

An experimental study on the discourse properties of Romanian direct objects

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Abstract: Differential Object Marking (DOM) and Clitic Doubling (CD) have been argued to signal prominence of the marked direct object (DO) along various dimensions, such as animacy, referentiality, topicality, affectedness. They have also been shown to mark syntactic prominence in the sense that a marked DO occupies a higher position in the syntactic representation than its unmarked counterpart. This paper investigates whether these mechanisms also signal discourse prominence, measured by two parameters: a) choice of reference and b) topic shift potential. We provide preliminary results from a sentence continuation task that measures the two parameters and we show that marking increases discourse prominence. As it will be seen, a differentiation between two types of marking is crucial, as it is only clitic doubled and differentially marked DOs that exhibit a higher discourse prominence; undoubled but differentially marked counterparts exhibit no increase regarding discourse prominence and fare similarly to unmarked DOs across tasks.

Key words: indefinite direct object, clitic doubling, differential object marking, discourse prominence.

1. Introduction

It has been noted that the form of a nominal expression signals information for sentence semantics (referentiality, Farkas and von Heusinger 2003), for information structure (givenness or familiarity), and for discourse structure (i.e. discourse prominence, Chiriacescu and von Heusinger 2010, 2011). This paper focuses on indefinite direct objects in Romanian and reports on their prominence within discourse by relating it to differential object marking (DOM) and clitic doubling (CD). The two marking mechanisms have been attested as independent phenomena in Romanian, with a converging effect (Stan 2009, Tigău 2010).

Let us firstly observe that with indefinite direct objects both marking mechanisms are optional:

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- (1) a. Ion a vizitat un prieten.
John has visited a friend.
'John visited a friend.'
- b. Ion a vizitat **pe** un prieten.
John has visited DOM a friend.
'John visited a friend.'
- c. Ion **l-a** vizitat **pe** un prieten.
John him.cl-has visited DOM a friend.
'John visited a friend.'

The function of both DOM and CD have been extensively studied for Romanian (Niculescu 1965, Farkas 1978, Dobrovie-Sorin 1994, Pană-Dindelegan 1997, Cornilescu 2001, von Heusinger & Onea 2008, Tigău 2010 a.o.). It is generally assumed that DOM is sensitive to animacy, referentiality, affectedness and topicality, the semantic effect of this type of marking being that a DOMed indefinite acquires a specific reading (Dobrovie-Sorin 1994, Tigău 2010). With respect to its syntax, a DOMed DO has been argued to exit the VP, moving into a higher position (Tigău 2020). Going beyond sentence boundary, Chiriacescu & von Heusinger (2011) examine the effects that differential marking has on the discourse properties of the DOs. A paragraph continuation task showed that marked DOs evince a higher discourse prominence than unmarked DOs in that the former are more prone to being resumed in subsequent sentences and that they are more often resumed as subjects (i.e. they are topic shifters), as opposed to unmarked DOs. In their experiment, however, Chiriacescu & von Heusinger (2011) only focus on unmarked and CDed+DOMed DOs leaving out single, undoubled DOM marked DOs.

In this paper we would like to extend upon their findings and report on an experiment which includes all three types of DOs: unmarked DOs, DOMed DOs and CDed+DOMed DOs, starting from the assumption that each marking mechanism triggers a certain degree of discourse prominence.

The paper is organized as follows: we begin with a few considerations on DOM and CD in Romanian in section 2; we then briefly present the experiment and the main findings reported in Chiriacescu & von Heusinger (2011) in section 3; Section 4 contains a description of the experiment we carried out and comments upon the results; section 5 discusses these results in view of the hypotheses put forth in section 4, and section 6 contains our conclusions.

2. DOM and CD in Romanian

Differential Object Marking and Clitic Doubling represent two distinct, central morphosyntactic mechanisms used to structure the

semantic and syntactic properties of direct objects and to determine their prominence with respect to different scales and configurations. In this section a short overview of the main functions of and the main predictors for DOM and Clitic Doubling in Romanian are presented.

2.1. Differential object marking

The term *Differential Object Marking* was coined by Bossong (1980), who showed that the following features are necessary to identify it: (i) DOM sets up a contrast between expressions possessing the same syntactic function, e.g. they are both DOs; (ii) the contrast must be expressed by means of morphological marking; (iii) the contrast must be accompanied by a difference of meaning. The crosslinguistic investigation of DOM has uncovered, however, an *interplay between morphology and syntax* in the assignment of DOM, leading to a threefold division of languages: a) languages which mark the object (e.g. Persian, Spanish, Romanian); languages where the head-verb is marked, displaying an Object Agreement marker (e.g. Kiswahili apud López 2012: 133ff); c) languages where both the object and the head verb are marked.

It is generally assumed that a more prominent direct object is more likely to be marked than a less prominent one. The prominence status is determined by interacting prominence hierarchies or scales, such as the Animacy / Person (Comrie 1989, Croft 1988, Silverstein 1976), the Referentiality Hierarchy (Comrie 1989, Croft 1988, Silverstein 1976, Aissen 2003), the Topicality Hierarchy (Dalrymple and Nikolaeva 2011) or the Affectedness Hierarchy (Naess 2004, Kizilkaya 2021).

Differential object marking (DOM) has been acknowledged as an essential typological property of Romanian. Historically, as shown by Hill and Mardale (2019, 2021)², the DOM marker PE is the descendent of the former allative preposition (*s)pre* 'to', which underlies modern Romanian PE (on). This preposition underwent a process of downward reanalysis, losing its prepositional role and, instead of c-selecting a DP, turning into a K head in the projection of the complement itself. It may be shown that in Modern Romanian K is a spell out of a syntactic [person] feature (Cornilescu *et al.* 2017, Tigău 2020).

