

Discourse Prominence and *Pe*-marking in Romanian

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Abstract

Referential expressions are used to introduce and continue reference to entities with particular referential properties, but also with particular discourse properties. In this paper we investigate the referential and discourse properties of *pe*-marked indefinite direct objects in Romanian, which are an instance of Differential Object Marking (DOM). *Pe*-marking is generally obligatory for definite noun phrases but optional for indefinite ones. The optionality of *pe*-marking with indefinite descriptions constitutes the focus of the present article. We will show that, on the one hand, *pe* with indefinite descriptions allows the realization of referential properties such as specific or wide scope readings, but that on the other hand, *pe* also signals discourse prominence, in particular in such contexts where referential properties are neutralized.

We assume three parameters for discourse prominence, namely referential persistence, the topic-shift potential and the type of anaphoric referring expressions. We used these three parameters in a web-based story continuation experiment. The findings of the experiment revealed several interesting patterns: (i) that *pe*-marked direct objects are referentially more persistent than their unmarked counterparts, (ii) that *pe*-marked direct objects show a systematic preference to become topics two or three sentences after being introduced in the discourse, and (iii) that (modified) definite NPs were chosen to refer back to the referent of the marked as well as to the referent of the unmarked direct object. On the basis of the first two parameters we conclude that the relevant discourse contribution of *pe* is to signal to the hearer that subsequent information about that referent will follow, whereas the third parameter indicates that the referent of the *pe*-marked indefinite is not necessarily associated with a high level of activation. The general findings of the experiment support Kehler et al.'s (2008) intuition to differentiate between referential persistence and the activation level of the referent.

Keywords

discourse prominence, activation, referential persistence, *pe*-marking, Romanian, differential object marking

1. Introduction*

Romanian exhibits differential object marking (DOM) using the particle *pe* (Niculescu, 1965; Farkas, 1978; Dobrovie-Sorin, 1994; Pană-Dindelegan, 1997; Mardale, 2002; von Heusinger and Onea, 2008; Stark and Sora, 2008). Direct object case marking is obligatory for personal pronouns, proper names and in general for definite modified noun phrases, while it is optional for indefinite animate noun phrases (NPs). Referential parameters (animacy, definiteness and specificity) are responsible for the distribution of *pe* in most cases, but they cannot account for the optionality of the DOM-marker in plain and transparent contexts. The interesting cases are post-verbal indefinite direct objects and unmodified definite direct objects. We will limit our discussion in this paper to animate direct objects realized as indefinite NPs. For a discussion of definite NPs in direct object position, see von Heusinger and Chiriacescu (2010).

For indefinite direct object NPs as in (1), *pe*-marking is optional while its functional content is described by informants as “more important for the subsequent discourse”. *Pe* might also have some “epistemic flavour” in the sense that the speaker could have more information about the referent. Note that *pe*-marking generally co-occurs with clitic doubling.

- (1) a. Petru a vizitat un prieten.
Petru has visited a friend
“Petru visited a friend”.
b. Petru l -a vizitat pe un prieten.
Petru CL has visited PE a friend
“Petru visited a friend”.

In a previous study (Chiriacescu and von Heusinger, 2009), we suggested that for indefinite human direct objects, besides specificity, discourse prominence also influences their case-marking. Case-marked indefinite direct objects show the property of “referential persistence”, i.e. the referent of the *pe*-marked

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object is more likely to be mentioned in the following discourse in comparison to its unmarked counterpart. The conclusion we drew from examples involving “optional” *pe*-marking in plain and transparent contexts was that *pe* signals the intention of the speaker to talk about that referent again, given that all other parameters remain the same. This conclusion raises several questions, though, which we elaborate in this paper, namely (i) what are the relevant (discourse) properties of *pe* in transparent contexts, (ii) how can we test these properties and (iii) how are they related to referential properties such as specificity.

In this paper we primarily address the first two questions and we will hint at the more general problem of the third question. In Section 2, we will briefly look at referential properties such as animacy, definiteness and specificity, which are responsible for the distribution of *pe*-marking in Romanian along the referentiality scale. We also provide a more detailed discussion of the “optionality” of *pe*-marking with indefinite noun phrases by presenting different contrasts, including their interaction with extensional quantifiers, intensional operators and epistemic contexts. Section 3 motivates the introduction of the concept of discourse prominence in relation to *pe*-marking in Romanian. We will discuss several approaches to discourse prominence (Givón, 1983; Ariel, 2001; and Gundel, Hedland and Zacharski, 1993), and focus on three parameters of discourse prominence: (i) referential persistence in terms of the number of anaphoric expressions, (ii) the topic shift potential in terms of the first next sentence in which the introduced referent is used as a topic for the first time, and (iii) the activation of the referent mirrored by the type of referring expression used to refer back to the referent. In Section 4 we present the evaluation of a first questionnaire on referential persistence. In Section 5 we discuss a larger web-based sentence continuation experiment which we designed to test the discourse prominence of direct objects along the three mentioned parameters. Section 6 contains the concluding remarks of this paper.

2. PE Marking in Romanian

Romanian, like many other languages (see Bossong, 1985; Aissen, 2003), shows differential object marking (DOM). This means that in some contexts the direct object may or even must be marked by the particle *pe*, mostly accompanied by clitic doubling. The direct object marker *pe* is a homonym with the locative preposition *pe* meaning “on”. However, the classification of *pe* is not straightforward, since *pe* shares properties of prepositions but does

Table 1. Referentiality Scale

pers. pron. > PN > def. NP > spec. indef NP > non-spec. indef NP > non-arg NP

not have a prepositional meaning. There is some consensus in the literature that the most important synchronic conditions triggering DOM in Romanian are animacy, definiteness, and specificity (Farkas, 1978; Dobrovie-Sorin, 1994; Kamp and Bende Farkas (submitted); among others). According to these findings, *pe*-marking, mostly combined with clitic doubling, only applies to human direct objects if they are definite or specific. In this section we briefly describe the conditions for *pe*-marking along the Referentiality Scale in Table 1.¹

2.1. Definite Expressions

Full personal pronouns (2) referring to animate entities are always marked with *pe* and doubled by a clitic in synchronic Romanian.²

- (2) Maria îl ascultă pe el.
 Mary CL listens PE he
 “Mary listens to him”.

Proper names referring to humans, or to strongly individuated, personified animals, as in (3), are always *pe*-marked.

- (3) L -am văzut pe Ion / pe Donald Duck.
 CL have seen PE John / PE Donald Duck
 “I have seen John / Donald Duck”.

There are additional conditions triggering the *pe*-marking of proper names, including metonymical shifts and metaphorical transfers (cf. Gramatica Limbii Române, 2005), but since they are not central for our analysis we do not discuss them here.

Modified human definite NPs in direct object position are generally *pe*-marked, as illustrated in (4a). The form without *pe* in (4b) is rather marginal:

¹ Note that we focus on postverbal direct objects. Preverbal (i.e. topicalized) direct objects are generally *pe* marked (Dobrovie-Sorin, 1994; Gramatica Limbii Române, 2005).

² DOM in Romanian is generally accompanied by clitic doubling, i.e. the occurrence of a co-indexed weak pronoun. A doubling clitic is optional, obligatory or disallowed, depending on semantic features of the head noun and further syntactic constraints. In this paper we will address the phenomenon of DOM in Romanian as a whole, thus, in the following sections, will not make an explicit distinction between clitic doubling and *pe*-marking (but see Dobrovie-Sorin, 1994; Gramatica Limbii Române, 2005; Klein, 2008, on clitic doubling).

- (4) A: Un băiat merge la doctor.
A boy goes to doctor
“A boy goes to the doctor”.
- a. Doctorul îl examinează pe băiatul bolnav.
Doctor.DEF CL examines PE boy.DEF sick
“The doctor examines the sick boy.”
- b. ?Doctorul examinează băiatul bolnav.
Doctor.DEF examines boy.DEF sick
“The doctor examines the sick boy”.

Romanian shows a general blocking effect of prepositions upon unmodified definite nouns, which also holds for the DOM-marker *pe*. This rule is responsible for the ungrammaticality of the enclitic definite article on the unmodified noun phrase in the presence of other prepositions.³ While most prepositions always block the attachment of the enclitic definite article on unmodified nouns, note the form *la doctor* “to the doctor” in (5A), in the case of *pe* as a case marker, the above mentioned constraint also holds but gives rise to an alternation. Speakers of Romanian can either drop the marker *pe*, as in (5a), or drop the definite article, as in (5b):

- (5) A: Un băiat merge la doctor. (A boy goes to the doctor.)
- a. Doctorul examinează băiatul.
Doctor.DEF examines boy.DEF
“The doctor examines the boy”.
- b. Doctorul îl examinează pe băiat.
Doctor.DEF CL examines PE boy
“The doctor examines the boy”.

