

# Grammatical and contextual restrictions on focal alternatives

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In semantic theories of focus it is generally assumed that focus generates alternatives to the focused expression which are relevant in the interpretation process. One important issue of such theories is that focal alternatives have to be restricted to the relevant ones, whereby this job is mostly outsourced to the context. In this paper we will argue for an additional grammatical level of alternative-restriction that constrains the set of possible alternatives at the level of the semantic composition, hence making it possible to account for the effect of selectional restrictions, the presence of additional descriptive material predicated about the focused expression or gender restrictions arising from the presence of clitic pronouns. While the mechanism proposed here is cross linguistically relevant, it is illustrated on the case of Romanian clitic pronouns with fronted focused definite noun phrases.

## Introduction<sup>1</sup>

Semantic theories of focus have been motivated by examples in which focus influences the truth conditional content of a sentence, as shown in (1) and (2). They have different truth conditions, because in a situation in which Peter introduced Bill to

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John and Mary while no other introductions have been made, (2) is true while (1) is false.

- (1) *Peter only introduced Bill to [John]<sub>F</sub>*  
 (2) *Peter only introduced [Bill]<sub>F</sub> to John.*

The ability of English *only* to yield different truth conditions depending on the focused element has been dubbed ‘focus sensitivity’ or ‘association with focus.’ Similar effects have been observed in the case of quantificational adverbs like *always* or *usually*, negation, *because*-clauses, counterfactuals, etc.

One of the major semantic approaches to focus is the ‘structured meaning’ approach (Jacobs 1983, von Stechow 1982, 1991, Krifka 1991, 1992 etc.), which assumes that focus leads to a partition of the sentence meaning into two parts: focus and background, and focus sensitive operators are defined as operations on such a meaning partition, e.g. *only* conveys the information that any combination of the meaning of the background with anything else other than the meaning of the focused expression is false.

The second important semantic theory is Alternative Semantics developed by Rooth (1985 and 1992). In this framework focus indicates the presence of alternatives to the focused expression (or to its denotation). Alternative Semantics does not assume a partition of meaning, but introduces an additional level of semantic composition instead: On the first level of semantic composition the ordinary meaning of an expression is computed, while on the second level an alternative semantic value is computed recursively in which the focused expression is replaced by the appropriate alternatives. Focus sensitive items like *only* are defined so that they operate on this alternative level of semantic representation. For a more detailed comparison of the frameworks see von Heusinger (1999) and Beaver & Clark (2008).

Both approaches have the problem that a sentence like (3) doesn’t mean that Peter never saw anything in his life but Jane, i.e. no clouds, no houses, no sunglasses etc., but rather that concerning the people under discussion, Jane is the only one Peter saw.

- (3) *Peter only saw [Jane]<sub>F</sub>*

The general way to deal with this issue is that alternatives to the focused expression (in both approaches) are assumed to be restricted not only by the appropriate semantic type (e.g. individuals or properties) but also by the context. That is, focus sensitive operators only operate on alternatives that are relevant in a given context.

The question arises, however, whether there are other means of alternative restriction at work as well. For instance, one could assume that alternatives for an argument that violate selectional restrictions of the main verb or that are incompatible with descriptive material inside determiner phrases are to be excluded already at the level of semantic composition. The problem is, however, that such a restriction is in all cases weaker than the contextual restriction, in the sense that it can be inferred from the contextual restriction. Assuming that focus sensitive items operate on already con-

textually restricted alternatives, this prior level of alternative restriction might seem superfluous for practical purposes. However the assumption of an earlier, compositional level of alternative restriction may also lead to slightly different predictions. For instance, in the case of clitic pronouns which are not completely grammaticalized for focus-constructions it is predicted that to some extent the gender of the focused expression also constrains possible alternatives to the focused expression. Crucially, this constraint can be stronger than the contextual constraints which may allow alternatives of different gender, so that measurable effects on acceptability are predicted.