DOM has been argued to mark prominent direct object DPs. DO prominence is usually calculated in relation to the Animacy and

² Hill and Mardale (2019) propose a downward reanalysis of PE from a locative preposition (P) to case marker (K) and further to a marker of discourse agreement on the nominal determiner (D): P>K>D. The three stages of reanalysis are argued to trigger various ways of feature-checking mechanisms inside the marked DO: K-PE has a valued discourse feature that foregrounds the marked DP and disallows CD; D-PE bears an underspecified discourse feature which needs CD for valuation. Hill and Mardale (2019) also notice that K-PE is productive in Old Romanian, while the D-PE is pervasive in Modern Romanian and claim that this diachronic shift from K-PE to D-PE is determined by the rise and spread of clitic constructions in the language.

the Definiteness scales (Aissen 2003), with the general understanding that DOs ranging high on these scales are suitable candidates for marking (e.g., human or animate direct objects may be differentially marked, while inanimate ones may not; definite pronouns).

2.2. Clitic Doubling

Romanian is a CD language, which means that DOMed DOs may be additionally doubled by pronominal clitics (see 1c). CD is obligatory only for personal (and reflexive) pronouns³ and there are marked preferences in the occurrence of CD with different types of nominals (discussed below). Several aspects of the DOM+CD construction have constituted a much debated topic in the Romanian and Romance literature. Among these, there are the following: 1) case assignment to the PE marked phrase and to the clitic; 2) the status of the PE-phrase as to the distinction argument *vs* adjunct; 3) semantic and pragmatic properties of the DOM+CD construction.

In this paper we only focus on the effect that the mechanisms of DOM and CD have on marked DOs regarding their discourse prominence. In this respect, we extend on Chiriacescu and von Heusinger (2011) and present the preliminary results of an experiment on Romanian indefinite direct objects.

3. Previous studies

Chiriacescu and von Heusinger (2011) study the discourse properties of Romanian CDed+DOMed indefinite DOs arguing that the DOM marker PE ‘on’ triggers discourse prominence in the sense that: a) marked DOs are more referentially persistent than their unmarked correspondents; b) marked DOs are more prone to becoming topics in subsequent discourse; and c) marked DOs are resumed less often by means of modified nominals than their unmarked counterparts. Chiriacescu and von Heusinger (2011) consequently conclude that DOM functions as a signal to the hearer that further information about the referent contributed by the marked DO will follow.

Chiriacescu and von Heusinger (2011) carry out a sentence continuation experiment testing the frequency of DO resumption and comparing marked and unmarked DOs in this respect. Their respondents were required to provide five continuation sentences to three test items, which consisted of three-sentence scenarios each. The

³ Politeness pronouns evince a similar behaviour to personal pronouns: *dumneata*, *dumneavoastră* (you) (GALR, 2005: 132)

(1) Vă rog pe dumneavoastră.
You help.I DOM you.
'I am asking you.'

scenarios patterned similarly, with the first two sentences supplying a background context and introducing a referent which functioned as the established topic constituent of the story. The third sentence in the scenario contained an indefinite direct object which had been either CDed+DOMed or left unmarked. Example (2) contains a test item:

(2) 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. (Chiriacescu and von Heusinger 2011: 317)
'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 **(DOM)-a child** entering a store.'

On analyzing the continuations provided by respondents, Chiriacescu and von Heusinger (2011) discovered that marked DOs exhibited referential persistence in that they were more often resumed in the subsequent sentences than their unmarked counterparts, surpassing at times even the continuity of the subject. On the other hand, test items containing unmarked DOs revealed a tendency towards Subject resumption from the part of the respondents. Furthermore, the referents introduced by marked DOs had been resumed earlier in the continuation fragments than their unmarked counterparts (48% vs 26% in S1).

Regarding topic shift, it was established that a marked DO has significantly more chances of being resumed as a subject than unmarked DOs (80%). The authors translate this observation into a greater potential for topic shift from the part of marked DOs. Unmarked DOs are subject to topic shift in less than 49% of the cases.

Finally, Chiriacescu and von Heusinger (2011) also look into the type of anaphoric expressions used by respondents to resume the direct object DP and discover that marked DOs get resumed more often through reduced referring expressions such as null pronouns or pronominal clitics. Unmarked DOs, on the other hand, given that they have a lower degree of activation, are more often resumed through fully articulated nominals (definite descriptions) (Arnold 2010, Givón 1983 a.o.). Note, however, that the absolute numbers are low in both cases and therefore a definite conclusion in this respect is not available.

In their study, Chiriacescu and von Heusinger (2011) only analyze CDed+DOMed DOs and compare these to their unmarked counterparts, without considering the option of having single DOMed DOs, which are also available in Romanian. Our aim for the experiment we carried out was to investigate all three types of DOs i.e. unmarked DOs, DOMed DOs and CDed+DOMed DOs, working under the hypothesis that each of the two marking mechanisms contributes

to prominence independently and that we should be able to witness a continuum of prominence with unmarked DOs placed at the lower end of this continuum, followed by DOMed DOs and by CDed+DOMed DOs respectively, the latter ranging as the highest on this prominence continuum. The next section extends upon this working hypothesis and the experiment as such.

4. An experiment with indefinite Direct Objects

In this experiment we started from the hypothesis that both DOM and CD contribute independently to increasing the discourse prominence of (in)definite direct objects. Building on Chiriacescu & von Heusinger (2010, 2011), who discuss a difference with respect to prominence between CDed+DOMed indefinites and unmarked ones, we extend their findings to the following prominence scale:

- (3) Unmarked indefinites > DOMed indefinites > CDed+DOMed indefinites > CDed+DOMed definites

In order to test our proposal, we conducted an experiment based on a sentence continuation task with indefinite direct objects.