The sentences (5a) and (5b) represent different possibilities of expressing very similar referential categories. As can be noticed so far, Romanian shows a variation between modified definite direct objects and unmodified definite direct objects. Nevertheless, the contrast is different: for modified definite objects the alternation concerns the marker *pe*, but not the definite article; for unmodified definite objects the alternation affects both: the marker *pe* and the definite article. The semantic-pragmatic conditions responsible for the two

³ Other syntactic and semantic factors may also block or favour the use of one of the two direct object forms. For example, the occurrence of the possessive dative in preverbal or postverbal position rules out the *pe*-marking of the direct object (see Onea and Hole (2010) on *pe*-marked definite descriptions and binding). On the contrary, certain noun types (which express kinship relations or archaic uses of certain terms) favour the use of *pe* (see von Heusinger and Chiriacescu, 2010).

variations are probably quite different: for modified definite objects, the form without the marker *pe* is marginal, while for unmodified definite objects, both forms are acceptable. Depending on the contexts and language registers Romanian speakers tend to prefer one construction over the other. However, both sentences are grammatical and have the same propositional content. For an ample discussion of *pe*-marking with unmodified definite direct objects, see von Heusinger and Chiriacescu (2010).

2.2. Indefinite NPs and Specificity

The literature (Farkas, 1978; Dobrovic-Sorin, 1994; von Heusinger and Onea, 2008; among others) assumes that specificity is the main triggering parameter for DOM with indefinite human direct objects. However, in transparent and plain contexts, the semantic notion of specificity in terms of scope taking over other operators cannot be applied. However, these contexts still show a contrast in *pe*-marking, this being a typical instance of “fluid” constraints (see Malchukov and de Hoop, 2007; de Swart, 2007). Below we will test the following (additional) parameters to explain different uses of indefinite descriptions: scopal specificity with extensional operators, referential specificity with intensional operators and epistemic specificity in transparent contexts.

Scopal specificity with extensional operators and referential specificity with intensional operators triggers *pe*-marking. While the sentence (6a) is ambiguous between a specific (or wide scope) reading and a non-specific (or narrow scope) reading, the non-specific reading in (6b) is ruled out due to the presence of *pe* (Dobrovic-Sorin, 1994). The same variation in readings between specific or *de re* readings and non-specific or *de dicto* readings is maintained for constructions with intensional operators, like in (7). To be more exact: non-specificity blocks the appearance of *pe*.

(6) Extensional operators

- a. Toți bărbații iubesc o femeie.
All men love a woman
“All men love a woman”. (specific/non-specific)
- b. Toți bărbații o iubesc pe o femeie.
All men CL love PE a woman
“All men love a woman”. (only specific)

(7) Intensional contexts

- a. Ion caută o secretară.
John looks for a secretary
“John looks for a secretary”. (specific/non-specific)

- b. Ion o caută pe o secretară.
John CL looks for PE a secretary
“John looks for a secretary”. (only specific)

Thus, (7a) could have an interpretation where John is looking for a particular secretary (the specific reading) as well as one where any secretary will do (the non-specific reading), while (7b) only allows the specific interpretation.

It seems that we cannot extend this contrast to epistemic specificity, as illustrated in (8). Epistemic specificity is understood as the knowledge of the speaker or of some other salient agent about the identity of the referent. If *pe* would show a contrast with respect to epistemic specificity we would expect the referent of the indefinite *pe un actor* (“pe an actor”) in (8b) to be known by the speaker or some other salient agent, while the sentence (8a) would allow both an epistemic specific and an epistemic non-specific reading.

(8) *Transparent contexts*

- a. Petru a văzut un actor. Dar eu nu îl cunosc.
Petru Aux. visited an actor. But I not CL know
“Petru visited an actor. But I do not know him”.
- b. Petru l -a văzut pe un actor. Dar eu nu îl cunosc.
Petru CL Aux. visited PE an actor. But I not CL know
“Petru visited an actor. But I do not know him”.

Both versions (8a-b) are felicitous with a continuation in which the speaker denies that s/he could identify the referent (we could also continue the sentence with “Nobody knows him”). In other words, *pe* does not block the epistemic non-specific reading. We still assume that the formal alternation between the two forms can be associated with a weaker constraint, as will be discussed in Section 3.

2.3. Bare NPs

Moving along the referentiality scale to the right, after analyzing specific and non-specific indefinite NPs, we come to another category of indefinites which are characterized by their feature [-argumental] (see Leonetti, 2004; von Heusinger, 2008 for Spanish) and by their morphological “emptiness”, in the sense that they are realized as “bare NPs”. The relevant constructions for DOM are those in which the bare noun does not refer to a particular referent and thus, does not introduce a discourse referent, but rather refers to a property. For example in (9), the property of being a secretary:

Table 2. Referentiality Scale and *pe*-marking in Romanian for human direct objects

pers. pron.	> PN	> def. NP	> spec. indef NP	> non-spec. indef NP	> non-arg NP
+	+	+	+/-	–	–

- (9) Caut secretară.
 Looking for secretary
 “I am looking for (a) secretary”.

As such constructions are not central for the discussion in this paper, we will not discuss them further, but see Espinal and McNally (2010) for Spanish and Catalan.

2.4. *The Main Condition for Pe-marking*

To summarize the general observations made so far: human definite expressions, i.e. personal pronouns, proper names and definite modified noun phrases are obligatorily *pe*-marked (with the exception of the “bare” definite nouns mentioned above). Specific indefinite noun phrases are optionally *pe*-marked and non-specific noun phrases and non-argumental noun phrases are never marked, as illustrated in Table 2.

The optionality of *pe*-marking for indefinite noun phrases can be described in the following way: if an indefinite noun phrase is *pe*-marked, it must be scopally or referentially specific (see for a unified analysis in terms of “referential anchoring” von Heusinger and Onea, 2008). If it is not *pe*-marked, it can still be specific (or non-specific). This means that *pe* marks specificity, but not obligatorily so. In the absence of operators, i.e. in transparent contexts, *pe*-marking cannot be associated with epistemic specificity (as one might have expected following Fodor and Sag, 1982), but with a weaker function, which we identify as a discourse prominence function. We will elaborate upon this discourse function in the remainder of this paper.

3. Discourse Prominence

So far, we have investigated referential properties such as animacy, definiteness and specificity that have a categorical nature, i.e. they either hold or not. We saw in example (8) above that *pe*-marking in Romanian (like DOM in many other languages) seems to obey additional “weaker” restrictions, at least in the

domain of indefinite noun phrases. We suggest that this weaker constraint is a discourse property gradable in nature, in the sense that it can apply to a greater or lesser extent, rather than in a categorical way.

3.1. Givón's Topic Continuity

Givón (1981, 1983) extensively discusses the graded concept of “topic continuity” (the situation in which the same topic extends over several clauses) with respect to the behaviour of discourse referents across more than one sentence. This behaviour is mirrored by the type of referring expressions used, as illustrated in Figure 1 below. Givón showed that a discourse referent taken up by a zero anaphor is a highly accessible topic and is most continuous, i.e. it is mentioned by several anaphoric expressions in the discourse, while a referent associated with an indefinite NP is less accessible and therefore usually discontinuous.

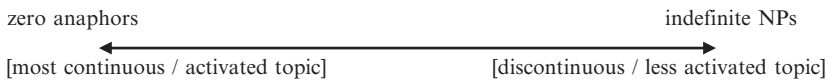


Figure 1. Topic continuity (Givón, 1981)

Assuming that more important referents tend to be more anaphorically accessible and cataphorically persistent, Givón (1981, 1983) proposed the three methods for measuring topic continuity listed in (10), which correlate with the form and type of the referring expression used.