In this paper we will propose such an analysis of alternative-restriction and compare the predictions made for a clitic-doubling language like Romanian with experimental results. The experimental results are in line with the prediction made by our proposal, but are not strong enough to confirm it. Therefore, this paper will also leave room for further research both regarding the Romanian data and also cross linguistic evidence.

The structure of this paper is as follows: in Section 1 we present the general problem of the contextual and grammatical restriction of focal alternatives and in Section 2 we elaborate a formal mechanism of restricting focal alternatives at the level of semantic composition. Finally, in Section 3 we present the general picture regarding the distribution of clitic pronouns for focus constructions in Romanian and discuss the experimental results.

## 1. Focal alternatives and contextual restrictions

Krifka (2007: 18) presents a simple definition of focus going back to the central claims of Rooth (1985, 1992): *Focus indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions.*

One side of the story, as pointed out in Krifka (2007), is that such a definition of focus is compatible with any kind of grammatical marking of focus (prosodic highlighting of any kind, syntactic movement, morphological focus markers or even capital letters in written texts), and the semantic (or pragmatic) notion of focus is itself independent of the way it is marked but concentrates on what focus does (cross linguistically). The other side of the story is that the function of focus is nothing but indicating the presence of alternatives relevant to the interpretation of the expression under discussion. If we accept this definition, no matter what pragmatic or semantic use of focus we want to deal with, we may not attribute focus itself any other semantic contribution than indicating the presence of alternatives.

Focus can be used in a number of semantic or pragmatic ways, i.e. to mark the answer to a *wh*-question, to mark a contrast, to mark exhaustivity, to generate scalar implicatures, to mark the scope of a focus sensitive operator, etc. According to the view assumed here, all these uses must be in some way directly related to the function of focus indicating the presence of alternatives. In this section we present one particular

(and widely accepted) theoretical approach to such a unified treatment of focus, which assumes exactly such a semantic contribution of focus, namely the framework proposed in Rooth (1992), also known as Alternative Semantics.

First, we present the general mechanism of alternative generation. In Rooth (1992) a complete formal mechanism is presented which will be used as a background in Section 2 of this paper, but at this point we will only discuss the general idea and leave the formal representation aside. For a more detailed and formal introduction, also see von Heusinger (1999: Chap. 4, 2007) or Beaver & Clark (2008: Chap. 2). In the next section we present the general idea of modelling different uses of focus based on generated focal alternatives and contextual restriction. Finally we will discuss an additional mechanism of restriction of focal alternatives at the level of semantic composition.

### 1.1 Focal alternatives

Alternative Semantics distinguishes between the ordinary and the alternative meaning of an expression. The ordinary meaning of an expression is its lexical entry or the compositional meaning derived from the lexical or compositional meanings of its constituents. At this level, the meaning of a focused expression and the meaning of a non-focused expression cannot be distinguished. The alternative meaning of an expression is an additional level of meaning representation: the meaning of non-focused expressions is a set containing their ordinary meaning, while the meaning of a focused expression is a set containing all entities of the same semantic type as the focused expression. If the focused expression is a name, its alternative meaning will be a set containing all individuals. If the focused expression is a noun denoting a property, its alternative meaning will include all properties, etc. The alternative meaning of a complex expression containing a focused and a non-focused expression, is a set in which the non-focused expression is combined with all alternatives one after the other.

For example in (4) and (5), the ordinary meaning of *John*, regardless of whether *John* is focused or not, is the individual called *John*, or simply John. The alternative meaning of *John* in (4) is {John'} since *John* is not focused, while in (5), where *John* is focused, its alternative meaning is a set containing all possible alternatives to John: {John', Mary', Jane'...}. Similarly, the ordinary meaning of *sleeps* is the event of sleeping, while the alternative meaning is {sleeps'} if the expression is not focused as in (5) and a set containing all properties if the expression is focused as in (4): {sleeps', walks', whistles', red', human' etc.}.

(4) *John* [*sleeps*]<sub>F</sub>

(5) [*John*]<sub>F</sub> *sleeps*.