4.1. Method and materials

The experiment we carried out is based on a production task, respondents being required to continue small scenarios by adding one suitable sentence of their own. We built 16 scenarios consisting of two sentences each: the first sentence in the scenario supplied an informational context for the second sentence, which introduced two human referents. The first human referent was introduced by means of a proper name occupying the subject position and the second referent was supplied by means of a descriptive nominal (either an indefinite or a definite noun), functioning as a direct object. For each of the 16 scenarios we varied the DO type, thus obtaining $4 \times 16 = 64$ test items featuring unmarked indefinite DOs, DOMed indefinite DOs, CDed+DOMed indefinite DOs, and CDed+DOMed definite DOs respectively. An example of a tested scenario including the four possible variants may be found in (4):

- (4) Sentence 1: Afară era un frig groaznic și ploua cu găleata.
Outside was a cold terrible and raining with bucket.the
'It was terribly cold outside and it was raining heavily.'

Sentence 2: a. Ion văzu **un vecin** ducând gunoiul.
John saw a neighbour taking trash
'John saw a neighbor taking out the trash.'

- b. Ion văzu **pe un vecin** ducând gunoiul.
John saw DOM a neighbour taking trash
'John saw a neighbor taking out the trash.'
- c. Ion **îl** văzu **pe un vecin** ducând gunoiul.
John him.cl saw DOM a neighbour taking trash
'John saw a neighbor taking out the trash.'
- d. Ion **îl** văzu **pe vecin** ducând gunoiul.
John him.cl saw DOM neighbour taking trash
'John saw the neighbor taking out the trash.'

In example (4) above, variant (a) contains the unmarked indefinite DO *un vecin* (*a neighbour*). This nominal is differentially marked in (b) and further clitic doubled in (c). Variant (d) contains the clitic doubled and differentially marked definite counterpart⁴.

The 64 test items thus obtained were distributed across four presentation lists using the Latin square method for an even distribution such that no item occurred more than once on a list. Furthermore, all the conditions were equally distributed across lists (4 items/condition/list).

To each list we added 12 fillers. These were similar to the test items in the sense that they included two-sentence scenarios, which the respondents needed to continue by adding one sentence, but, unlike the test items, they either continued only one argument (the subject), or a subject and a prepositional object, or a ditransitive verb allowing an external argument and two internal arguments. See examples below:

- (5) La hanul irlandez se cânta live in fiecare seară.
At pub Irish REFL sang live in every evening
'There was live singing at the Irish pub every evening.'

⁴ Please note that the direct object *pe vecin* (DOM neighbour) in (4d) counts as a definite nominal even if no definite article is visibly marking it. This is an effect which has been generally noticed with Romanian prepositions assigning the accusative (with the exception of preposition *cu* (*with*)) (i). The definite article may, on the other hand, show up if the nominal exhibits some modification (ii):

- i. Am vorbit despre școală/*școala.
Have.we talked about school/*school.the
'We talked about school.'
- ii. Am vorbit despre școala de altădată.
Have.we talked about school.the of old times
'We talked about the school in the past.'

Interestingly, the direct object in (4d) may bear a definite article but, in this case, the differential object marker *pe* needs to be dropped:

- iii. Ion văzu vecinul ducând gunoiul.
John saw neighbor.the carrying trash
'John saw the neighbour taking out the trash.'

Darius dormea cu capul pe o masă.
 Darius slept with head.the on a table
 ‘Darius was sleeping with his head on a table.’

- (6) La festival atmosfera era incendiară.
 At festival atmosphere was explosive
 ‘The atmosphere at the festival was explosive.’

Radu fusese lovit de un turist cu o sticlă de bere.
 Radu had been hit by a tourist with a bottle of beer
 ‘Radu had been hit with a bottle of beer by a tourist.’

- (7) Biserica fusese plină în acea duminică.
 Church.the had been full in that Sunday
 ‘The church had been full that Sunday.’

Achim îl lăudă pe preot vecinilor de la bloc.
 Achim him.cl praised DOM priest neighbours.DAT of block of flats
 ‘Lit. Achim praised the priest to his neighbours.’

In the end, each of the four lists consisted in 16 test items and 12 fillers, amounting to 18 scenarios altogether. We further randomized these scenarios and made sure that no two items testing the same conditions followed one after the other. Each list was then formatted with Google forms as short-answer questionnaires in such a way that the respondents could only see one item at a time and could not browse through the form.

4.2. Participants

The questionnaires were answered to by 84 native speakers of Romanian, most of whom were students of the University of Bucharest, who took part in the experiment for course credit. The average age of the participants was 20.4 and they were all unaware of the aim of our study. Each speaker answered one questionnaire only.

All questionnaires were manually verified and all answers (84x18=1512) were annotated. Some of the answers were discarded given that respondents had failed to provide a continuation (e.g. had only entered a full stop or a dash as a continuation.)

4.3. Annotation

Each item in the questionnaires was annotated with a view to specifying:

a) The referent(s) that had been taken up in the continuation sentence: these could be the subject, notated as Referent_1, the direct object, notated as Referent_2, or the oblique argument in the fillers

featuring ditransitive verbs, which we notated as Referent_3. If any of the arguments introduced in the scenarios had been resumed in the continuation sentence, then 1 was inserted, otherwise 0 was entered.

b) The lexical form used for a referent resumed in the continuation sentence. EN, for instance, captured the fact that a proper name had been employed to take up the respective referent; other annotations showed that a referent could be resumed through a personal pronoun (PersPron), a demonstrative pronoun (DemPron), null pronoun, definite description etc. N/A (i.e. ‘does not apply’) was used in those situations where a referent had not been resumed in the continuation sentence.

c) The syntactic function of the resumed referent e.g. Subject, Direct object, Oblique object etc.

d) The last column indicated the relative order in which the referents had been resumed in the continuation sentence.