- (10) Three factors of “topic continuity”
- i. *referential distance / look back*
 - ii. *potential interference / ambiguity / competition*
 - iii. *persistence / look forward*

The first factor, (i) “referential distance”, determines how recently an entity has been mentioned, by looking at the sentences on the left of the referent. Givón (1983) showed that the smaller the distance between antecedent and anaphor, the more important or prominent the referent of the anaphor is. The second factor, (ii) “potential interference”, describes the interaction of the descriptive content of the expression with the descriptive contents of similar referring expressions. The observed tendency is that the more descriptive material is given, the fewer are the competitors for a referent. The third factor, (iii) “persistence”, measures how long the entity will remain in the subsequent discourse after it was introduced for the first time. This parameter is generally

less well studied because most theories concentrate on the way in which a referent was mentioned in the preceding discourse (Ariel, 1988; Grosz et al., 1995) and since it is quite difficult to establish the appropriate factors that could influence it. According to Givón (1981), all three factors together determine the activation status of a given referent. We will use two parameters based on Givón's work (1983) to test the activation of the *pe*-marked referents: (i) referential persistence or the number of anaphoric expressions in the following discourse related to the first mention of a referent, and (ii) the topic shift potential. The topic shift potential is a variation of Givón's "topic continuity" concept. It describes the potential of a non-topic to become topic in the subsequent discourse. A referent positively characterized by this feature is also called "pre-topic" (Endriss and Gärtner, 2005) or "secondary topic" (Givón). As topics are generally realized as subjects, postverbal direct objects are no typical topics, but as we will show, *pe*-marked indefinite direct objects signal that they will be reused as topics in the subsequent discourse.⁴

3.2. *The Accessibility Marking Scale*

Ariel (1988, 1990) advocates in favour of the idea that referring expressions mark *different* degrees of accessibility⁵ of the mental representation of their referents. She suggests that speakers choose referring expressions to indicate to their addressees how accessible they consider the mental representations of the intended referents. Accordingly, the speaker uses a referential expression to instruct the addressee to retrieve a piece of information from his memory by indicating to him how accessible this piece of information is to him. For Ariel, all referential expressions code a different and precise degree of mental accessibility, functioning as markers of accessibility. The prediction made by her theory is that, when an entity is less accessible in the memory, the referential marker employed by the speaker to refer to it will be more elaborate (for example a definite (possibly modified) nominal phrase). And conversely, the higher the accessibility of a referent, the more attenuated the referential form chosen by the speaker will be (e.g. a pronoun).

⁴ See also Ionin (2010) and Geist (2010) for the interaction of topicality with specificity.

⁵ The term "accessibility" is different in Ariel's (1988), Lambrecht's (1994) and Chafe's (1979) approaches. Ariel uses the term in a rather general way in the sense of "cognitive availability"; while for Chafe and Lambrecht the term denotes "semi-active" referents only.

The referential expressions distinguished by Ariel are ranked on a continuum, as in (11) below, ranging from highest accessibility markers at one end, which are the briefest and least informative forms (e.g. zero anaphors, pronouns), to the lowest accessibility markers at the other end, which are the most informative and full forms of referring (e.g. proper names, definite descriptions).

- (11) The Accessibility Marking Scale (Ariel, 1990: 73)
 Full name+modifier > full name > long definite description > short definite description > last name > first name > distal demonstrative+modifier > proximate demonstrative+modifier > distal demonstrative+NP > proximate demonstrative+NP > distal demonstrative (-NP) > proximate demonstrative (-NP) > stressed pronoun+gesture > stressed pronoun > unstressed pronoun > cliticized pronoun > verbal person, inflections > zero.

The textual characteristics which are said to impact the accessibility of a given referent are distance, competition, unity and salience. The first two textual characteristics mentioned by Ariel are not relevant for the present analysis of indefinites in Romanian, but we included a subtype of her “unity” notion as our referential persistence parameter. The last characteristic mentioned by Ariel, saliency, is determined by the topic status of the referent which usually stands for the grammatical subject of the sentence. Many studies have showed that arguments encoded as subjects tend to be perceived as more prominent or accessible than arguments realized as direct objects or obliques (Givón, 1983; Brennan et al., 1987; Gordon et al., 1993; Arnold, 1998). Furthermore, if the subsequent mention of a certain referent is realized in the same syntactic position (i.e. parallel position), a pronoun referring to it is preferred (Arnold, 1998; Ariel, 2001; Kehler et al., 2008). Our second parameter, topic-shift, i.e. the strong preference of a referent to become the grammatical subject (i.e. the topic referent) in the subsequent discourse, rests upon these considerations. The referent introduced by a *pe*-marked direct object noun phrase will be taken up by an anaphoric expression in subject (i.e. topic) position in the next two or three sentences, thus violating the parallel position bias.

Even though Ariel’s theory cannot predict how the accessibility of a referent introduced by an indefinite description is, as she does not include this type of referring expression on her scale to signal an even lower accessibility than full proper names and definite descriptions, we will nevertheless keep in mind the fact that accessibility is a graded phenomenon and that different types of referring expressions reflect different degrees of accessibility.

3.3. *The Givenness Hierarchy*

Gundel, Hedland & Zacharski's (1993) Givenness Hierarchy offers an alternative model of referential management in terms of activation, which combines cognitive and pragmatic restrictions in order to give an explanation for the proper use and felicitous processing of referring expressions. Given the correlation between a type of referring expression and a particular cognitive state, for any type of referring expression chosen by the speaker, the interlocutor will be able to restrict (in most cases) the set of possible entities which could be identified as possible referents of the expression used. This is so because any type of referring expression conventionally signals a certain cognitive status which is in turn necessary and sufficient so that the speaker can use this form felicitously. The hierarchy of cognitive statuses (which are properties of mental representations) proposed by Gundel et al. (1993) is given in Figure 2 below, together with some English pronominal forms and determiners. Note that the referring expressions found on Ariel's Accessibility Marking Scale are more numerous and detailed, while the types of referring expressions found on the Givenness Hierarchy are only orientative. However, the Givenness Hierarchy presents an advantage for the present work, as it includes both the simple indefinite article *a* and the indefinite-*this*.

in focus	>	activated	>	familiar	>	uniquely identifiable	>	referential	>	type identifiable
<i>it</i>		<i>that, this</i>		<i>that</i> N <i>this</i> N		<i>the</i> N		indefinite <i>this</i> N		<i>a</i> N

Figure 2. Givenness Hierarchy (Gundel, Hedland and Zacharski, 1993)

The Givenness Hierarchy suggests that the cognitive status of an entity constrains the type of referring form which will be chosen to refer to it. The examples (12a-f) show the relation between a referring expression and the mental activation of the referent it designates:

- (12) a. I couldn't sleep last night. **It** kept me awake.
 b. I couldn't sleep last night. **That** kept me awake.
 c. I couldn't sleep last night. **That dog** (next door) kept me awake.
 d. I couldn't sleep last night. **The dog** (next door) kept me awake.
 e. I couldn't sleep last night. **This dog** (next door) kept me awake.
 f. I couldn't sleep last night. **A dog** (next door) kept me awake.

The hearer of sentence (12f) only has to know what the word “dog” means to understand the least restrictive construction “a dog”. However, the hearer of a

sentence like that in (12a) cannot understand the most restrictive form “it” unless s/he has a unique mental representation of the dog the speaker means and which also has to be in her/his focus of attention. It is the correlation between different cognitive statuses and each type of referring expression that is important in Gundel, Hedland and Zacharski’s (1993) approach, as summarized in the Givenness Hierarchy in Figure 2.

One of the major distinctions between the Accessibility Marking Scale (Ariel, 1988) and the Givenness Hierarchy is that the latter scale is implicationaly related, while on the first scale, a referential expression is individually and separately marked for the degree of accessibility its referent codes (see Gundel, 2010). In other words, for any cognitive status on the Givenness Hierarchy, the associated lexical item codes the status indicated and simultaneously entails all lower statuses (the least restrictive ones, on its right). The unidirectional entailment relations of the Givenness Hierarchy can explain, for example, why the indefinite *this* which codes the higher status “referential” can be replaced by the indefinite article *a*, which codes the lowest status “type identifiable”.

3.4. A First Illustration

We tested the intuition many speakers of Romanian have about the discourse prominent status *pe*-marked constructions retain in a discourse, applying our three parameters to a minimal pair of texts found in two newspapers. We will illustrate the referential continuity of a *pe*-marked referent compared to that of an unmarked direct object referent. The first article in (13) contains an indefinite direct object that was introduced by means of *pe* in the discourse, whereas in the second article (14), the same indefinite direct object occurs without *pe*. The extracts of the two articles relate to the same shooting event in the same way; the only difference being the form of realization of the two objects.

(13) *pe*-marked DO⁶

[0] Neculai Florea, de 40 de ani, viceprimarul satului Horodniceni, și-a pus poliția pe cap după ce l-a împușcat cu un pistol cu gloanțe de cauciuc **pe un tânăr din localitate**.

[0] 40-year-old Nicolae Florea, the vice mayor of the Horodniceni village, angered the police after he shot a **young man from the same village** with a gun with plastic bullets.

⁶ <http://www.obiectivdesuceava.ro/index.php?ids=26841&page=articol>. [visited: February 2009]

[1] Incidentul s-a petrecut în noaptea de 10 spre 11 februarie, la discoteca ce aparține soției viceprimarului Florea și a fost reclamat la poliție în cursul după amiezii, la ora 15:40.

