of the languages is considerably distinct, and in lexicon Ukrainian and Russian differ by 38% (cf. 25% for Dutch and German). See Bilaniuk 2005, Bilaniuk and Melnyk 2008, and references within.

⁶ To compare Standard Ukrainian and Colloquial Ukrainian, I analyzed two small text samples (from a child-directed textbook and from an informal conversation with adults). The textbook traditionally used in first grade contained 94 sentences. There were 27 direct objects, but only one of them (a pronoun) appeared in a scrambled position. On the other hand, an interview with 27 adult speakers posted on the internet (135 sentences in total) had 21 structures with direct objects and nine of them were scrambled (<http://life.pravda.com.ua/surprising/4c178648acaa2/>).

sian (Bošković and Takahashi 1998) have been convincingly refuted by Bailyn (1995, 2001, and 2003), and they are not considered viable for Ukrainian either.

The main focus of this investigation is the *vP* phrase, direct object NP, and the middlefield area (also called *vP*-edge). I assume that the *vP*-edge could be an extended domain, just like the TP-domain, that can host *vP*-level adverbs, auxiliaries, or negation, as schematized in (5):



The direct object might be in the Accusative or the Genitive, and the difference between these two case forms is still to be defined. The Accusative case ending can also be preserved in passive constructions, labeled as Passive Accusative. Finally, the nominal phrase in Ukrainian does not include articles, but there are many lexical elements that play the role of determiners and mark the semantics of arguments.⁷ Adverbs, auxiliaries, and determiners are used as important landmarks in the following discussion of the syntactic and semantic properties of MOS, which is the main goal of this paper.

⁷ It should be emphasized that since Ukrainian syntax has never been systematically studied in the generative framework, these assumptions call for further verification. However, even if some of them are modified later, this should not undermine the general account of the properties of scrambling.

3.2. The Syntactic Properties of MOS

As was mentioned in section 2, the syntactic properties of MOS include clause-boundness of movement and a relatively limited choice of landing sites. For instance, in Dutch, which exhibits the structural change from SAdv/NegOV to SOAdv/NegV, the moved object lands between the T' and the *v*P phrase, immediately to the left of an adverb or negation (6).

- (6) dat Marieke **een boek** gisteren ~~een boek~~
 that Marieke a book_{ACC} yesterday a book
 gekocht heeft.
 bought has
 '...that Marieke bought a certain book yesterday.'
 #'...that Marieke bought some book yesterday.' (Schaeffer 2000)⁸

In Ukrainian, the syntactic movement SVO→SOV is likely to target similar positions, which could be marked with additional elements (e.g., adverbs), but do not require them (7).

- (7) Marija **knyžku** (včora) kupyla ~~knyžku~~.
 Maria book_{ACC} yesterday bought
 'Maria bought a certain book yesterday.'
 #'Maria bought a book yesterday.'

Adverbs can be used as landmarks on the *v*P-edge in syntactic tests. Depending on the position of a particular adverb, we can define the *v*P edge boundary and the available landing sites for a scrambled constituent.⁹ Assuming that manner adverbs *oxajno* 'neatly', *šoydko*

⁸ The symbol # is used to mark structures which are pragmatically infelicitous or unacceptable with unmarked prosodic realization. Of course the same structure in other circumstances might be perceived as fully acceptable.

⁹ In Ukrainian, adverbs usually precede the main verb in a typical SAdvVO transitive sentence. Ellipsis tests provide us with the data to clarify adverbial locations in the derivation. Since Ukrainian lacks the auxiliaries *does/doesn't*, which are typically used in ellipsis tests in English, I employ other structures proposed for Russian, Polish, and Czech by McShane (2000). Specifically, these structures have a negation element *net/nel/ní* 'not' — words that arguably function as independent, non-elliptical predicates.

'quickly', *povil'no* 'slowly', and *dovho* 'for a long time' are situated in the *vP* domain in Ukrainian, their positions in scrambled structures such as (8a) indicate that the landing site of the scrambled object is (at least) as high as the edge of *vP*. Sentence (8b), on the other hand, is degraded because the scrambled object landed in a lower position.

- (8) a. Taras (cju) knyžku dovho čytatyme ~~eju knyžku~~.
 Taras this book_{ACC} for-a-long-time read_{FUT}
- b. #Taras dovho (cju) knyžku čytatyme ~~eju knyžku~~.
 Taras for-a-long-time this book_{ACC} read_{FUT}
 'Taras will read the book for a long time.'

Experimental results from Mykhaylyk and Ko 2008 show that a scrambled object can be placed after an adverb, as in (8b), but such structures were infrequent compared to the structure in (8a). SOAdvV was used about 12 times more often than SAdvOV by adult native speakers (35% vs 3%) and about 10 times more often by English-Ukrainian bilingual children (41% vs 4%). Recent studies of word order in Russian also show a clear preference for a specific position for objects relative to adverbs. For instance, Kallestinova (2007: 83) tested the adverb position in the three most common and most felicitous word orders in Russian: SVO, OVS, and SOV. In SOV sentences, the position after the object and right before the verb (SOAdvV) received the highest grammaticality judgment scores by native Russian speakers, while the scores of adverbs in the position between the two argu-

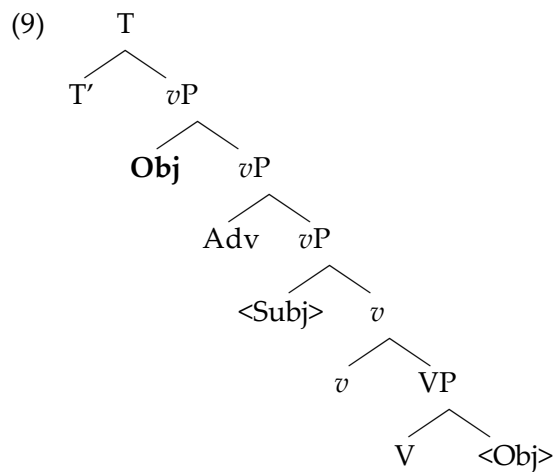
In particular, *vP*-ellipsis tests show that if the manner/duration adverb *dovho* 'for a long time' is preserved in a *vP*-ellipsis context, it makes the sentence ungrammatical. Compare (i) to (ii), which suggests that *dovho* is a *vP*-internal element:

- (i) *Taras dovho čytatyme knyžku, a Ivan dovho ni.
 Taras for-a-long-time read_{FUT} book but Ivan for-a-long-time not
- (ii) Taras dovho čytatyme knyžku, a Ivan ni.
 Taras for-a-long-time read_{FUT} book but Ivan not
 'Taras will read a/the book for a long time, but Ivan will not [read a/the book for a long time].'