In Table 1 below, the second row, for instance, describes the continuation provided by one of the respondents for the item coded A1 (i.e. a test item containing an unmarked indefinite DO), which was found in Questionnaire 1: it seems that the subject Referent was resumed in the continuation sentence as a proper name functioning as a subject. The direct object was also resumed as a definite description functioning as a direct object. Referent 2 followed Referent 1 in this continuation sentence.

The last row of the table shows that Referent 1 was this time taken up by means of a proper name functioning as a direct object, being superseded by referent 2, which was expressed through a definite description and which functioned as a subject. The order has also changed, with referent 2 preceding referent 1.

Questionnaire	Item	Respondent	Referent_1	Form_1	Rolle_1	Referent_2	Form_2	Rolle_2	Referent_3	Reihenfolge
Q1	A1		1 EN	Subject		1 Definite DP	Direct object		0	1,2
Q1	A1		1 EN	Subject		1 Definite DP	Oblique object		0	1,2
Q1	A1		1 PersPron	Oblique object		0 N/A	N/A		0	1
Q1	A1		1 EN	Subject		0 N/A	N/A		0	1
Q1	A1		1 PersPron	Oblique object		0 N/A	N/A		0	1
Q1	A1		1 DemPron	Subject		0 N/A	N/A		0	1
Q1	A1		0 N/A	N/A		0 N/A	N/A		0	
Q1	A1		1 EN	Subject		0 N/A	N/A		0	1
Q1	A1		0 N/A	N/A		1 Definite DP	Subject		0	2
Q1	A1		0 N/A	N/A		1 Definite DP	Subject		0	2
Q1	A1		0 N/A	N/A		0 N/A	N/A		0	
Q1	A1		1 EN	Subject		0 N/A	N/A		0	1
Q1	A1		0 N/A	N/A		0 N/A	N/A		0	
Q1	A1		1 NullPron	Subject		1 PersPron	Direct object		0	1,2
Q1	A1		1 PersPron	Oblique object		0 N/A	N/A		0	1
Q1	A1		0 N/A	N/A		1 NullPron	Subject		0	2
Q1	A1		0 N/A	N/A		0 N/A	N/A		0	
Q1	A1		1 PersPron	Direct object		1 Definite DP	Subject		0	1,2
Q4	A10		1 PersPron	Direct object		0 N/A	N/A		0	1
Q4	A10		1 PersPron	Direct object		1 DemPron	Subject		0	2,1
Q4	A10		0 N/A	N/A		1 DemPron	Subject		0	2
Q4	A10		0 N/A	N/A		0 N/A	N/A		0	
Q4	A10		1 EN	Direct object		1 Definite DP	Subject		0	2,1

Table 1: Data annotation

4.4. Results

4.4.1. Subject *vs* DO

Firstly, when comparing the frequencies in resumption for the subject DP (Ref_1) and for the direct object, we noticed that there is no significant correlation: the scores recorded for Ref_1 do not correlate with those for the variable Ref_2 ($r=0.016$, $p=0.555$). In other words, obtaining scores of 1 for Ref_1 does not increase the probability of getting scores of 1 for Ref_2 (the same goes for the 0 scores). When comparing the scores recorded for the two variables Ref_1 and Ref_2 we get $p=0.000$, which means that these means are different from a statistical point of view. The mean obtained for the variable Ref_1 is significantly higher than the one obtained for Ref_2 ($0.70 > 0.58$), which shows a propensity from the part of the respondents to resumed the subject in continuation sentences. Consider:

We employed t test for paired samples:

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Referent_1	.70	1287	.458	.013
Referent_2	.58	1287	.493	.014

	N	Correlation	Sig.
Pair 1 Referent_1 & Referent_2	1287	.016	.555

The Sig. value in the table above indicates that there is no significant correlation between the answers given for variable Ref_1 and those supplied for Ref_2.

	Paired Differences						t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Pair 1 Referent_1 - Referent_2	.119	.667	.019	.082	.155	6.390	1286	.000	

Secondly, our respondents resorted to a variety of lexical items when resuming the direct object. Table 2 below presents the exact numbers: in the 1287 tokens⁵ obtained after the removal of the faulty answers, the DO nominal was resumed 754 in total. There seems to be

⁵ Please note that certain tokens had to be discarded as explained earlier so that from a total of 1366 tokens, 1287 remained and entered the analysis.

a general preference for resuming all DO types either through personal pronouns or as definite descriptions.

Lexical category used to resume the DO	DO type				Total
	unmarked indefinite	DOMed indefinite	CDed+DOM indefinite	CDed+DOM definite	
Proper name	0	1	0	1	2
Personal Pron.	72	76	67	78	293
Null Pron.	18	11	21	15	65
Demonstrative Pron.	17	21	24	22	84
Definite DP	72	71	84	83	310
Indefinite DP	1	0	0	0	1
Total	180	180	196	199	754

Table 2: Lexical categories used by respondents to resume the DO, raw numbers

4.4.2. Subject *vs* different types of DOs

When it comes to how often different types of DOs get resumed, we may notice a preference for taking up CDed+DOMed DOs in the continuation sentences (196/199 for CDed+DOMed DOs *vs* 180 for unmarked and DOMed DOs):

We have also calculated the percentages corresponding to the numbers above, by relating these to the number of tokens featuring the respective DO type. The following values were obtained: As already stated, there is a visible bias towards resuming the clitic doubled indefinite and definite DOs, which shows that these nominals enjoy a higher discourse prominence for our speakers, in line with our expectations.

Unexpectedly, however, DOMed DOs seem to fare similarly to their unmarked counterparts regarding resumption in the continuation sentences. This goes against our hypothesis according to which DOM should make the DO more prominent than the unmarked correspondents.