[2] La ora respectivă, **Vasile M., de 24 de ani**, din comuna Horodniceni, **pro** s-a adresat postului de poliție reclamând că **pro** a fost împușcat în picior de viceprimarul Neculai Florea.

[3] La Horodniceni s-a deplasat în aceeași zi o echipă a Serviciului arme, explozivi, substanțe toxice din IPJ Suceava, pentru a elucida cazul.

[4] Din primele verificări efectuate s-a stabilit că în cursul nopții, la discoteca viceprimarului, pe fondul consumului de alcool, a avut loc o altercație, iar Neculai Florea a folosit pistolul cu gloanțe de cauciuc împotriva lui **Vasile M.**, pe care l-a împușcat în picior, rănindu-l.

[5] Viceprimarul Neculai Florea susține că a fost nevoit să facă uz de armă, întrucât a fost agresat **de tânărul în cauză**.

[6] A spus că în cursul nopții de 10 spre 11 februarie, în discoteca administrată de soția lui a izbucnit un scandal între două grupuri rivale de tineri.

[7] “Soția mea m-a chemat și am intervenit ca să liniștesc apele.

[8] Am încercat să stau de vorbă, să-i calmez, dar **băiatul acela pro** m-a lovit în piept și era [...].

[1] The incident took place on the night of February 10th in the discotheque, whose owner is Florea’s wife, while the police were notified at 15:40 in the afternoon.

[2] At that time, **the 24-year-old Vasile M.**, from the Horodniceni village complained to the police that **he** was shot in the leg by the vice-mayor Neculai Florea.

[3] A team of the IPJ Suceava, specialized in weapons, explosive and toxic substances went to Horodniceni to investigate the case.

[4] In keeping with initial findings, it was established that during the night an altercation took place at the vice-mayor’s discotheque due to alcohol consumption and that Neculai Florea used his gun with plastic bullets against **Vasile M., whom** he shot in the leg, hurting **him**.

[5] The vice-mayor Neculai Florea maintains that he had to make use of his gun, as he was shoved by **the mentioned young man**.

[6] He said that on the night of February 10th, a scuffle broke out between two rival groups of young men in the discotheque administered by his wife.

[7] “My wife called me and I came to calm down the situation.

[8] I tried to talk to them, to calm them down, however, **that boy** hit me in the chest and **he** almost [...].

(14) *pe*-unmarked DO⁷

[0] Viceprimarul Neculai Florea, din comuna Horodniceni, este cercetat de poliție după ce în noaptea de sâmbătă spre duminică a împușcat în picior **un tânăr de 24 de ani** la discotecă.

[0] The vice mayor Neculai Florea from the village Horodniceni is verified by the police after he shot **a 24-year-old young man** in the leg in the night from Saturday to Sunday in a discotheque.

⁷ <http://www.9am.ro/stiri-revista-presei/2007-02-13/un-viceprimar-a-impuscat-un-tanar-in-discoteca.html>. [visited: February 2009]

[1] Viceprimarul, care este membru PNG, a scos pistolul pentru a interveni într-o încăierare între tineri, care avea loc în discoteca familiei sale.

[2] El este asociat unic, iar soția sa administrator.

[3] Poliția a stabilit că **tânărul** împuscat, **Vasile Mihai**, pe fondul consumului de alcool, **pro** a fost implicat într-un scandal, iar viceprimarul a intervenit pentru a-l stopa.

(no further co-referential expressions)

[1] The vice mayor, who is a PNG member, took his gun out in order to intervene in a quarrel which started in his family's discotheque between some young men.

[2] He is the owner and his wife the administrator.

[3] The police found out that the **young man, Vasile Mihai**, was shot due to alcohol consumption, and that (**he**) was involved in a scuffle, and that the vice mayor intervened in order to stop **him**.

(no further co-referential expressions)

We summarized the relevant grammatical properties of the two texts in Table 3, where we have listed the anaphoric expressions and the grammatical functions relating to the direct objects. Note that Romanian is a pro-drop language in which the subject can remain phonologically unrealized, as in (13, S2) (see Gramatica Limbii Române, 2005). In the examples below, the elided subjects have been annotated as *pros*. Moreover, Romanian very often uses clitic pronouns (CL) to replace lexical expressions realized as direct and indirect direct objects.

Considering the data in Table 3, we can make the following three observations about the potential effects of *pe*-marking. First, the *pe*-marked direct object in (13) displays a higher referential persistence than the direct object in

Table 3. The discourse prominence / accessibility structure of (13) and (14)

	<i>anaph. expr.</i>	<i>gram. function</i>	<i>anaph. expr.</i>	<i>gram. function</i>
S0	(13) indef. NP. [+pe]	DO	(14) indef. NP [-pe]	DO
S1	–		–	
S2	PN+mod., pro, pro	SUB, SUB, SUB	–	
S3	–		def.NP+Adj.+PN, pro,CL	[SUB, SUB, DO]
S4	PN, CL, CL	DO, DO, DO	–	
S5	def. NP+Adj.	PP	–	
S6	–		–	
S7	–		–	
S8	def. NP, pro	SUB, SUB	–	

(14) which is not preceded by *pe*, because its referent is mentioned more often in the subsequent discourse. More precisely, the DOM-marked direct object is taken up in the next eight sentences nine times, while the referent of the non-*pe*-marked direct object in (14) is mentioned again in the next eight sentences only three times.

Second, the referent of the *pe*-marked form is more likely to become the sentence topic (i.e. the main clause subject) in the following discourse. It is worth noting that in both texts, it is the other man, Neculai Florea, who is the pre-established topic of the discourse, and not the *pe*-marked DO. In (13), the *pe*-marked direct object *pe un tânăr din localitate* (“a young man from the same village”) from S0 becomes the subject and thus the topic of S2, whereas in (14), the non-marked direct object *un tânăr de 24 de ani* (“a 24-years-old young man”) becomes the subject of an embedded clause (coded by “[Sub]”), but not a topic (assuming that topics correlate only with subjects of main clauses).

Third, the special status of the *pe*-marked direct object referent is underlined by its first anaphoric item. In (13), the newly introduced referent *un tânăr* (“a young man”) is taken up in the following discourse by a proper name, while in (14) the referent of the not *pe*-marked direct object is mentioned again by means of the definite NP *tânărul* (“the young man”). A proper name signals a higher activation on Ariel’s Accessibility Marking Scale (1990) than a definite description.

To sum up, the examples above indicate that the *pe*-marked referents behave differently in the following discourse compared to the unmarked ones. This special status of the marked direct objects is reflected (i) by their referential persistence, (ii) by their high topic shift potential, and (iii) by a higher activation that allows referring back to them by a type of referring expression situated high on the accessibility scale, such as a proper name.

4. Questionnaire on Frequency of Anaphoric Links

To gain further support for our hypothesis that *pe*-marked indefinites show a high discourse prominence, we wanted to test the frequency of anaphoric mentions of the *pe*-marked direct objects compared to that of the unmarked objects. Since it was very difficult to find more minimal pairs such as (13) and (14), we asked about 20 native speakers of Romanian to read a sentence and then select between two continuations.

The “trigger”-sentences (S+*pe*) and (S-*pe*) were identical except for the use of *pe* and the accompanying clitic with the direct object in postverbal position

in the first trigger sentence and the absence of the *pe*-marker and of the clitic in the second test item. The continuation Cont-1 vs. Cont-2 differed with respect to the number of anaphoric expressions referring back to the direct object of the first sentence (and the distance of the first anaphoric expression). In Cont-2, on the one hand, the referent of the direct object was mentioned several times immediately after he was introduced in the discourse for the first time. On the other hand, Cont-1 evolved around the referent introduced as a subject in the trigger sentence, thus this referent was the preferred topic for continuation. Another difference between Cont-1 and Cont-2 was that in the former continuation, the referent associated with the direct object of the trigger sentence became a topic (i.e. the grammatical subject), while in the latter it remained a non-topical referent.

Trigger sentence (S+pe)

Albu Ion, de 40 de ani, viceprimarul satului H, și-a pus poliția în cap după ce l-a împușcat cu un pistol cu gloanțe de cauciuc **pe un tânăr** din localitate.

[*Albu Ion, the vice mayor of the H. village, angered the police after he shot a young man from the same village with a gun with plastic bullets.*]

Trigger sentence (S-pe)

Albu Ion, de 40 de ani, viceprimarul satului H, și-a pus poliția în cap după ce a împușcat cu un pistol cu gloanțe de cauciuc **un tânăr** din localitate.