Combining these two expressions leads to one single ordinary meaning, regardless of whether any of these expressions are focused, namely that John sleeps. The alternative meaning of the two examples however differs: if *sleeps* is focused we get {John sleeps,

John walks, John whistles etc.}, while if *John* is focused we get {John sleeps, Mary sleeps, Jane sleeps etc.}. The procedure is summarised in Table 1.

Table 1. Ordinary and alternative meaning

Expression	Ordinary Meaning	Alternative Meaning
<i>John</i>	John	{John'}
[ <i>sleeps</i> ] <sub>F</sub>	Sleeps	{sleeps', whistles', walks'...}
<i>John</i> [ <i>sleeps</i> ] <sub>F</sub>	John sleeps.	{John sleeps, John walks, John whistles...}
[ <i>John</i> ] <sub>F</sub>	John	{John', Mary', Jane'...}
<i>sleeps</i>	Sleeps	{sleeps'}
[ <i>John</i> ] <sub>F</sub> <i>sleeps</i> .	John sleeps.	{John sleeps, Mary sleeps, Jane sleeps...}

## 1.2 Focus presupposition and focus interpretation

In the framework of Alternative Semantics focus not only generates alternatives, but also triggers a presupposition that a subset of these alternatives is available in the context. This is achieved in two steps: first, all possible alternatives are generated and second, the set of alternatives is restricted in the context. In Alternative Semantics it is never the alternative meaning itself that plays a role, but always the contextually restricted set; in other words: the alternatives that are available in the context and which satisfy the presupposition. This allows for a proper treatment of a number of uses of focus. This is illustrated on the question-answer paradigm and the case of *only*.

One of the most prominent uses of focus is to mark the answer to *wh*-questions as in (6) or (7). Alternative Semantics models this by assuming that the meaning of a *wh*-question can be captured as a set of possible answers, as shown in (8). This is intuitive, since the question signals that for the speaker some answers are open and he would like to know which of them are true (according to the hearer).

- (6) *Who did Peter kiss?*  
*Peter kissed* [*Mary*]<sub>F</sub>.
- (7) *What did Peter do to Mary?*  
*Peter* [*kissed*]<sub>F</sub> *Mary*.
- (8) *Who did Peter kiss?* = {Peter kissed Mary, Peter kissed Jane,  
 Peter kissed Julia etc.}
- (9) *Who did Peter kiss, Mary or Jane?* = {Peter kissed Mary, Peter kissed Jane}

Theories diverge with respect to the exact way in which possible answers are to be modelled, e.g. whether true or possible answers are included into this set, whether exhaustive answers or partial answers are included, or whether only atomic answers or also complex answers are allowed (see Hamblin 1973, Karttunen 1977, Groenendijk & Stokhof 1984, Beaver & Clark 2008 etc. for discussion). An additional problem is

whether the set of possible answers is restricted by context, explicitly enumerated alternatives, as in (9), or unrestricted. For the sake of the argument we assume that there is a well defined mechanism generating the semantic value of questions, that all answers included are at least compatible with the speaker's epistemic base and that the resulting set is somehow restricted. In addition we assume that possible answers to questions like (9) are restricted to the enumerated alternatives.

If focus marks the answer to a question in Alternative Semantics then the question (being a set of possible answers) must satisfy the presupposition triggered by focus. In other words, the set of answers corresponding to the question must be a subset of the alternative meaning of the answer containing a focused expression. The procedure is illustrated in Table 2. See Rooth (1992) for further details.

Table 2. Question-answer paradigm

	Ordinary Meaning	Alternative Meaning
<i>Peter kissed [Mary]<sub>F</sub></i>	Peter kissed Mary.	{Peter kissed Mary, Peter kissed Jane, Peter kissed John, Peter kissed Rex, Peter kissed Napoleon...}
Focus presupposition	A subset of the alternative meaning must be present in the context.	
<i>Who did Peter kiss?</i>	{Peter kissed Mary, Peter kissed Jane...}	
Presupposition satisfaction	Ordinary meaning of the question is a subset of the alternative meaning of the answer.	