Lexical category used to resume the DO	DO type			
	unmarked indefinite	DOMed indefinite	CDed+DOM indefinite	CDed+DOM definite
Proper name	0	0,30%	0	0,31%
Personal Pron.	22,36%	23,45%	20,80%	24,29
Null Pron.	5,59%	3,39%	6,52%	4,67%
Demonstrative Pron.	5,27%	6,48%	7,45%	6,85%
Definite DP	22,36%	21,91%	26,08	25,85%
Indefinite DP	0,31%	0	0	0
Total	55,90%	55,56%	60,86%	61,99%

Table 3: Lexical categories used to resume the DO, percentages

Let us now compare the resumption of the subject Referent with that of the direct object Referent. Table 4 shows that Referent 1 is clearly the option for take-up in most items. Nevertheless, marking i.e., CD + DOM seems to make the DO more competitive when it comes to resumption as DOs marked in this way get resumed more often in the continuation sentences, almost reaching a similar frequency to Referent 1 resumption:

DO type used in the scenario	Referent 1 resumed in the continuation sentences	Referent 2 resumed in the continuation sentences	Total number of tokens
Unmarked indefinite	222 (68,95%)	180 (55,90%)	322
DOMed indefinite	236 (72,84%)	180 (55,56%)	324
CDed+DOMed indefinite	215 (67,39%)	196 (60,86%)	322
CDed+DOMed definite	224 (69,78%)	199 (61,99%)	321

Table 4: Comparing resumption of Referent 1 and Referent 2

Table 4 counts all tokens where either Referent 1 or Referent 2 appears, including those tokens where both Referents have been resumed. If we differentiate among continuation sentences function of which Referents they take up, the following situation arises (Table 5):

DO type	Ref_1	Ref_1, Ref_2	Ref_2	Ref_2, Ref_1	N/A	Total
Unmarked indefinite	103	91	58	28	42	322
DOMed indefinite	103	99	47	34	41	324
CDed+DOMed indefinite	83	96	65	36	42	319
CDed+DOMed definite	80	105	55	39	42	321

Table 5: Types of continuation sentences

Table 5 shows four possible continuation sentences: a) where only Referent 1 has been resumed; b) where both Referent 1 and Referent 2 have been resumed, with the former preceding the latter; c) where only Referent 2 has been resumed; d) where both referents have been resumed, with Referent 2 preceding Referent 1. Interestingly, in those sentences where only one referent has been resumed (columns 2 and 4 in the table), marking seems to have an impact on resumption: when CDed+DOMed DOs are used in the tested scenarios, the respondents pick them up more frequently in the continuation sentences. Furthermore, in these cases, respondents resume Referent 1 less often than they do in those scenarios where unmarked DOs and DOMed DOs are employed (Notice the significant decrease from 103 to 83/80). This

is in line with our hypothesis according to which CDed+DOMed DOs are more discourse prominent thus counting as serious competitors for Referent 1 when resumption is at stake. What is unusual from the perspective of our hypothesis according to which DOM should also contribute to discourse prominence and therefore make DOMed DOs more suitable for resumption (than their unmarked correspondents), is that tokens containing DOMed DOs actually fare the worst when it comes to being resumed in continuation sentences. We need to probe further into the possible causes of this unexpected result.

Another result comprised in Table 5 concerns those continuation sentences where both referents have been resumed: As may be noted, the preferred order in most cases is one in which Referent 1 precedes Referent 2 irrespective of the type of DO employed in the respective scenarios. The continuation sentences where Referent 2 precedes Referent 1 roughly represent a third of those sequences featuring the opposite referent order.

Statistical tests strengthen the observations above:

a) **unmarked DOs:** the t test on paired samples (Ref_1 and Ref_2) for this category of objects shows that there the scores recorded for variable Ref_1 do not correlate with those recorded for Ref_2 ($r = -0.055$, $p = 0.327$). Thus getting scores of 1 on variable Ref_1 does not increase the probability of getting similar scores for Ref_2 (the same goes for scores of 0). When comparing the means of scores recorded for the two variables Ref_1 and Ref_2 on this experimental situation, we obtain a $p = 0.000$, which shows that the means are statistically different. The mean obtained for Ref_1 is significantly greater than the one obtained for Ref_2 ($0.70 > 0.54$). The t test on paired samples shows that the mean of scores obtained for variable Ref_1 are higher than those obtained for Ref_2 ($t(321) = 3.99$, $p = .000$, $d = .22$.)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Referent_1	.70	322	.461	.026
	Referent_2	.54	322	.499	.028

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Referent_1 & Referent_2	322	-.055	.327

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Referent_1 - Referent_2	.155	.698	.039	.079	.232	3.994	321	.000

b) **DOMed DOs:** similarly to the previous experimental situation (unmarked DOs), the statistical tests shows that the scores obtained for Ref_1 do not correlate with those obtained for Ref_2 ($r=0.030$, $p=0.588$). On comparing the means for the scores on the two variables, we obtain $p=0.000$, which shows that the means are statistically different. The mean recorded for the variable Ref_1 is significantly higher than the one obtained in the case of Ref_2 ($0.73 > 0.56$) ($t(323) = 4.64$, $p= .000$, $d= .26$.) The difference, although statistically different, is medium-low (Cohen 1988).

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Referent_1	.73	324	.445	.025
	Referent_2	.56	324	.497	.028

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Referent_1 & Referent_2	324	.030	.588

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Referent_1 - Referent_2	.170	.658	.037	.098	.242	4.647	323	.000

c) **CDed+DOMed DOs:** just like with the first two experimental situations, the statistical test reveals no correlation between the scores obtained for the two variables ($r=0.010$, $p=0.864$). However, when comparing the means of these scores, we obtain $p=0.098$, which shows that these means are not statistically different. The mean obtained for the variable Ref_1 is not significantly higher than the one obtained for Ref_2 ($0.68 > 0.61$). The t test on paired samples revealed that in this case the means of scores for Ref_1 and Ref_2 are relatively similar ($t(319) = 1.66$, $p= .098$, $d= .09$.)