[*Albu Ion, the vice mayor of the H. village, angered the police after he shot a young man from the same village with a gun with plastic bullets.*]

Cont-1

Incidentul s-a petrecut noaptea, la discoteca ce aparține soției viceprimarului și a fost reclamat la poliție în cursul diminetii. Viceprimarul, care este membru PNG, a scos pistolul pentru a interveni într-o încalierare între tineri, care avea loc în discoteca familiei sale. El este asociat unic, iar sotia sa administrator. Politia a stabilit ca **tânărul împușcat, Vasile M.**, pe fondul consumului de alcool, a fost implicat într-un scandal, iar viceprimarul a intervenit pentru a-l stopa. A.I. spune ca si-a cumparat pistolul cu bile de cauciuc, în cursul anului trecut, după ce i s-a stricat pistolul cu gaze pe care-l avea.

Cont-2

Incidentul s-a petrecut noaptea, la discoteca ce aparține soției viceprimarului și a fost reclamat la poliție în cursul diminetii. **Vasile M., de 24 de ani** s-a adresat postului de poliție reclamând că a fost împușcat în picior de viceprimarul A.I. În comuna s-a deplasat în aceeași zi o echipă operativă a IPJ Suceava, pentru a elucida cazul. Din primele verificări efectuate s-a stabilit că în cursul nopții, la discoteca viceprimarului, pe fondul consumului de alcool, a avut loc o altercație, iar viceprimarul a folosit pistolul cu gloanțe de cauciuc împotriva **lui Vasile M., pe care l-a împușcat în picior, răbindu-l**. Viceprimarul A.I. sustine ca a fost agresat **de tânăr**.

[The incident took place during the night in the discotheque whose owner is Florea's wife and was denounced to the police in the course of the afternoon. The vice mayor, who is a PNG member, took his gun out in order to intervene in a quarrel which started in his family's discotheque. He is the owner and his wife the administrator. The police found out that **the young man, Vasile M.**, was because of alcohol consumption, that (**he**) was involved in a scuffle, and that the vice mayor intervened to put an end to it. A.I. says he bought the gun with plastic bullets during the last year, after his gas pistol didn't work anymore.]

[The incident took place during the night in the discotheque whose owner is Florea's wife and was denounced to the police in the course of the afternoon. **24-years-old Vasile M** complained to the police that **he** was shot in the leg by the vice-mayor A.I. A team of the IPJ Suceava went there to elucidate the case. According to the first findings, it was established that, during the night, at the vice mayor's discotheque, an altercation took place because of alcohol consuming and that the vice mayor used his gun with plastic bullets against **Vasile M, whom** he shot in the leg, hurting **him**. The vice mayor A.I. claims that he was aggressed **by the young man.**]

The texts were closely related to the article excerpts in (13) and (14) above. Our prediction was that participants would select the continuation Cont-2 for the trigger sentence (S+pe) more often than for the trigger sentence (S-pe), and that they would select Cont-1 for (S-pe) rather than for (S+pe).

The results of the questionnaire are listed in Table 4 below. They show that for the *pe*-marked direct object, the majority of the participants (17 out of 22) have selected the continuation Cont-2 with more anaphoric expressions. For the non-marked direct object, a slight preference (11 out of 19 participants) for the continuation which contains few anaphoric expressions can be observed.

In sum, our prediction with regard to the preference of referent continuation for *pe*-marked direct objects was confirmed. It seems that *pe*-marking signals a higher referential persistence, while the lack of *pe*-marking does not necessarily signal a lower level of referential persistence. This latter result is compatible with the findings for the specificity effect of *pe*-marking (see section 2.2 above), where *pe*-marking signals specificity, but the lack of it does not necessarily signal non-specificity.

Table 4. Judgments on *pe*-marking and frequency of anaphoric expressions

	Cont-1	Cont-2	Sum
(S+pe)	5	17	22
(S-pe)	11	8	19

5. Web-based Experiment for Prominence with *Pe*-marking

To test our hypothesis that *pe*-marking of indefinite direct objects in postverbal position in transparent contexts signals discourse prominence, we will use the following three parameters of discourse prominence of a discourse referent:

- (15) *Characteristics of a discourse referent that reflect prominence*
- (i) referential persistence;
 - (ii) topic shift potential;
 - (iii) activation (by the type of referring expression).

Our predictions with respect to the *pe*-marked referents are the following: first, the referential persistence of the *pe*-marked referents will exceed that of their unmarked counterparts. Second, case-marked direct objects will become topics in the subsequent discourse. Third, the referent of the *pe*-marked direct object will be taken up by an anaphoric expression with less descriptive material than the referent of the unmarked direct object.

5.1. *The Experimental Setup*

Method

This experiment was designed to test whether the referent of the case-marked object reflects discourse prominence. To have a direct basis of comparison, we simultaneously tested the behaviour of unmarked direct objects under the same conditions.

Participants

23 subjects participated in the experiment. All of them were native speakers of Romanian. They received no incentive for taking part in the experiment. The approximate time needed to complete an experiment was 7 minutes.

Design and Procedure

The methodology used in this experiment was a web-based questionnaire in which participants were presented stimulus items consisting of three-sentence stories each. The first two sentences in each test item (TI for test item) set the context of the story; the third stimulus sentence contained a direct object realized as an indefinite NP.

The participants were asked to read the stimulus sentences and add five natural and logical continuation sentences. This story continuation method

has been used by several linguists and psycholinguists (Garrod and Sanford, 1988; Gernsbacher and Shroyer, 1989; Arnold, 1998) as it has the advantage of combining comprehension and production processes. Although the task was to create new sentences, it required participants to comprehend the stories before providing a continuation. Of particular importance is that their responses were made on the basis of the mental representations they developed while reading the story. Thus, their responses reflect the accessibility of discourse entities.

This method allowed us to investigate multiple issues. First, participants were not restricted to the type of continuation they added, except that it had to be a new sentence and not an elaboration of the last one. This freedom meant that their responses provided information about the way in which they took up the referent again, which referent they mentioned and in what syntactic position.

Materials

Each stimulus item consisted of a three-sentence story like (16), (17) and (18) below. The first two sentences provided the context and contained an individual reference to a character, other than the new referent of the direct object introduced in the third sentence. This first introduced character was the clearly established topic constituent of the story, because it was mentioned at least once in subject position and was the referent the story was about. Although the inclusion of two context sentences made it difficult to control every aspect of these discourses, it provided the far greater advantage of creating a somewhat more natural discourse. In the third stimulus sentence, a second referent was introduced as an indefinite NP in direct object position. The third stimulus item (e.g. (18)) contained an additional last sentence.

The web-based experiment contained two subexperiments with three experimental items each. The stories in the two subexperiments were the same. The only difference was the presence of the *pe* marker preceding the direct object and the presence of the clitic pronoun in subexperiment A and their absence in subexperiment B.

(16) Stimulus item 1:

Aseară a fost extraordinar de cald. Pentru că nu mai rezista în casă, Graur s-a hotărât să se ducă în oraș. Pe drum (l-) a văzut (pe) un copil intrând într-un magazin.

“It was extraordinarily warm outside yesterday evening. Because it was unbearable for him to stay home anymore, Graur decided to go downtown. On his way there he saw (pe)-a child entering a store”.

(17) Stimulus item 2:

Anul trecut când am fost la mare am cunoscut un salvamar. Era tot timpul activ. La sfârșitul sejurului meu, a salvat (-o pe) o fată de la înec.

“Last year when I was at the seaside I met a lifeguard. He was very active all day long. At the end of my stay there, he saved (pe-) a girl from drowning”.

(18) Stimulus item 3:

Oaspeții stăteau neliniștiți în sufragerie, neștiind cu cine să înceapă o conversație. Ana (l-) a văzut (pe) un bărbat stând singur lângă canapea. Între timp, chelnerii aduceau mâncarea.

“The guests were anxiously sitting in the living room, not knowing whom to start a conversation with. Ana saw (pe) a man sitting alone on the couch. Meanwhile, the waiters were bringing food”.

The participants were asked to randomly complete either subexperiment A or subexperiment B. We did not include any filler sentences in the experiments, as the participants did not see any variations in the experiment they completed.

5.2. Results

Three continuations were excluded from the analysis because the participants added an ambiguous or nonsensical continuation ($n=2$) or wrote nothing at all ($n=1$). This left a total of 20 continuations that could be analyzed, 11 for subexperiment A and 9 for subexperiment B.

For each item, we considered the first five main clauses (including subordinate ones, if there were any), coding three aspects of the indefinite direct objects: (i) referential persistence, (ii) their topic shift potential, and (iii) the type of referring expression of the first anaphoric item. On the basis of these three factors we wanted to establish the discourse prominence of the *pe*-marked and unmarked direct objects. Example (19) presents one response from subexperiment A for the test item 2 (TI2), and Table 5 illustrates our coding methods.