The same result is obtained with frequency and time adverbs, suggesting important structural similarities among them. (See a similar conclusion about time adverbs in Czech in Kučerova 2007.) Considering the results of ellipsis tests presented above, I thus assume minimally that the *vP*-domain boundary is positioned above manner adverbs. Other details are left for future research.

ments (SAdvOV) were significantly lower. Interestingly, there was no significant difference between manner and frequency adverbs in those positions. These findings provide evidence that the preferred order of scrambled objects relative to adverbs is achieved when the object moves over the adverb (SAdvOV→SOAdvV). Other possible word orders would be prosodically or semantically marked, e.g., have a contrastive focus on the adverb.

I conclude, then, that when a direct object moves to a pre-verbal position via scrambling (i.e., *v*P adjunction), the linear order of the sentence becomes Subject > Direct Object > (Adverb) Verb. Assuming that low adverbs mark the structural border of *v*P in Ukrainian, when scrambling occurs, the object shifts to the position right above these elements, as shown in (9):



The phrase then goes to Spell-out and is pronounced with the appropriate linear order. Note that this mechanism does not preclude the direct object from moving to a higher position in the structure if conditions for the next step in the derivation are met.

3.3. Semantic Interpretation of Direct Objects

Insofar as they are known to alter interpretation in the broadest sense, word-order permutations have never been considered absolutely free in Slavic languages. But the interpretational correlates of various syntactic structures have often been described in somewhat vague terms

(e.g., old/new). When grammarians working in a formal framework try to operate with notions developed by advocates of functional or communicative approaches to language study, they face the problem of defining the main semantic/pragmatic properties of scrambled vs. nonscrambled constituents. Intuitively, an old, given, known, or familiar object is one the speaker knows about. This familiarity is marked by positioning a word denoting this object somewhere near the beginning of the sentence. On the other hand, an object representing new or unknown (at the moment of speech) information is marked by placing the constituent toward sentence-final position. Although this description of the phenomenon is in principle correct, many questions remain. What is known information? Is it known only by the speaker, or also by the hearer? How old (or rather recent) should the old information be? Does the given object mean the one that has one and only one salient antecedent in a previous sentence or can it be one of many previously mentioned objects? Furthermore, as has been frequently pointed out (see Zubizarreta 1998: 159 and the references within), the question is: Do the discourse notions (e.g., old/new) have any direct grammatical import?

The following discussion is an attempt to look at these issues from a different perspective, using methodology and terminology developed primarily for Germanic languages. In particular, in the extensive literature on object scrambling/shift, involved objects have often been described using the semantic features of definiteness/specificity (which can also be marked directly by obligatory lexical items, e.g., articles). Considering that German or Dutch also employ reordering of the main constituents in the sentence to achieve a certain interpretation, it could be revealing to probe whether the same effects are obtained in article-less Slavic languages.

3.3.1. Dutch-Ukrainian Parallels

Based on Dutch-Ukrainian parallels, I argue that MOS has similar semantic correlates in both languages. In Dutch, an indefinite direct object scrambled over an adverb or negation always receives a specific interpretation, as shown in example (10) from Unsworth and Helder 2008. In (10a) the direct object remains in situ, and it is interpreted nonspecifically. In (10b) the same object has moved to a scrambled position, where it is obligatorily interpreted specifically. As the glosses

indicate, to unambiguously express this interpretation in English an adjective such as *certain* is needed.

- (10) a. Het meisje heeft twee keer **een bal** gegooid.
 the girl has two times a ball thrown
 'The girl threw a ball twice.'
- b. Het meisje heeft **een bal** twee keer gegooid.
 the girl has a ball two times thrown
 'The girl threw a certain ball twice.'

Similar effects are obtained in Ukrainian. In (11a), there are two balls which were thrown (or alternatively one ball which was thrown twice), while in the sentence (11b) the first interpretation is not available.

- (11) a. Divčynka dviči kynula **m'jačyk**.
 girl twice threw ball
 'The girl threw a(ny) / the/a certain ball twice.'
- b. Divčynka **mjačyk** dviči kynula.
 girl ball twice threw
 'The girl threw the/a certain ball twice.'

Furthermore, pronouns that are considered to be inherently specific-referential (see also Koopman 1998) must raise in both Dutch, as in (12), and Ukrainian, as in (13).¹⁰

- (12) ...dat Marieke **haar** niet gezien heeft.
 that Marieke her not seen has
 '...that Marieke didn't see her.'

¹⁰ These examples are used as additional evidence of object scrambling, but the nature of pronominal movement is more complex than the movement of DP and needs a more careful investigation. Strictly speaking, in Ukrainian the pronoun can be left in situ, but in that case the sentence receives a marked prosodic realization.

- (13) Marija **jji** ne bačyla.
 Maria her not seen
 'Maria didn't see her.'

In addition, other types of direct object NPs seem to behave similarly in Dutch and Ukrainian. Definite NPs, quantificational NPs, and proper names scramble optionally, while indefinite NPs usually do not (de Hoop 2003b, among others). Hence, the general observation concerning Ukrainian is that object scrambling alters the sentence interpretation, restricting possible semantic properties of the object in pre-verbal position. This observation can be supported by a number of tests with lexical markers of NP semantics that are presented in the following section.