Another prominent use of focus is its appearance in the scope of focus sensitive particles such as *only*. In English, the presence of focus can change the truth conditional meaning of a sentence containing a focus sensitive operator, as shown in (1) and (2). In this case, *only* is defined as an operator over the presupposed subset of the alternative meaning. The meaning of *only* can be paraphrased as follows: from the presupposed set of alternatives, it is none but the asserted one which, combined with the subject, yields a true proposition. Crucially, *only* is a verb phrase-level operator, which means that the alternatives it quantifies over must be of an appropriate type, i.e. they denote properties. Technically, this requirement is achieved by assuming that the presupposition induced by focus arises at the verb phrase-level and that the set of presupposed alternatives corresponds to the asserted verb phrase, whereby the focused expression is replaced by alternatives. The meaning of (1) can, therefore, be calculated as shown in Table 3.

Table 3. Interpretation of focus sensitive operators

	Ordinary Meaning	Alternative Meaning
<i>introduced Bill to [John]<sub>F</sub></i>	introduced Bill to John	{introduced Bill to John, introduced Bill to Jack, introduced Bill to Peggy...}
Focus presupposition	A subset of the alternative meaning of <i>introduced Bill to [John]<sub>F</sub></i> must be available in the context.	
<i>only introduced Bill to [John]<sub>F</sub></i>	For every element of the presupposed subset, if x has this property, this property must be “introducing Bill to John”.	
<i>Peter only introduced Bill to [John]<sub>F</sub></i>	For every element of the presupposed subset, if Peter has this property, this property must be “introducing Bill to John”.	
Presupposition satisfaction	in the context, e.g. by the set: {introduced Bill to John, introduced Bill to Jack}	

Similar to the case of the question-answer paradigm, in the case of focus sensitive operators, it is not the whole set of focal alternatives but the contextually restricted set that is relevant for the interpretation.

### 1.3 Grammatical restrictions of alternatives

Consider examples like (10). According to the system presented above, focus *prima facie* generates a number of alternatives that do not even match the selectional restrictions of the verb, like all individual stones, fried chickens or cars, just because they are of the same type as Mary.

(10) *John married [Mary]<sub>F</sub>*

This, of course, is no problem for the mechanism of focus interpretation. Assume that (10) is an answer to the question *Who did John marry?* This question can be modelled as the set of its possible answers, and assuming that only logically true or contingent but no logically false answers can be considered ‘possible’ answers, the context automatically restricts the relevant set of focus alternatives to the individuals John could possibly marry. Since it is this contextual restriction and not the alternative meaning of the sentence itself that is relevant for the interpretation, the fact that focus generates cars and fried chickens as alternatives to Mary does not cause any problems for the framework.

Nevertheless, if in ordinary composition there are grammatical mechanisms sorting out such compositional anomalies, one could expect the same grammatical mechanisms to apply to alternative composition as well. In other words, *John married*

*Jumbo (an elephant)* should not be generated as an alternative to (10) exactly because *John married Jumbo* is itself in a certain sense at least semantically an anomalous sentence.

Of course, one could argue that the issue does not even arise, since the very mechanism of syntactic or semantic composition rules out selectional restriction violations both at the level of ordinary meaning and of alternative meaning. *John married Jumbo* would be, however, predicted to be ungrammatical, uninterpretable or meaningless on such an approach. This problem has been widely discussed in the literature. If selectional restrictions are treated as a syntactic matter, expressions that violate selectional restrictions are predicted to be ungrammatical (Chomsky 1957). If selectional restrictions are treated as domain restrictions for predicates, expressions that violate selectional restrictions turn out to be uninterpretable in the sense of Heim & Kratzer (1998). Under both views *John married Jumbo* is not predicted as an alternative to (10). There are, however, examples showing that blocking semantic or even syntactic composition because of violations of selectional restrictions is too strong of a claim. For instance, even though there may be doubts about the grammaticality or meaningfulness of the old example of Russell in (11), the same would also be predicted to be true for (12), which in fact tends to be simply judged as a true sentence, cf. Lycan (1984). Similarly, if the verb *to marry* would not combine with an elephant, it is questionable how one can derive the meaning of (13).