(19) Example responses and coding methods from the story continuation experiment

Stimulus Item 2: Anul trecut când am fost la mare am cunoscut un salvamar₁. (Pro)₁ era tot timpul activ. La sfârșitul sejurului meu, (pro)₁ a salvat-o pe o fată₂ de la înec.

“Last year when I was at the seaside I met a lifeguard₁. He₁ was very active all day long. At the end of my stay there, he₁ saved PE-a girl₂ from drowning”.

S1: *M-a mirat ca (pro)₁ a reusit sa o₂ salveze, pentru ca (pro)₁ era un burtos. I was surprised that he₁ could save her₂, because he₁ was a big-bellied man”.*

- S2:** *Dar cum (pro)₁ a vazut-o pe fata₂ ca (pro)₂ striga dupa ajutor, (pro)₁ nu a stat pe ganduri si (pro)₁ s-a dus dupa ea₂.*
 But as soon as **he**₁ saw **PE-girl**₂ screaming for help, **he**₁ did not hesitate and went after **her**₂”.
- S3:** *Fata₂ era inconstienta cand (pro)₂ a fost adusa la tarm.*
The girl₂ was unconscious as **she**₂ was brought to shore”.
- S4:** *(pro)₂ nu avea mai mult de 10 ani.*
She₂ was not older than 10”.
- S5:** *Parintii ei₂ i-au multumit salvamarului₁.*
 “**Her**₂ parents thanked **the lifeguard**₁”.

Table 5. Coding methods for the continuation sentences in (19)

Coding methods	Subject		Object		topic
	refer item / S	per sum	refer item / S	per sum	
S1 (pro ₁ , Cl ₂) (pro ₁) (Sub ₁ , DO ₂) (Sub ₁)	2	2	1	1	Topic ₁
S2 (pro ₁ , NP ₂) (pro ₂) [pro ₁][pro ₁ , pron ₂] (Sub ₁ , DO ₂) (Sub ₂), [Sub ₁], [Sub ₁ , DO ₂]	5	5	3	4	Topic ₁
S3 [def unmod NP ₂] (pro ₂) [Sub ₂] (Sub ₂)	0	5	2	6	Topic ₂
S4 [pro ₂] [Sub ₂]	0	5	1	7	(Topic ₂)
S5 [def mod NP ₃ , pron ₂ , def unmod NP ₁] [Sub ₃ , attr ₂ , IO ₁]	1	6	1	8	(Topic ₃)

We indexed the subject referent of the stimulus item by the index 1 and the direct object referent by 2. We listed the type of referring expression (pro, clitic, personal pronoun and definite modified NP) of the anaphoric expressions of both subject and object referents and added the grammatical function of the anaphoric expressions. Round brackets mark the subordinate clauses and square brackets the main clauses. Referential persistence is measured by items per sentence (item / S) and the sum of all items up to S5. Comparing the sums allows us to see at what stage in the discourse we have more anaphoric expressions referring to the direct object referent than to the subject. In our example (19), this happens in S3. Finally, we verified in what sentence the object referent becomes the subject of a main clause, and thus the topic. In our example (19) this happens in S3.

The first aspect we investigated was the referential persistence of the story's referents. The total number of occurrences of subjects and objects in the five continuation sentences was determined. In calculating the persistence of a referent, we considered all anaphoric mentions of that referent, including those in subordinate clauses.

Topic shift was the second aspect we looked at. For the sake of simplicity, we considered the first instance in which a direct object referent became a subject in a main clause an instance of topic shift. Whether this change was maintained in the subsequent sentences or not, was of no relevance at this point. We were interested which continuation sentence constituted the "turning point" for the direct object to become the topic. Note that the discourse topic in the three stimuli for this experiment was established by introducing one character as the subject of the first sentence, and then referring to this character with a zero or pronoun in the following two sentences. Thus, the subject referent was the entity the stimulus item was about.

In a third step we looked at how the direct object referents were mentioned, i.e. the type of referring expression of each anaphoric form. For each continuation sentence we looked at whether the direct object (if present) was rementioned as a zero (pro), clitic pronoun, proper name, or as a definite modified NP, definite NP.

5.2.1. *Number of Anaphoric References – Referential Persistence*

The first method for measuring the discourse prominence of direct objects was the number of anaphoric references. This method focuses on what is likely to become important in the subsequent discourse and corresponds directly to Givón's (1983) concept of topic persistence. We counted how many times each referent was mentioned in the main and subordinate clauses of the continuation sentences. As several studies have noted that salient referents tend to be picked up more often in the discourse (Givón, 1983; Arnold, 2010), we predict that the persistence of the *pe*-marked referents will exceed the persistence of their unmarked counterparts. We calculated the persistence of the subject referents as well, as we wanted to test how this value correlates with and influences the persistence value of the direct object. We further added the occurrences in each sentence to a sum representing the referential persistence at a particular stage in the discourse (see Table 5 for illustration). Additionally, we calculated the average by dividing the overall sum of all stories by the number of participants and the number of test items (for *pe*-marked direct objects 11 participants and for unmarked direct objects 9 participants). Figure 3 below displays the average number of anaphoric references of the subjects

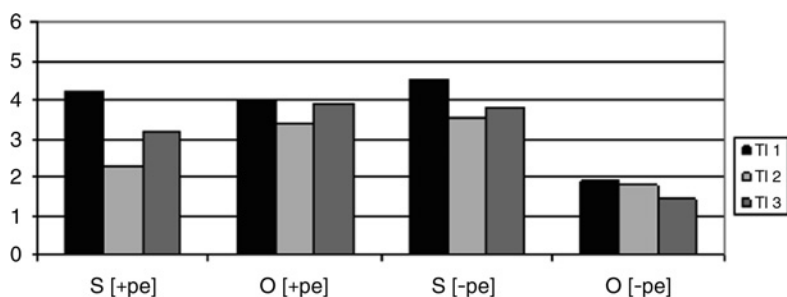


Figure 3. Mean values (sum) of referential persistence of subjects and direct objects up to S5 in subexperiment A (+pe) and subexperiment B (-pe)

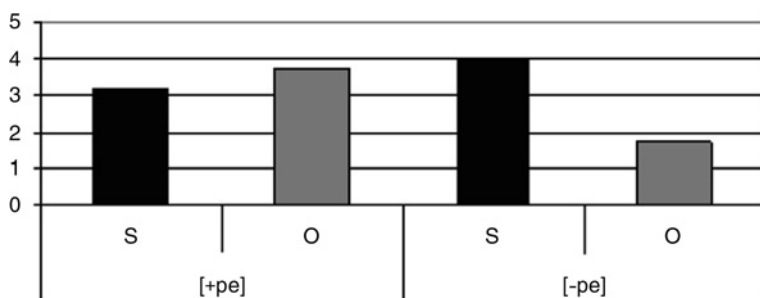


Figure 4. Mean values for referential persistence of subject and object in both subexperiments

and objects up to the last continuation sentence (S5) for both subexperiments (subexperiment A [+pe] and subexperiment B [-pe]).

Our predictions concerning the referential persistence of the direct objects were confirmed as can be witnessed in Figure 3. Summarizing the results we can make an interesting observation with respect to the behavior of subjects and objects. Figure 4 above displays the mean values for the subject and object referents in both subexperiments up to S5. In subexperiment B, in which the direct object was not marked by *pe*, we observed a strong tendency for the referent of the subject of the tested items to be mentioned again more often than the object referent.

Figure 4 moreover indicates that in subexperiment A, the persistence of the referent of the case-marked direct object exceeded even the continuity of the

subject referent. This behaviour is rather unexpected, as it is not consistent with other findings (Arnold, 1998, 1999), which noted that subject referents in non-clefted sentences are associated with an increased tendency to appear in the following discourse. In sum, participants preferred a continuation story which evolved around the referent of the subject, thus taking it up more often, unless the direct object referent was *pe*-marked.

5.2.2. *Topic Shift*

The second factor we tested was the topic shift potential of direct objects. We assume that the subject of a main clause is the topic of the sentence. We disregarded topicalized direct objects, which also function as sentence topics, since we had only two such instances in our data. More precisely, we were interested in whether the referent introduced by the direct object in the test item (in the two subexperiments) was taken up as a subject in one of the main clauses of the continuation sentences. We looked at each of the five continuation sentences until the referent of the direct object occurred for the first time in subject position, i.e. our so-defined topic position (see Table 5, S3, last column). We disregarded potential topic shifts occurring in subordinate clauses because it is generally assumed that subject referents mentioned in subordinate clauses are less prominent than subject referents introduced in main clauses (Cooreman and Sanford 1996; Kaiser, 2000).