3.3.2. Lexical Markers and Syntactic Movement

Ukrainian lacks articles, but there are lexical items that denote the semantic properties of sentence constituents. These are demonstrative/indicative pronouns, indefinite pronouns, and various particles or adverbial elements marking a range of semantic meanings in a sentence. Their use with scrambled or nonscrambled structures refines the intended interpretation and provides us with important information regarding possible syntax-semantic combinations.

For instance, demonstrative/indicative pronouns such as *cej, cja, ce, ci* 'this' and *toj, ta, te, ti* 'that' strongly imply shared knowledge between the speaker and hearer about a particular individual. Even though demonstrative pronouns are not obligatory, Ukrainian makes broad use of some of them. According to Shevelov (1963: 253), the function of the indicative pronoun 'that' resembles that of the definite article: "[...] Pronoun *toj* [...] is very common in comparisons. There it does not have a deictic/indicative meaning, but brings the concept closer to the reader or listener, presenting it not as something new, but something well-known." This pronoun is also often used when the object is mentioned for the second time, which coincides with the concept of "definite by previous mentioning." As shown in (14), the definite NP *tu slavu* 'that/the glory' occurs in pre-verbal scrambled position:

- (14) Ty zrosteš sobi na **slavu**... A poky rosty ty
 you grow_{FUT} self on glory and until grow you
 budeš, ta **tu** **slavu** rozdobudeš, ja ne splju,
 will and that glory gain_{FUT} I not sleep
 tebe kačaju.
 you rock

'You will grow up to your own glory... But until you grow and gain *that/the* glory, I am not sleeping, I'm rocking you'.

(from Shevelov 1963)

Indefiniteness can be based on the speaker's knowledge only (specific reading), or it can be related neither to the speaker nor to the hearer (nonspecific reading). In Ukrainian, the cardinal numeral 'one' in its various gender and number forms *odyn, odna, odne, odni* can have a specific meaning of 'a certain', and thus it often serves as a specificity marker. The same forms might be used in partitive contexts, i.e., structures like *odyn z nyx* 'one of them' or *odyn z NP* 'one of the NPs', clearly mark an individual which is a part of a previously introduced set. Indefinite nonspecific interpretation is usually associated with the commonly used indefinite determiner *jakyjs', jakas', jakes'*, and *jakis'* 'some' or other pronouns *byd'-jakyj, dejakyj, jakyj-nebud'* with the reinforced indefinite meaning 'whichever'.¹¹

These lexical markers are widely used in colloquial speech and might be more pertinent to some dialects or registers than to others, but they are useful in testing various syntax-semantics correlations in the analysis of Ukrainian word order. In particular, pronouns 'that' and 'some' can be used to test whether there is any change in the meaning of scrambled sentences as compared to non-scrambled ones. In the basic word order structure (15), any of these determiners is acceptable, and the sentence can have the following readings: (a) there is 'a certain book' that will be read by Taras or (b) there will be some event of reading of 'a book'.

¹¹ Cummins (1998) provides description and classification of similar pronouns in Czech. In Ukrainian, too, they differ slightly in the degree of indefiniteness.

- (15) a. Taras švydko čytatyme **[tu]** **knyžku**.
 Taras quickly read_{FUT} that_{ACC} book_{ACC}
 ‘Taras will read the/that book quickly.’
- b. Taras švydko čytatyme **[jakus’]** **knyžku**.
 Taras quickly read_{FUT} some_{ACC} book_{ACC}
 ‘Taras will read some book quickly.’

After object scrambling, however, the sentence in (16b) becomes unacceptable with *jakus’* (unless it receives a drastically distinct prosodic realization). This suggests that only a definite/demonstrative interpretation is possible with the scrambled object.

- (16) a. Taras **[tu]** **knyžku** švydko čytatyme [~~tu~~] ~~knyžku~~.
 Taras that_{ACC} book_{ACC} quickly read_{FUT}
 ‘Taras will read the/that book quickly.’
- b. #Taras **[jakus’]** **knyžku** švydko čytatyme
 Taras some_{ACC} book_{ACC} quickly read_{FUT} [~~jakus’~~] ~~knyžku~~.
 ‘Taras will read some book quickly.’

Ukrainian also employs many other lexical elements that indicate intended the interpretation of an object or individual as old/new or known/unknown to the hearer and/or speaker. In traditional grammars these elements have been classified as pronouns, particles, or adverbs with expressive or reinforcing meaning, and they have also been called rheme-indicators and theme-indicators (or focus and topic markers).¹²

¹² Investigation of their role in Ukrainian grammar is presented in Merkulova 2006, who follows the Prague-school tradition and defines several means of marking old/given or new/unknown information in the discourse (i.e., phonetic, syntactic, and lexical). According to her, rheme-indicators are the items used as clues for hearers that the information to follow is new/unknown, and thus indefinite, e.g., *inšyj* ‘another’, *zrodu* ‘never (in one’s life)’, *zovsim* ‘at all’, *ščos* ‘something’ + ADJ, *navit* ‘even’, *majže* ‘almost’, *troxy* ‘a bit’, etc. Presence of such words in a sentence reinforces various indefinite/nonspecific nuances in the semantics of a constituent, as shown below:

For instance, the use of lexical markers defined as rheme-indicators (assuming that they mark indefinite items, i.e., new for speaker and hearer) should be incompatible with scrambling. The sentences in (17) demonstrate that the pronoun *inšyj* ‘another’ with the indefinite/nonspecific meaning anyone who is not like a previous one normally appears in a post-verbal position, provided the intonation is neutral.