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Referent_1	.68	320	.469	.026
	Referent_2	.61	320	.488	.027

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Referent_1 & Referent_2	320	.010	.864

Paired Samples Test

Pair 1	Referent_1 - Referent_2	Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
		.063	.674	.038	-.012	.137	1.660	319	.098

4.5. Syntactic functions

Let us now look at the syntactic functions that those expressions resuming Referent 2 in the continuation sentences have. As Table 6 shows, when resumed, Referent 2 mostly surfaces as a subject, with the next preferred syntactic function of direct object. CDed+DOMed indefinites seem to have the highest potential for topic shift, shifting as subjects in the continuation sentences even more often than definite DOs.

DO type in the scenario	Subject in cont. sent.	Direct Object in cont. sent.	Oblique Object in cont. sent.	Prepositional Object in cont. sent.	Total
Unmarked indefinite	84	52	19	24	180
DOMed indefinite	80	59	18	23	180
CDed+DOMed indefinite	97	51	23	26	196
CDed+DOMed definite	89	54	24	32	199

Table 6a: Syntactic functions of Ref_2 in continuation sentences, raw numbers

DO type in the scenario	Subject in cont. sent.	Direct Object in cont. sent.	Oblique Object in cont. sent.	Prepositional Object in cont. sent.	Total
Unmarked indefinite	46,66%	28,88%	10,55%	13,33%	100%
DOMed indefinite	44,44%	32,77%	10%	12,77%	100%
CDed+DOMed indefinite	49,48%	26,02%	11,73%	13,26%	100%
CDed+DOMed definite	44,72%	27,13%	12,06%	16,08%	100%

Table 6b: Syntactic functions of Ref_2 in continuation sentences, percentages

4.5.1. DOs resumption: general overview

The contingency table below shows that, when resumed Ref2 is most often resumed as a subject, shifting the topic established in the initial sentence. The next most recurrent syntactic form in which the resumed object surfaces is that of direct object.

		Rolle_2					Total	
		1 Direct object	2 N/A	3 Oblique object	4 Prepositional Object	5 Subject		
Referent_2	0	Count	2	532	0	3	0	537
		Expected Count	90.1	222.4	35.0	43.4	146.0	537.0
		% of Total	.2%	41.3%	.0%	.2%	.0%	41.7%
		Adjusted Residual	-13.3	35.5	-8.0	-8.4	-18.6	
1		Count	214	1	84	101	350	750
		Expected Count	125.9	310.6	49.0	60.6	204.0	750.0
		% of Total	16.6%	.1%	6.5%	7.8%	27.2%	58.3%
		Adjusted Residual	13.3	-35.5	8.0	8.4	18.6	
Total		Count	216	533	84	104	350	1287
		Expected Count	216.0	533.0	84.0	104.0	350.0	1287.0
		% of Total	16.8%	41.4%	6.5%	8.1%	27.2%	100.0%

Table 7: Ref_2*Rolle_2 Crosstabulation: general

The table above shows the standardized adjusted residuals, which measure the difference between the expected results and the results actually obtained, a difference which is adjusted to the sample dimension. The residuals surpassing +1.96 indicate the existence of greater values than the expected ones for the respective item, given that there is no association between the variables. The table above shows Residuals above +1.96 in those cases when the DO is resumed as a direct object, an oblique object, a prepositional object or as a subject. The values associated to the Residuals may be evaluated with respect to their contribution to the values of the statistical test (Chi² in our case). Accordingly, we notice that the DOs are mostly resumed as subjects: the probability of resuming the DO as a subject is sensibly higher than that of resuming it as a direct object and significantly higher than the one associated to oblique and prepositional objects.

4.5.2. DOs resumption: specific cases

When calculating the association between Ref_2 and Form_2 for each of the tested conditions, the statistical tests employed (Pearson Chi-square and Likelihood Ratio) returned values greater than 0.05. Furthermore, none of the tested conditions returned an adjusted residual higher than +1.96. This amounts to saying that we cannot associate a particular syntactic form for the resumption of Ref_2 in any of the four tested conditions, even if in terms of percentages (see Table 6 above), CD+DOM DOs show a slight tendency towards being resumed as subjects.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.848 ^a	12	.716
Likelihood Ratio	8.757	12	.724
Linear-by-Linear Association	2.153	1	.142
N of Valid Cases	1287		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 20.89.

Situatia_experimentală * Rolle_2 Crosstabulation

		Rolle 2					Total
		1 Direct object	2 N/A	3 Oblique object	4 Prepositional object	5 Subject	
Situatia_experimentală 1 unmarked + indefinite DO	Count	52	143	19	24	84	322
	Expected Count	54.0	133.4	21.0	26.0	87.6	322.0
	% within Situatia_experimentală	16.1%	44.4%	5.9%	7.5%	26.1%	100.0%
	Adjusted Residual	-.4	1.3	-.5	-.5	-.5	
2 DOM + indefinite DO	Count	59	144	18	23	80	324
	Expected Count	54.4	134.2	21.1	26.2	88.1	324.0
	% within Situatia_experimentală	18.2%	44.4%	5.6%	7.1%	24.7%	100.0%
	Adjusted Residual	.8	1.3	-.8	-.7	-1.2	
3 CD+DOM + indefinite DO	Count	51	124	23	25	97	320
	Expected Count	53.7	132.5	20.9	25.9	87.0	320.0
	% within Situatia_experimentală	15.9%	38.8%	7.2%	7.8%	30.3%	100.0%
	Adjusted Residual	-.5	-1.1	.6	-.2	1.4	
4 CD+DOM + definite DO	Count	54	122	24	32	89	321
	Expected Count	53.9	132.9	21.0	25.9	87.3	321.0
	% within Situatia_experimentală	16.8%	38.0%	7.5%	10.0%	27.7%	100.0%
	Adjusted Residual	.0	-1.4	.8	1.4	.2	
Total	Count	216	533	84	104	350	1287
	Expected Count	216.0	533.0	84.0	104.0	350.0	1287.0
	% within Situatia_experimentală	16.8%	41.4%	6.5%	8.1%	27.2%	100.0%