Bearing our hypothesis in mind, i.e. that *pe*-marked direct objects show the property of “discourse prominence”, our predictions concerning the topic shift potential of the case-marked direct objects were that, in comparison to their unmarked counterparts, case-marked direct objects will (i) be mentioned more often in subject position in the subsequent text; and will (ii) appear as subjects earlier in the continuation sentences. Given the general tendency for subject referents to be more accessible than object referents (Gordon et al., 1993; McDonald and McWhinney, 1995), and the findings about the naturally occurring discourses which are more likely to be continued with the subject referents than with any other individuals in the sentence (Givón, 1983; Gordon et al., 1993; Arnold, 1998, 1999), we expected the referents of the *pe*-marked direct objects to be mentioned in subject position from the second continuation sentence on.

The data in Figure 5 reveal two patterns. First, the referent of the *pe*-marked direct object displays a stronger preference to become a subject in the continuation sentences (S1-S5) than the referent of the non-*pe*-marked direct object referent. While almost all participants mentioned the referent of the *pe*-marked direct object sooner or later as a subject in the continuation text, the unmarked direct object became a subject in less than 50% of cases. Second, the referent

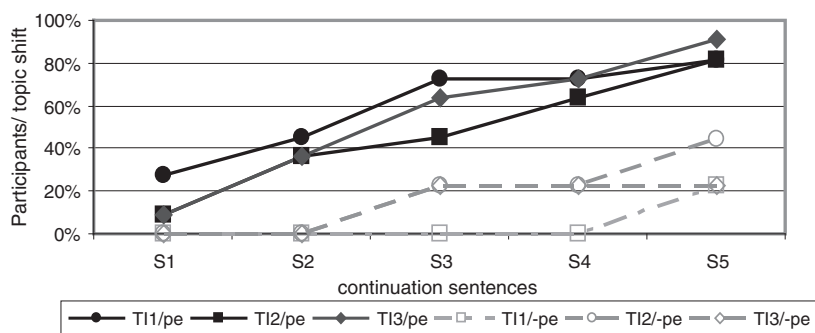


Figure 5. Topic shift for all tested items in subexperiment A and B

of the unmarked direct object was never picked up in subject position in S1 and S2. On the contrary, the referent of the *pe*-marked direct object was referred to again in the first two continuation sentences, even though the rate was not that high (this is presumably due to the preference to continue with the subject referent).

The findings concerning the topic shift potential of direct objects confirmed our predictions, as the referents of the *pe*-marked direct objects displayed a higher expectancy to be mentioned again as topics in a main clause (i.e. in subject position) in comparison to the unmarked ones.

5.2.3. Type of Anaphoric Referring Expression

We looked at the type of anaphoric expressions of the first occurring co-referential expression used to refer to the direct object referents. A body of linguistic and psycholinguistic studies (Arnold, 2010; Givón, 1983; among others) demonstrated that the anaphoric expression used for a particular referent parallels its activation in the discourse. In other words, highly activated referents (in focus in Gundel et al.'s 1993 terminology) are more likely to be referred to with reduced referring expressions, as clitics, zeros or pronouns, whereas referents with a lower degree of activation are expected to be rementioned with full noun phrases (see Ariel's Accessibility Marking Scale in Section 3.2). In line with these findings, we expected the referent of the *pe*-marked direct object to be taken up for the first time with less descriptive material, and the referent of the unmarked direct object to be rementioned for the first time with a longer type of referring expression.

Tables 6 and 7 below display the types of anaphoric expressions used to take up for the first time the referents of the *pe*-marked and unmarked direct objects.

Table 6. The type of referring expression of the first anaphoric item

Ref. Type Sentence	<i>pe</i> -marked direct objects in TI1, TI2, TI3-mean values/items					
	Zero	CL	Pronoun	Def. unmodified NP	Def. modified NP	Sum
S1	3% (1)	9% (3)	(0)	27% (9)	9% (3)	48% (16)
S2	(0)	3% (1)	(0)	15% (5)	(0)	18% (6)
S3	(0)	(0)	(0)	6% (2)	15% (5)	21% (7)
S4	(0)	3% (1)	(0)	3% (1)	3% (1)	9% (3)
S5	(0)	(0)	(0)	(0)	(0)	(0)
Sum	3% (1)	15% (5)	(0)	52% (17)	27% (9)	97% (32)

Table 7. The type of referring expression of the first anaphoric item

Ref. Type Sentence	unmarked direct objects in TI1, TI2, TI3-mean values/items					
	Zero	CL	Pronoun	Def. unmodified NP	Def. modified NP	Sum
S1	(0)	4% (1)	(0)	7% (2)	19% (5)	26% (7)
S2	(0)	(0)	(0)	(0)	(0)	(0)
S3	(0)	(0)	(0)	11% (3)	19% (5)	33% (9)
S4	(0)	(0)	(0)	15% (4)	7% (2)	22% (6)
S5	(0)	(0)	(0)	4% (1)	11% (3)	15% (4)
Sum	(0)	4% (1)	(0)	37% (10)	56% (15)	96% (26)

We listed the mean and absolute values of the rementioned referents in order to compare the two subexperiments with more accuracy, as we had 11 participants completing subexperiment A (with *pe*-marked objects) and 9 participants completing subexperiment B (with unmarked objects). The three test sentences of experiment A were continued by 11 participants such that we had 33 stories with five or more sentences. In both experiments, we had only one direct object referent which was not mentioned in the subsequent discourse again, as the sums show: 32 instances of 33 continuations (97%) for *pe*-marked direct objects and 26 instances of 27 continuations (96%) for unmarked direct objects. Note, however, that *pe*-marked direct objects significantly differ from unmarked direct object in the total number of anaphoric links (*referential persistence*), which is about 4 for *pe*-marked and about 2 for unmarked indefinite direct objects (see Figure 4 above). The two direct object forms differ with respect to their topic shift potential as well, as illustrated in Figure 5.

Only one participant picked up the *pe*-marked direct object in the first continuation sentence with a zero anaphor, which yields the 3% in the first

cell of Table 6. The sum 16 (representing 48%) of the first line in Table 6 shows that almost half of the participants took up the *pe*-marked direct object in the first sentence (S1). The sum 17 (representing 52%) in the column for definite unmodified NPs shows that more than half of the participants have referred back to the *pe*-marked direct object for the first time with an unmodified definite NP. Several other observations can be made on the basis of the two tables above.

First, Tables 6 and 7 indicate that the *pe*-marked referents are mentioned for the first time earlier in the continuation sentences in comparison to the referents of the unmarked direct objects (48% (16) vs. 26% (7) in S1). In contrast to that, the majority of the non *pe*-marked referents are mentioned for the first time in S3 (33%) and the probability that the referent will be mentioned in S4 and S5 for the first time is higher than in the case of the *pe*-marked objects.

Second, as expected, more reduced anaphoric forms are used to refer for the first time to the *pe*-marked objects. There are more clitic anaphoric expressions for *pe* than for non-*pe*, and zero anaphors are never used to take up the referents of the non *pe*-marked direct objects. Yet, the absolute numbers are low in both cases and thus the difference cannot be judged as significant.

Third, we found an overwhelmingly high number of full definite NPs for both direct object types. This observation corresponds to the low activation of direct objects, *pe*-marked or unmarked, in comparison to the subjects. A closer inspection reveals that unmodified NPs prevail for the *pe*-marked referents, whereas for the non-*pe* marked instances modified NPs prevail. We notice a certain tendency towards our prediction that *pe*-marked direct objects have a higher activation and thus the anaphoric link to them needs less descriptive material. However, we had expected more types of referring expressions with less descriptive material for the *pe*-marked referents than we found.

The results of the analysis of the anaphoric forms used to refer back to the direct object referents have two main implications. First, the referents of the marked as well as the unmarked direct objects are taken up for the first time in the continuation sentences more often by means of a definite (unmodified) NP than by means of any other type of NP. Different experiments (e.g. Arnold, 1999; Francik, 1985; Karmiloff-Smith, 1985; Givón, 1983) have demonstrated that speakers use fewer personal pronouns in a discourse when there are more salient individuals that match the gender of the pronoun to avoid ambiguities in reference. Note that we constructed the stimulus sentences in such a way that the two introduced referents (i.e. the subject and the direct object referent) were always of different genders. However, even if they could have opted for more reduced forms, participants chose more specified forms

to refer again to the direct object referents. This finding supports Arnold and Griffin's (2007) claim that not only gender, but also the presence of multiple referents in the discourse reduces the use of less specified types of referring expressions to refer back to one of them. In our case, the first-mentioned subject NP, which is the clearly established topic constituent, inhibits the potential to systematically take up the direct object referent by a more reduced type of referring expression in the first continuation sentence.