- (17) a. My šukajemo **inšoho** **vykladača** (ne takoho, jak
we search another professor not such as
my maly raniše).
we had before
‘We are searching for another professor (not like the one we had before).’
- b. #My **inšoho** **vykladača** šukajemo (ne takoho, jak
we another professor search not such as
my maly raniše).
we had before

When the NP *inšoho vykladača* ‘another professor_{ACC}’ is placed in a preverbal position (18), the sentence will make sense only if *inšoho* is stressed, and the context implies that the individual is someone who we know, but not the one you are thinking about, hence—specific indefinite (or contrastively focused).

- (18) My **INŠOHO** **vykladača** šukajemo.
we another professor search
‘We are looking for another professor (someone who we know, not this one).’

Another language-specific construction mentioned earlier (see fn. 12) has a clearly indefinite/nonspecific reading: *ščos* ‘something’ + Adjective. This constituent prefers a nonscrambled position, as in

-
- (i) ...v očax svitylos’ **ščos** kotjačoho.
in eyes shined something cat-like_{GEN}
‘... something cat-like shined in (his) eyes.’ (From Shevelov 1993)

(19a). The scrambled structure with the same DP, as in (19b), sounds unnatural.

- (19) a. Sered toho hamoru vona počula **ščos'** **znajome**.
 amid that noise she heard something familiar
 'She heard something familiar amid that noise.'
- b. #Sered toho hamoru vona **ščos'** **znajome** počula.
 amid that noise she something familiar heard

On the other hand, constructions with direct objects accompanied by lexical elements indicating something familiar, given, or known from previous discourse (so-called theme-indicators or topic-markers) show that the most natural representation is a scrambled one. There are many particles and pronouns with deictic or reinforcing meaning in this group, e.g., *os'* 'here', *ot* 'here/there', *to* 'it/that', *on* 'there', *oce* 'this (in close proximity)', *ce* 'it/this', *takyj* 'such'. Adverbial elements are also often used to mark so-called absolute definiteness, e.g., *jakraz* 'right', *same* 'just/exactly', *točno* 'exactly', *vlasne* 'actually', *spravdi* 'really', *dijсно* 'really'.

The sentences in (20) have three such lexical markers which strengthen the referential meaning of the direct object *ce* 'it': *vlasne* 'actually', *same* 'exactly', and *j* (a reinforcing particle), and thus its preferred position is before the verb, as in (20a).

- (20) a. Čolovik vlasne same **ce** j rozpovidaje.
 man actually exactly this PART tells
 'This is exactly what this man is telling.'
- b. ?Čolovik vlasne j rozpovidaje same **ce**.
 man actually PART tells exactly this

One might argue that the direct object in (20) is a pronoun, which usually precedes the verb in Ukrainian regardless of other indicators. However, even if we replace the pronoun *ce* with the nominal phrase *taku kazku* 'such a story_{ACC}', the effect is very similar—the structure in (21b) is degraded compared to (21a):

- (21) a. Čolovik vlasne same **taku kazku** j rozpovidaje.
 man actually exactly such story PART tells
 'This man is actually telling such a story.'
- b. ?Čolovik vlasne j rozpovidaje same **taku kazku**.
 man actually PART tells exactly such story

Sentences with adverbial elements suggesting familiarity with the direct object (*zrodu* 'never in one's life' and *os'* 'here') also exhibit preference for the scrambled structure. The examples in (22) show that addition of only the adverbial particle *os'* 'here' has a dramatic effect on acceptability judgments. The meaning of the direct object is clearly referential, and its most natural position is a scrambled one as in (22a). When it remains in its basic position as in (22c), however, the presence of the particle *os'* makes the sentence unacceptable.¹³

- (22) a. Ja *os'* **lysta** otrymav – čytajte.
 I PART letter_{GEN} received read_{IMP.PL}
 'I received a letter. Here, read it.'
- b. #Ja *os'* otrymav **lysta** – čytajte.
 I PART received letter_{GEN} read_{IMP.PL}
- c. #Ja otrymav (**os'*) **lysta** – čytajte.
 I received PART letter_{GEN} read_{IMP.PL}

To conclude this sub-section, the data provided above indicate that: (i) word order is not absolutely free in Ukrainian, as there are many sentences which sound degraded under a change of constituent position, (ii) the general predictions about the correlation between syntactic structure and object semantics have been confirmed, and (iii) objects scrambled to the middle position cannot be interpreted as new or unknown by speaker, although their exact semantic properties remain to be defined. The next three sections are devoted to a more fine-grained analysis of the scrambled object semantics, where the features of referentiality, definiteness, and partitivity are considered.

¹³ A separate issue concerns the Genitive marker *-a* on the direct object *lyst-a*. There is no negation in the sentence, and normally we would expect the direct object to be Accusative, but that is not the case for (22), which sounds more natural with the object in GEN. These data require more detailed investigation.

3.3.2.1. Specific-Referential Objects

Based on recent advances in linguistic theory, specificity can be defined in two ways: as referentiality or as partitivity/presuppositionality. Note that in this paper these are two different features; see (3) above.

A referential element usually takes wide scope over intentional/modal operators, such as *look for*, *must*, *ought to*, *would*, and *want*. Hence, structures with these lexical items can be used for testing the scopal characteristics of direct objects. Contrastive pairs of SVO and SOV sentences accompanied by appropriate contexts show that while in situ objects can be ambiguous, as in (23a–b), objects in a pre-verbal position, as in (23c–d), are more likely to refer to an individual known to the speaker.

(23) What are you doing?

- a. Ja šukaju **zakolku**, xoču volossja zakoloty, bo
 I look-for hair clip want hair to clip because
 vono meni zavažaje.
 it me bothers

‘I am looking for a hair clip; I want to pin my hair back because it bothers me.’

- b. Ja šukaju **zakolku**, i ne možu zhadaty, kudy
 I look-for hair clip and not can recall where
 ja jiji poklala.
 I it put

‘I am looking for a certain hair clip, but I cannot recall where I put it.’

- c. Ja **zakolku** šukaju, i ne možu zhadaty, kudy
 I hair clip look-for and not can recall where
 ja jiji poklala.
 I it put

‘I am looking for a certain hair clip, but I cannot recall where I put it.’