Table 8: Ref_2*Rolle_2 Crosstabulation: specific

4.6. Lexical expressions resuming Ref2

Finally, with respect to the kind of lexical category which is mostly resorted to when resuming Referent 2, we have noticed a preference for personal pronouns and definite descriptions. Resumption by means of personal pronouns and other pronominal forms is quite expected and reaches high levels of frequency. However, this trend is steadily maintained irrespective of DO marking or the lack thereof (Tables 9 and 10 below):

Lexical category used to resume the DO	DO type				Total
	unmarked indefinite	DOMed indefinite	CDed+DOM indefinite	CDed+DOM definite	
Pronouns	107	108	112	116	444
Definite descriptions	73	72	84	83	312
Total	180	180	196	199	756

Table 9: anaphoric expressions resuming DO, raw numbers

Lexical category used to resume the DO	DO type			
	unmarked indefinite	DOMed indefinite	CDed+DOM indefinite	CDed+DOM definite
Pronouns	59,44%	60%	57,14%	58,29%
Definite descriptions	40,55%	40%	42,85%	41,70%
TOTAL	100%	100%	100%	100%

Table 10: anaphoric expressions resuming DO, percentages

4.6.1. DO resumption: general situation

The contingency table reinforces the preference for resuming Ref2 either through a Definite DP or a Personal Pronoun:

		Referent_2 * Form_2 Crosstabulation						Total
		Form_2						
Referent_2		1 Definite DP	3 DemPron	4 EN	6 N/A	7 NullPron	9 PersPron	
0	Count	1	0	0	532	0	4	537
	Expected Count	128.9	35.0	.8	222.8	27.1	122.3	537.0
	% of Total	.1%	.0%	.0%	41.3%	.0%	.3%	41.7%
	Adjusted Residual	-16.9	-8.0	-1.2	35.5	-7.0	-15.9	
1	Count	308	84	2	2	65	289	750
	Expected Count	180.1	49.0	1.2	311.2	37.9	170.7	750.0
	% of Total	23.9%	6.5%	.2%	.2%	5.1%	22.5%	58.3%
	Adjusted Residual	16.9	8.0	1.2	-35.5	7.0	15.9	
Total	Count	309	84	2	534	65	293	1287
	Expected Count	309.0	84.0	2.0	534.0	65.0	293.0	1287.0
	% of Total	24.0%	6.5%	.2%	41.5%	5.1%	22.8%	100.0%

Table 11: Ref_2*Form_2 crosstabulation: general

In the table above, Residuals surpassing +1.96 may be observed in those cases where Form 2 is: *Definite DP*, *DemPron*, *NullPron* sau *PersPron*, the highest value being assigned to the forms *Definite DP*. This amounts to saying that there is a sensibly higher probability for a resumed DO to get resumed as a Definite DP than as *PersPron*. This probability furthermore is significantly greater than the probability of resuming the DO through a *DemPron* or a *NullPron*.

4.6.2. DO resumption: specific cases

Statistical tests showed that there is no association between Ref_2 and Form_2 for each of the tested conditions. The table may be, however, interpreted descriptively, revealing a preference for resuming CD+DOM indefinites DOs as subjects, given that this particular situation is the only one in which the adjusted residual gets a positive value +1.4.

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12.746 ^a	15	.622
Likelihood Ratio	13.665	15	.551
Linear-by-Linear Association	1.453	1	.228
N of Valid Cases	1286		

a. 4 cells (16.7%) have expected count less than 5. The minimum expected count is .50.

Situatia_experimentalata * Form_2 Crosstabulation		Form_2							Total
		1 Definite DP	3 DemPron	4 EN	6 N/A	7 NullPron	9 PersPron		
Situatia_experimentalata	1 unmarked + indefinite DO	Count	71	17	0	143	18	72	321
		Expected Count	77.1	21.0	.5	133.0	16.2	73.1	321.0
		% within Situatia_experimentalata	22.1%	5.3%	.0%	44.5%	5.6%	22.4%	100.0%
		Adjusted Residual	-.9	-1.0	-.8	1.3	.5	-.2	
2 DOM + indefinite DO	2 DOM + indefinite DO	Count	71	21	1	144	11	76	324
		Expected Count	77.9	21.2	.5	134.3	16.4	73.8	324.0
		% within Situatia_experimentalata	21.9%	6.5%	.3%	44.4%	3.4%	23.5%	100.0%
		Adjusted Residual	-1.0	.0	.8	1.3	-1.6	.3	
3 CD+DOM + indefinite DO	3 CD+DOM + indefinite DO	Count	84	24	0	124	21	67	320
		Expected Count	76.9	20.9	.5	132.6	16.2	72.9	320.0
		% within Situatia_experimentalata	26.3%	7.5%	.0%	38.8%	6.6%	20.9%	100.0%
		Adjusted Residual	1.1	.8	-.8	-1.1	1.4	-.9	
4 CD+DOM + definite DO	4 CD+DOM + definite DO	Count	83	22	1	122	15	78	321
		Expected Count	77.1	21.0	.5	133.0	16.2	73.1	321.0
		% within Situatia_experimentalata	25.9%	6.9%	.3%	38.0%	4.7%	24.3%	100.0%
		Adjusted Residual	.9	.3	.8	-1.4	-.4	.7	
Total	Total	Count	309	84	2	533	65	293	1286
		Expected Count	309.0	84.0	2.0	533.0	65.0	293.0	1286.0
		% within Situatia_experimentalata	24.0%	6.5%	.2%	41.4%	5.1%	22.8%	100.0%
		Adjusted Residual							

Table 12: Ref_2*Form_2 crosstabulation: general

5. Discussion

The experiment under discussion investigated the discourse prominence of nominal expressions occupying a direct object position. Romanian allows two types of marking with DOs: Differential Object Marking and Clitic Dabling. By manipulating the type of marking, we obtained three conditions for indefinite direct objects: a) unmarked indefinites; b) DOMed indefinites; c) CDed+DOMed indefinites. We added a fourth condition, including CDed+DOMed definite direct objects in order to see whether definiteness has an impact on discourse prominence.