Second, we cannot make any consistent generalizations concerning the preferred type of the first anaphoric item for the *pe*-marked and unmarked direct objects. The results showed only minor effects of the direct object form upon the type of referring expression used to refer back to it. In other words, reduced forms (clitics) as well as more descriptive forms (definite unmodified and modified NPs) were used to refer to both: the referent of the *pe*-marked direct object as well as to the referent of the unmarked direct object. We have to assume that an investigation of the type of referring expression of the first anaphoric item involves many different parameters, such as the degree of activation of the antecedent, the competition with other discourse referents, the grammatical function, parallelism constraints, as well as the distance between antecedent and anaphor in terms of linear and hierarchical measures, to name just a few. We therefore think that such an analysis needs much more material and detailed analysis than we can provide in this paper.

5.3. *General Findings of the Experiment*

In sum, the findings from the experiment showed several patterns that are mainly consistent with our predictions. The first two methods for measuring the discourse prominence of the referents of the direct objects, referential persistence and topic shift underlined the privileged status of the *pe*-marked referents. The referents of the *pe*-marked direct objects were taken up earlier in the continuation sentences than their unmarked counterparts (48% vs. 26% in S1). The overall referential persistence of the *pe*-marked referents exceeded even the persistence of the subject referents. Thus, participants preferred a continuation story which evolved around the referent of the subject, taking it up more often, unless the direct object referent was *pe*-marked. Furthermore, participants showed a systematic preference to mention the referents of the *pe*-marked direct objects in subject position up to the last continuation sentence (more than 80%), while the unmarked referents were mentioned in subject position in the continuation sentences in less than 49% of the cases.

The findings of the third measure factor showed that case-marked and unmarked direct objects are referred back to with almost the same types of

referring expressions. Shorter anaphoric types of referring expressions (i.e. clitic pronouns) were not preferred to a greater degree for the *pe*-marked direct objects. However, we found a certain tendency to use more definite modified NPs for unmarked direct objects than for *pe*-marked direct objects which might indicate a somewhat higher activation of the *pe*-marked referents compared to that of the unmarked referents.

At a first glance it seems that the findings concerning the anaphoric expressions used to refer back to the direct object referents contrast with the results from the first two measure methods. Several studies (Ariel, 1988; Givón, 1983) mention the type of anaphor used to refer back to an entity, the topic shift potential and the referential persistence of a referent as equally important indicators of the discursive importance or activation of a referent. However, in our experiment, the first two characteristics tested indicate a higher referential prominence of the *pe*-marked referent, whereas the need to use explicit types of referring expressions to take up the marked referents hint at a low activation status of the referent. Similar contradictory findings were reported in experiments by Stevenson et al. (1994) and in Arnold's (2001) Source-Goal experiment. Arnold, for example, found out that most references to the subject (81%) of the sentence were pronominalized, whereas only 21% of references to the objects were mentioned as pronouns. Rather unexpected, however, was the observation that the Goal referent was more likely (85,6%) to be mentioned in the next continuation sentences than the Source (i.e. the subject) referent.

Such results point towards an explanation in which the likelihood of a referent to be mentioned again and its probability to be mentioned with a particular type of referring expression in the subsequent discourse should be kept apart. Indeed, in trying to account for Stevenson et al.'s (1994) seemingly contradictory experimental results, Kehler et al. (2008) sketch out an explanation which differentiates between two types of expectations, namely an expectation towards the subsequent mention of a referent and an expectation concerned with the type of referring expression that a speaker would use to take up that referent again. Kaiser (2010) observed a similar distinction that pertains to the likelihood of pronominalization on the one hand and the likelihood of subsequent mention on the other hand.

We can account for the two types of expectations suggested in the following way: the expectation about the referential type used to refer back to a particular referent is tied to the degree of activation of that referent. Activation is a property of a referent that reflects the influence of different factors such as the syntactic environment of the expression that introduces the referent, the competition with other referents and the distance between the antecedent and the

anaphoric expression (see the discussion in sections 3.2 and 3.3). A high level of activation is mirrored by short, less informative anaphoric expressions, while a low degree of activation is reflected by the use of long and very informative anaphoric expressions. Since we investigated *pe*-marked indefinites realized in a syntactical position that assigns a low activation to its referent (i.e. direct object position), the associated referents did not show a high activation level. Because of the syntactic position of the investigated referents and because they conceptually competed with the referent of the subject, there was no significant difference between the activation level of the referents of the two types of direct objects. We therefore conclude that *pe*-marking does not impact the activation level of its referent.

However, a marked direct object definitely contributes to a higher expectancy of its referent to be mentioned in the subsequent discourse. Several syntactic constructions might be said to favour the referential persistence of a given referent, such as clefted sentences, or other constructions, like *pe*-marking of indefinites in Romanian. The higher likelihood of a referent to be mentioned in the subsequent discourse is not a reflex of the high activation of the referent, but rather represents a mechanism employed by the speaker to link the hearer's attention to an entity which will be further elaborated upon. This second type of expectancy explains the findings in the web-experiment presented above, as it predicts that the *pe*-marked referent will be rementioned with a high probability.

6. Conclusion

In this paper we examined the conditions for *pe*-marking for Romanian indefinite direct objects in a discourse of more than two sentences. We showed that the generally acknowledged factors: animacy, referentiality and specificity cannot alone account for the optionality found for indefinite descriptions in direct object position. In particular, indefinite NPs allow the realization of referential properties such as specificity and wide scope readings, but are also sensitive to the discourse context they appear in, changing the discourse properties of their referents. By means of a story continuation web-based experiment we tested the nature of the prominence of the *pe*-marked referents in plain and transparent contexts along three lines: (i) the referential persistence, (ii) the topic shift potential, i.e. the probability of the direct object referent to become the grammatical subject (topic) in the subsequent discourse and (iii) the type of anaphoric expressions used to pick up the referent.

The results of the web-based experiment revealed the fact that *pe*-marked direct objects (i) are referentially more persistent than the unmarked direct

objects. Accordingly, the prominence of direct objects can be thought of in terms of likelihood that the referent will be mentioned again. The relevant discourse contribution of *pe* is to signal to the addressee that further information about the referent marked in this way should follow, given that all other parameters remain the same. Moreover, *pe*-marked referents (ii) show a systematic preference to become grammatical subjects in the subsequent text, i.e. they become topics.

The findings from (iii), the anaphoric type used to take up the direct object referents again, are more heterogeneous. They do not indicate a clear and robust difference between *pe*-marked and unmarked indefinite NPs. We interpreted this by assuming that *pe* is neutral with regard to the activation status (in the terms of Gundel et al., 1993) of its referent. When being mentioned for the first time, the referents of both direct object types can be said to occupy the same cognitive status in the minds of their interlocutors (whatever status this might be) and other potential competing concepts could have an influence upon the referential expression used to refer to them. It seems that the descriptive content is not crucial for determining whether the referent in question will become the topic constituent or not, even though both might go in the same direction.

The general findings of the experiment led us to the assumption that, from a discourse structuring point of view, a referent can be characterized by at least two dimensions, namely referential persistence and topic shift potential on the one hand and the level of (cognitive) activation associated with it, on the other hand. Referential persistence and topic shift potential are discourse structuring devices which foreshadow that a referent will be mentioned in the subsequent discourse and that it will gain a certain level of prominence. Recent psycholinguistic research has convincingly shown that statistical regularities are observed at different levels of linguistic output, as for example at the phonetic level (Saffran et al., 1996), at the syntactic level (Elman, 1993; Levi, 2008) and at the semantic level (Tabossi, 1988; Bicknell et al., 2008). All these studies bring favourable evidence for the fact that hearers identify frequency patterns in order to predict what is likely to occur in the following context. The referential persistence of the *pe*-marked indefinite descriptions analyzed in this paper shows that language users make use of such regularities at the discourse level as well.

We conclude that these findings strongly suggest two different, although related, notions of discourse prominence: (i) a referential device for structuring the subsequent discourse and (ii) an activation status that interacts with other competing concepts. If our findings concerning *pe*-marking of indefinites in Romanian are right, then we should find similar distinctions in other languages as well. However, before we can further elaborate upon this

distinction we need more data that allow us to get a better understanding of these two discourse prominence notions. A question left unaddressed in this paper is the relation between the property of referential persistence and other referential properties expressed in a sentence, such as definiteness and specificity. If referential persistence signals the referential intention of the speaker to use the introduced referent in the subsequent discourse, this intention will also determine the semantic-pragmatic properties of the expression in the sentence in which it is used. As this issue cannot be resolved for the present, we will leave it for further research.

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