- (23) d. ?Ja **zakolku** šukaju, xoču volossja zakoloty, bo
 I hair clip look for want hair to clip because
 vono meni zavažaje.
 it me bothers
 ‘I am looking for a hair clip; I want to clip my hair because it bothers me.’

The judgments on (23d) (which does not imply any specific hair clip) differ, and most native speakers I have consulted would like to know the previous context, change the prosody or add some determiner before the scrambled object, e.g., *svoju/moju zakolku* ‘self’s/my hair clip_{ACC}’. This suggests that scrambling might be one of the means of marking object referentiality, but not the primary one.

On the other hand, the contrast between scrambled and nonscrambled sentences is more noticeable when the lexical item ‘one’ (which can function as a specificity marker, see also Ionin 2003 for Russian) is used along with a scope-marking element. In its basic position, the direct object ‘one book’ can take either wide scope, if ‘one’ is an unstressed article-like element, as in (24a), or narrow scope, as in (24b), with respect to ‘has to’:

- (24) a. Marija maje pročytaty **odnu knyžku**, ale ne može
 Maria has to read one book but not can
 jiji znajty.
 her find
 ‘Maria has to read a (certain) book, but she cannot find it.’
- b. Marija maje pročytaty **odnu knyžku**, ale šče ne
 Maria has to read one book but yet not
 vyrišyla jaku.
 decided which
 ‘Maria has to read a book but hasn’t decided yet which one.’

When the direct object ‘a book’ is moved over the modal in (25a), it obviously receives a wide-scope reading associated with specificity-referentiality. The sentence in (25b), however, is not acceptable since it provides contradictory information: the scrambled object implies spec-

ificity, while the following context reinforces its nonspecific narrow reading.

- (25) a. Marija **odnu knyžku** maje pročytaty, ale ne može
 Maria one book has to read but not can
 jiji znajty.
 her find
 ‘Maria has to read a (certain) book but cannot find it.’
- b. #Marija **odnu knyžku** maje pročytaty, ale šče ne
 Maria one book has to read but yet not
 vyrišyla jaku.
 decided which
 ‘Maria has to read a (certain) book but has not decided yet
 which one.’

Nevertheless, some speakers might find the last sentence acceptable. They might stress the lexical marker ‘one’, treating it as a numeral and reinforcing the contrastive meaning of the direct object (there exists one book, and not two). It is not clear at the moment whether this reading precludes referentiality in the object, but it is clear that there is a contrast between (24b) and (25b), which is due to the word-order change.

It also appears that the effects of scrambling are still evident even if we avoid using ‘one’ in contexts where it is unnecessary. The direct object in (26) can be interpreted only as ‘a certain, one boy’ if there is no lexical marker used and its position is preferably pre-verbal.

- (26) a. Marija **xlopcja** pokoxala i vyjšla za n’oho zamiž.
 Maria boy_{ACC} loved and married-him
 ‘Maria fell in love with a (certain) boy and married him’.
- b. #Marija **xlopcja** pokoxala, ale nixto ne znaje,
 Maria boy_{ACC} loved but nobody not know
 xto vin.
 who he
 ‘Maria fell in love with a (certain) boy, but nobody knows
 who he is’.

It is also possible that the direct object 'boy' in (26a) is known not only to the speaker but also to the hearer and that it was mentioned earlier in the conversation, suggesting that this noun is not only referential, but also presupposed. If so, then the scrambled object 'boy' is definite, and the effects of specificity-referentiality on scrambling in Ukrainian are rather weak.

3.3.2.2. Definite Objects

As already pointed out in section 2, definiteness is another property often associated with scrambled objects. Definiteness is usually described in terms of presupposition of uniqueness (Heim 1991). According to Hawkins 1978, uniqueness can be established in several ways: anaphorically (through previous mention); through association (with a previous event); through entailment (via PPs, adjectives, or modifying clauses); in the visible or immediate situation; and through common knowledge. All these types of definiteness are marked with the article *the* in English, but not all of them are encoded by scrambling in Ukrainian.

The examples in (27) show that when the direct object 'car' is clearly marked as definite by the demonstrative pronoun 'this' and is unique through previous mentioning, its most natural place is the scrambled position:

(27) Look, what a nice car, but it doesn't run.

- a. Ja **cju mašynu** možu poremontuvaty i zabraty sobi.
 I this car can fix and take self
 'I can fix this car and take it for myself.'
- b. ?Ja možu poremontuvaty **cju mašynu** i zabraty sobi.
 I can fix this car and take self

The sentences in (28) have no lexical marker of definiteness (such as 'this' or 'that'), but still the only acceptable position for the direct object 'roof' is a scrambled one, as in (28a):

(28) Our house has a red roof and green windows.

- a. Ja **dax** by tež pofarbuav zelenoju farboju, ale
 I roof would also paint green paint but
 ne maju na ce času.
 not have for this time
 ‘I would also paint the roof green, but I don’t have time for this.’
- b. ?Ja by tež pofarbuav **dax** zelenoju farboju, ale
 I would also paint roof green paint but
 ne maju na ce času.
 not have for this time

The nature of the contrast between (28a) and (28b) seems complex, but since the direct object is mentioned in a previous sentence, refers to a unique individual, and is definite, it is possible to presume that there exists a definiteness-scrambling correlation in Ukrainian.

It appears, however, that the last statement is not absolute, as it concerns primarily only one type of definiteness—via previous mention. Other types of definite objects (e.g., unique by association or entailment) do not show the same behavior. For example, in English, the definite article is required in the following contexts: “I went to a wedding yesterday. **The** bride was beautiful”; or “I bought a house. **The** roof is grey.” In Ukrainian, the same contexts are not supportive for scrambling. Although ‘bride’ is definite, its movement to a preverbal position in (29b) makes the sentence non-acceptable:

(29) There was a wedding by the church.