The continuation sentences obtained as a result of our inquiry, were analysed in view of two dimensions, which have been shown to be relevant for prominence: a) choice of reference i.e. which of the two referents mentioned in the scenarios is resumed in the continuation sentences more often; b) topic shift potential i.e. which DO type is more prone to being resumed as subject in the continuation sentences.

With respect to the **choice of reference** parameter, the data uncovered an effect with CDed+DOMed DOs irrespective of whether they are indefinite or definite as these nominals are resumed significantly more often than unmarked and DOMed DOs. An unexpected result was obtained with DOMed DOs, which do not seem to have gained in prominence as a consequence of this type of marking: these DOs

evince the same potential for choice of reference as their unmarked correspondents. One might wonder why this is the case, considering the large body of literature arguing in favour of a semantic effect (specificity, topicality, lack of property reading Cornilescu 2000, Dobrovie-Sorin 1994, Tigău 2010) and a syntactic effect (DOMed DOs move out of the VP, Tigău 2020). One possible explanation might come from the fact that some speakers of Romanian do not seem to accept single DOMed DOs anymore, but always clitic double these DOs: Avram (2014) comments upon the results of an experiment investigating DOM marking with 23 native speakers of Romanian by distinguishing between two categories of respondents: those who always clitic doubled the DOMed DO and those who allowed for both a variant of single DOMed DO along with the preferred CDed+DOMed one. A somewhat similar result is reported by Tigău (2020) who reports on an experiment investigating Romanian ditransitives, where tokens containing single DOMed DOs evince a lower degree of acceptability with speakers.

Nevertheless, a simple search on Google and the CoRoLa corpus (<https://corola.racai.ro>) revealed a plethora of examples containing single DOMed objects (see example 8), which means that single DOM continues as a robust phenomenon in Romanian. An idea for further investigation might be to test respondents prior to the actual experiment in order to find out whether they still accept single DOM and only allow the participation of speakers for whom both DOM and CD+DOM variants are acceptable.

- (8) a. Faptul de a trimite în judecată sau de a condamna pe o persoană,
 Fact.the of to send in trial or of to condemn PE a person
 știind că este nevinovată, constituie o infracțiune...
 knowing that is innocent, constitutes a crime
 ‘Sending someone to trial or condemning an innocent person
 constitutes a crime...’
- b. Haina face pe om.
 Coat the makes PE man
 ‘The coat makes the man.’
- c. Barba face pe filosof
 Beard.the makes PE philosopher
 ‘The beard makes the philosopher.’

The fact that DO marking by means of CD+DOM has an effect with respect to the choice of reference parameter may also be seen when comparing the take-up of Referent 1 (the subject DP in the scenario) with that of Referent 2: CDed+DOMed DOs become serious competitors for Referent 1, the latter being resumed less often in the respective tokens. Again, no effect has been noticed for single DOMed DOs: these nominals evince a similar take-up potential as unmarked

DOs and do not undermine Referent 1 in this respect.

The **topic shift potential**: Simple mean ratios show that the topic shift potential is also influenced by CD+DOM marking: CDed+DOMed indefinite DOs shift as topics in the continuation sentences more readily than unmarked or DOMed counterparts.

Finally, with respect to the kind of lexical category which is mostly resorted to when resuming Referent 2, we have noticed a preference for personal pronouns and definite descriptions generally. Resumption by means of personal pronouns and other pronominal forms is quite expected and reaches high levels of frequency. However, this trend is steadily maintained irrespective of DO marking or the lack thereof.

In view of the results discussed, we may conclude that our hypothesis was only partially fulfilled and that only CD+DOM has an influence on the discourse prominence of DOs. Consequently, instead of conceiving discourse prominence in terms of the scale presented in (3) and repeated here as (9), we might want to reconsider the situation and propose a dichotomy, grouping unmarked and DOMed DOs together and separating these from their more prominent counterparts i.e. CDed+DOMed (in)definites.

- (9) Unmarked indefinites > DOMed indefinites > CDed+DOMed indefinites
> CDed+DOMed definites

The fact that CD seems to have an influence on the discourse prominence of DOs might have to do with the syntactic import of that the pronominal clitic has: given the feature specification of CDed+DOMed DOs, which need to check a [Person] feature, these DPs exit the VP and move to PersonP, probably becoming more prominent by so doing. Unlike CDed+DOMed DOs, DOMed variants only reach the VP periphery, which seems to have no consequences for prominence (for a detailed analysis see Tigău 2020).

6. Conclusion

Summarizing, we may say that the CD+DOM combination clearly contributes to increasing the discourse prominence of direct objects: marked DOs are more often resumed in continuation sentences, having become serious competitors for the subject i.e. this DP remains the most prominent referent but loses significant ground when CDed+DOMed DOs are involved. Secondly, CDed+DOMed DOs are more often resumed as subjects than unmarked and DOMed DOs.

An unexpected result was obtained with single DOMed cases, which do not appear to behave any differently than unmarked DOs. This result might be due to the fact that DOM does not make any

contribution with respect to prominence. Another, possible explanation might have to do with the fact that some of the speakers involved in the experiment do not allow single DOM instances (in line with Avram 2014), which strongly influenced the results. Further investigation in this respect is needed.

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