- a. Ty mohla by pobačyty **narečenu**, jakby pryjixala
 you could would see bride_{ACC} if came
 raniše.
 earlier
- b. #Ty **narečenu** mohla by pobačyty, jakby pryjixala
 you bride_{ACC} could would see if came
 raniše.
 earlier
 ‘You would have seen the bride, if you had come earlier.’

Similarly, in (30), although the direct object ‘Moon’ is unique and definite (via common knowledge), its use in a scrambled position sounds odd (assuming neutral prosody):

- (30) Astronauts went into space.
 #Tam vony **Misjac’** fotohrafuvaly.
 there they Moon_{ACC} took-a-picture
 ‘There, they have taken a picture of the Moon.’

The two last examples suggest that although definiteness can be a semantic property of a scrambled object (as shown by Brun (2005) for Russian), not all types of definiteness are compatible with scrambling in Ukrainian. In particular, there is no direct correlation between object scrambling and uniqueness. This further suggests that what matters semantically/pragmatically for scrambling is not definiteness but a feature presupposing the existence of a previously mentioned object (either unique or not). This is discussed in the following sub-section.

3.3.2.3. Partitive Objects

The previous mention of an individual that is not necessarily unique but a member of an established set (even if the set consists of one member) has been defined as partitivity (or presuppositionality; see fn. 4). In English, partitivity is marked by the article *a* with the meaning ‘one of many’, as in the following example from de Hoop 2003a:

- (31) Carl had dinner with three students and two professors
 yesterday.
 A/***The student** brought the wine they drank.

To test whether partitivity is associated with a specific position in Ukrainian sentence structure, we can use a test with existential sentences from de Hoop (2003a: 9). She shows that in Dutch, existential constructions can contain both overt and covert partitives. The sentence in (32) has an overt partitive ‘two of the books’, while the sentence in (33) is ambiguous in that the ‘many books’ can be interpreted existentially (there exist many books) or as a covert partitive (there are many *of the* books from a previously defined set).

- (32) Er zijn **twee van de boeken** die je moet lezen,
 there are two of the books that you have to read
 in de bibliotheek aanwezig.
 in the library present
 ‘In the library there are two of the books that you have to read.’
- (33) Er zijn **veel boeken** in de bibliotheek.
 there are many books in the library
 a. ‘In the library there are many books.’
 b. ‘Many of the books are in the library.’

The last example can be used as a test for the interaction between word order and partitivity in Ukrainian. The sentence in (34) is a typical existential construction in Ukrainian, with the constituent ‘many books’ interpreted as nonpartitive, nonspecific, indefinite:

- (34) U biblioteci je **bahato knyh**.
 in library is many books_{GEN}
 ‘There are many books in the library.’

However, when the set of books is established by a previous context, the word order should be changed as in (35). The NP ‘many books’ now takes a sentence-initial position and its interpretation is ‘many of the recommended books from the list’, which makes this NP partitive.

- (35) Here is the list of recommended books for this class.
Bahato knyh je v biblioteci.
 many books_{GEN} is in library
 = **Bahato z cyh knyh** je v biblioteci.
 = many of these books_{GEN} is in library
 ‘There are many (of these) books in the library.’
 #‘There are many books in the library.’

Similar effects are obtained with direct object scrambling in other types of syntactic structures. The sentences in (36) illustrate such a scrambling-partitivity correlation.

- (36) Five journalists had been invited to the party, but I saw only one of them.
- a. Ja tež **odnoho žurnalista** bačyv.
I also one journalist saw
'I also saw a journalist / one of the journalists.'
- b. ?Ja tež bačyv **odnoho žurnalista**.
I also saw one journalist
'I also saw one journalist.'

The object 'one journalist' is supposed to be a part of a set of 'five journalists' that is established in the discourse. In (36a), it is moved over the verb and indeed has a partitive interpretation. However, when this direct object is used in a post-verbal position, as in (36b), 'one' can be also perceived as a numeral, and then 'journalist' might not belong to the group of five journalists mentioned in a previous sentence. If there is a third speaker to continue the conversation, his intention to refer to the same journalist will be marked by the article-like pronoun 'that' and predictably the direct object will occur in a scrambled position. In this case it will be interpreted as definite, partitive and referential.

- (37) I ja **toho žurnalista** bačyv.
and I that journalist saw
'I have also seen the (same) journalist.'

Covert partitives that are not expressed with the phrase 'one of NP' can also appear in a scrambled position. For instance, use of an NP with the negative particle *ni...ni* 'neither...nor' (which is likely to be a polarity item), reinforces the interpretive effects of scrambling.¹⁴ Sentence (38a) means that Ivan has nothing to study with, it does not presuppose the existence of some specific book or notebook, so the sentence can have a neutral continuation. However, when the direct object

¹⁴The use of *ni...ni* yields sentential negation, and thus the direct objects in such sentences can be in the Accusative or the Genitive. In Ukrainian, the use of an Accusative form strongly implies specific semantics, but an NP in the Genitive is not necessarily nonspecific. In the examples in (38) the Genitive marker is used consistently, but (38b) still stands out from other structures in that the direct object is interpreted as specific.

constituent is placed before the verb, its reading is clearly partitive, as in (38b).

- (38) a. Ivan ne prynis **ni knyžky, ni zošyta**; dobre,
 Ivan not brought not book not notebook good
 ščo sam pryjšov do školy.
 that self came to school
 ‘Ivan brought neither book nor notebook; it’s good that he came to school himself.’
- b. Ivan **ni knyžky, ni zošyta** ne prynis, xoč
 Ivan not book not notebook not brought but
 znav, jaki z nyx potribni.
 knew which of them needed
 ‘Ivan brought neither book nor notebook, although he knew which ones are needed.’
- c. #Ivan **ni knyžky, ni zošyta** ne prynis; dobre,
 Ivan not book not notebook not brought good
 ščo sam pryjšov do školy.
 that self came to school
 ‘Ivan brought neither book nor notebook; it’s good that he came to school himself.’

The sentence continuation in (38b) suggests that we are dealing with a partitive direct-object NP. Apparently there was some list of supplies of which Ivan was aware and it included a certain book and a notebook. The nonspecific/nonpartitive reading is not available for a scrambled structure if the context does not presuppose any particular kind of book or notebook, as shown in (38c).

Summarizing, in Ukrainian, scrambled objects are usually perceived presuppositionally, while nonscrambled objects are often interpreted existentially. A presupposed object can be either definite or partitive, but since not all types of definiteness are associated with a scrambled position, this implies that partitive scrambled objects show the most consistent behavior. We can conclude, then, that among all the semantic features involved in Ukrainian scrambling, partitivity (also termed specificity in Enç 1991 and presuppositionality in Diesing 1992) is the most critical.

3.3.3. *vP*-Edge Effects in a Language-Specific Structure

The detailed analysis of MOS allows us to specify the semantics of the pre-verbal direct object and to establish the correlation between the syntactic position of the NP and its semantic features. Interpretational effects associated with the edge of the *vP* phrase are also evident in other constructions commonly used in Ukrainian. For instance, the language-specific structure labeled as Passive Accusative appears to be relevant in this discussion.

The Passive Accusative construction has the verb in a participle-like form ending in *-no/-to*, no subject-agent, and the structural direct object in the Accusative. Interestingly, this structure exhibits the same semantic effects as nonpassive scrambled structures. Consider (39), where the NP ‘new secretary’ is in a post-verbal position and can be interpreted in different ways. The context that follows disambiguates its semantics and suggests that it is a nonspecific ‘some secretary’.

- (39) Rik tomu na robotu bulo pryjnjato novu sekretarku.
 year ago on job was accepted new secretary_{ACC}
 ‘A new secretary was hired a year ago.’ (The company needed someone who knew English, hence some changes in our personnel.)

However, when the same NP appears in a pre-verbal position, which is usually reserved for a subject-agent, its interpretation is definite, as in (40), or partitive, as in (41):

- (40) Novu sekretarku pryjnjato na robotu rik tomu, jiji
 new secretary_{ACC} accepted on job year ago her
 zvaty Nina.
 name Nina
 ‘The new secretary was hired a year ago. Her name is Nina.’

- (41) Novu sekretarku pryjnjato na robotu rik tomu. Jiji vybraly iz
 desjaty kandydativ.
 ‘A (certain) new secretary was hired a year ago. She was chosen out of ten candidates.’

The most puzzling property of the structures with the verbal form ending in *-no/-to* is the combination of the morphosyntax of impersonals with the semantics of passives (Blevins 2003, Shevelov 1963). Because of this hybrid property, some linguists (e.g., Sobin 1985) have treated *-no/-to* forms as a distinctive type of impersonal passive, compared to the more familiar passive construction in which a [structural] subject NP-NOM agrees in gender and number with the auxiliary and verbal participle. Under such a view, a sentence with *-no/-to* and a pre-verbal NP-ACC could be analyzed as a scrambled structure without an overt subject. Lavine (2005), however, argues that Ukrainian *-no/-to* structures are passives formed by the A-movement of a non-generic, indefinite NP-ACC to the SpecTP position. This view is a consequence of a non-object-shift approach to Ukrainian, as argued by Lavine and Freidin (2002), who suggest that this structure has no available landing site at the *vP* edge because no Spec-*vP* is projected (but cf. Legate 2003 on passives as phasal heads). According to this approach, the NP-ACC lands in a sentence-focus projection, and a structure with a pre-verbal argument is appropriate in any context. Although I do not accept Lavine's analysis, his observation regarding the word order in the Passive Accusative construction is accurate: verb-initial order for Ukrainian *-no/-to* is awkward, and the NP-ACC must move over the verb. Furthermore, according to Blevins (2003) the pre-verbal NP-ACC is definite/specific, as the speaker and the hearer can identify the individual in question, while the suppressed subject is not specified or receives an indefinite (but not exclusively human or even agentive) interpretation. Leaving aside details of existing syntactic-semantic accounts for the Ukrainian Passive Accusative, the main language facts seem to be straightforward: the NP in the ACC moves out of *vP* and is interpreted as definite/specific/partitive. This is what is relevant to the current discussion of object semantics.

Note also that the two sentences in (40–41) are weakly marked in terms of information ordering and could be uttered "out of the blue." Nonetheless, they have pre-verbal direct objects which could be defined as definite specific or covert partitive. This suggests that the traditional information-based approach can be complemented with more transparent notions of semantic features, which in turn would allow us to account for various word-order structures in a formal framework.

3.3.5. Summary

The Ukrainian data presented in this paper show that the direct object moves over the verb in certain contexts. Scrambled direct objects can be interpreted as partitive (one from a set of existing individuals), definite (through previous mentioning), and sometimes as specific-referential (specified in the context and marked with “one”). This suggests that the generalizations stated in Thráinsson 2001 about the relationship between the semantics of the direct object and its movement to a scrambled position apply to Ukrainian as well:

(42) Generalization 1: a weak (nonspecific)/existential reading is incompatible with Object Shift (or scrambling), but

Generalization 2: objects with a strong/quantificational/specific reading do not necessarily have to shift or scramble.

There are cases when a scrambled position is clearly the best for a definite-partitive object, and then the object in its basic position is either degraded or interpreted as indefinite/nonpartitive. However, the optionality of scrambling remains a problem which has merely been described but not accounted for thus far. Moreover, these observations apply to sentences pronounced with a neutral intonation; a change in the pitch contour can modify the sentence interpretation and add even more variability into the existing syntax-semantics correlation. The following section is an attempt to use available theoretical notions of syntax, semantics, and prosody in order to provide directions for a possible unifying account of MOS.

4. Theoretical Implications

Assuming that *v*P (as well as CP) nodes represent points in the derivation of linguistic structures where the semantic propositions must be derived and stored, they have a special status in human language computation. Based on the logic of Phase Theory and the interpretational function of the Edge (Chomsky 2001), the syntactic derivation and computation of propositions occur by phases. The phase relevant for MOS coincides with the *v*P domain: the direct object moves from

its basic post-verbal position to the *v*P-edge. In order to permit such a computation, context-related values should be determined by the time the phase node *v*P is reached; that is, all context-sensitive elements, such as pronouns, quantifiers, or indefinites, have to be specified or interpreted. According to Chomsky 2001 (35), the *v*P edge has been assumed to involve Int, associated with some aspect of interpretation.

- (43) a. *v** is assigned an EPP-feature only if that has an effect on outcome.
 b. The EPP position of *v** is assigned Int.
 c. At the phonological border of *v**P, XP is assigned Int'.

The notion of Int, however, has not been defined (although see Miyagawa 2003, 2005, and 2011). Extending these ideas further, it can be proposed that the context-sensitive element occurring on the *v*P-edge must have Int (contextually-dependent interpretational complex) satisfying the semantic requirement of the syntactic derivation. On this view, scrambling occurs only if the semantics of the scrambled element involves a contextually defined parameter (as the Ukrainian data show, if it is partitive/presupposed). On the other hand, elements that are not contextually-dependent (nonpartitive indefinite nonspecific) do not satisfy a semantic prerequisite of scrambling and thus remain in their base position.

The consequences of this approach belong to the syntax-semantics interface, but as language facts suggest, it also affects the phonological level. In line with this, the formal grammar of context-sensitivity resembles that of the focus-topic dichotomy, which can also be expressed through movement to *v*P edge as in Hungarian (Kiss 1998) or prosodic adjustment as in English (Rooth 1992). Similar effects are discussed in the significant body of literature on the syntax-phonology interface (e.g., Frascarelli 2000, Ladd 1996, Nespor and Vogel 1986, Selkirk 1995, Szendrői 2001, Truckenbrodt 1999, Vallduvi 1992, among many others).

Particularly relevant is a proposal by Neeleman and Reinhart (1998) (see also Reinhart 2006). In their study of Dutch scrambling, Neeleman and Reinhart claim that an element is interpreted as D-linked (linked to an accessible discourse entity) if it does not bear sentential stress. The stress can be moved away from this element or the

element itself can appear in a higher position, where the main stress is not assigned by default. The first strategy can be used in English, when stress is relocated from its default rightmost position (44) to a constituent that represents new information (45b).

(44) My neighbor is building a DESK.

- (45) a. Who is building a desk?
 b. My NEIGHBOR is building a desk.

The second strategy is used in Germanic languages exhibiting object shift. For instance, in Dutch, objects usually follow an adverb and receive the main sentential stress, as in (46a). However, when the object precedes the adverb, as in (46b), it is destressed. The destressing operation in this case is associated with D-linking, because only definite, specific, or generic objects can appear in a shifted position.

- (46) a. ...dat Jan langzaam het BOEK las.
 that Jan slowly the book read
 b. ...dat Jan **het boek** langzaam LAS.
 that Jan the book slowly read

Neeleman and Reinhart conclude that object shift in some languages has the same effect as prosodic shift in other languages. Both shifting operations are tied to object semantics: only D-linked (definite or specific/partitive) constituents can be involved in the processes described. Further research is needed to explore how syntax, prosody, and semantics interact in languages that allow both operations (syntactic movement and prosodic recontouring), e.g., in Ukrainian. The next step could be a further examination of a correlation between syntactic movement and prosodic marking. To address the issue of optionality, it is imperative to explore what happens at both phonological edges of a *vP*; i.e., when there is no object scrambling in definite/partitive contexts. It can be predicted that in the absence of syntactic movement in such contexts, prosodic means would be activated. Specifically, nonscrambled sentences with a definite/partitive interpretation must have a detectable prosodic contour.

5. Conclusions

Scrambling is a complex phenomenon, and its investigation has called for many years and many studies. This paper focused on one type of scrambling and a particular set of semantic features that limit the optionality of the process, leaving other issues aside. Such an approach raises legitimate questions regarding the application of the proposed analysis to other scrambled structures and the role of other factors in scrambling. Thus far it is difficult to present an all-encompassing account, as similar examinations should be conducted in each particular case.

There has been much accomplished in this domain, though. Word-order permutations have been investigated with regard to contextually dependent features termed givenness or specificity (see Karimi 2003, Kučerova 2007, Schwarzschild 1999, von Heusinger and Kaiser 2003, and others). The role of context or discourse has been emphasized as well (see, e.g., Yokoyama 1986 and Pesetsky 1987, among many others). Recent dissertations on Slavic languages (although mostly based on Russian and Czech data) have also contributed to the issue of variable word order and attempted to integrate functional approaches to Information Structure with formal generative insights (Kallestinova 2007, Slioussar 2007, Kučerova 2007, Dyakonova 2009). This research follows the same trend by integrating different frameworks. However, it departs from the above-mentioned studies in the choice of a research strategy and in focusing the investigation on a microlevel. Concentrating on only one type of scrambling—MOS, which is wide-spread both language-internally and cross-linguistically—allows us to describe a derived structure more thoroughly and to account for it, while considering its properties as a complex phenomenon. The next step could be a more detailed experimental analysis of the prosodic aspects of scrambling.

To conclude, the core observation concerning Ukrainian is that MOS alters sentence interpretation, restricting the possible semantic properties of the object in pre-verbal position to specificity as partitivity/presuppositionality (as in Dyakonova 2009; but cf. Slioussar 2007 on Russian). This approach opens new perspectives for developing an integrated account of similar phenomena in various languages that are usually treated independently but could be reduced to one type. While there remain obvious differences between Germanic and Slavic syn-

tactic structures, the data presented in this paper indicate some important parallels which cannot be ignored.

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Received: August 2010
Revised: April 2011