- (11) *Quadruplicity drinks procrastination.*
- (12) *It's false that quadruplicity drinks procrastination; quadruplicity isn't even animate, and procrastination is a habit people have, not a liquid.*
- (13) *Peter tried to marry Jumbo, but the priest wouldn't agree.*

Another way to tackle the problem, without making any strong assumption about the way selectional restrictions are encoded into grammar, would be to assume that violation of selectional restrictions, just like presupposition failure, simply leads to falsity and argue that logically false alternatives are ruled out in the composition of alternative meanings. Indeed, at first sight it seems that logically false alternatives do not make any sense in the system, but this approach would predict (14) to be too strange because focus could not possibly signal the presence of alternatives in the context, since in (14) only logically false alternatives can be generated. This example shows that not only false but even necessarily false alternatives should actually be generated by the system.

- (14) *Five plus three is [eight]<sub>F</sub>.*

Finally one could argue that introducing more complex type ontology into the system immediately solves the problem: only humans or human females are alternatives to Mary. The problem is, however, that for (15), a reading would be predicted such that Mike saw no other girls but Mary, whereby the speaker is silent about Mike seeing the

fried chicken, the stones and the cars, which is contrary to fact. Hence, restricting the alternatives to those that do at least match selectional restrictions is not a matter of complicating the type theory but a matter of semantic composition. The alternatives to  $[Mary]_F$  should include elephants, but the alternatives to *marry*  $[Mary]_F$  should not.

- (15) *On a picture, there is a fried chicken, a girl called Jane, two stones, five cars and a girl called Mary. Mike, however, only saw  $[Mary]_F$ .*

The moral of these examples is, that if one wants to modify Alternative Semantics in order to block the generation of focal alternatives that violate semantic restrictions at the level of semantic composition, the solution is a non-trivial modification of the framework. Crucially, what we need is a modification so that focus itself generates all possible alternatives of the same type, but the composition of the alternative semantic value rules out non-acceptable alternatives on the way.

Given the difficulties of excluding such alternatives from the alternative meaning, the question arises, as Manfred Krifka (p.c.) pointed out to us, whether we actually need such a modification, since as shown above, the framework actually works fine despite over-generating alternatives in the first step because of the contextual restriction of alternatives. But it turns out that such a modification of the framework would in fact have different predictions than the standard model for cases in which the contextual restriction is weaker than the grammatical restriction. This is the case if a language marks grammatical gender of an argument on the verb by some means, provided that the gender feature is semantically interpretable. In such a case the standard model would predict no effect of gender on the pragmatic interpretation of sentences containing a focused expression whatsoever, while a system compositionally restricting the set of alternatives would predict that the alternative semantic value of the sentence only contains alternatives having the same grammatical gender. Arguably Romanian is such a language in which, under certain quite complex conditions, the use of clitic pronouns after a fronted focused constituent is not fully grammaticalized and hence it can be assumed that the gender feature carried by the clitic pronoun might be interpretable in the semantic composition.

In the next section we develop the semantic model proposed including the formal details, and in Section 3 we discuss the case of Romanian, which although not completely conclusive seems to support our predictions.

## 2. The treatment of backgrounded material in Alternative Semantics

Given the discussion above, we assume that the very general rule of creating focal alternatives needs additional restrictions. The notion of contextual restriction is most prominently implemented in Rooth (1992). Von Heusinger (2007) introduces some modifications regarding the proper treatment of the definite article in Alternative Semantics, pointing out that the number feature cannot contribute to the semantic

composition of alternatives. The idea of accounting for selectional restrictions or features such as gender has not been technically implemented in Alternative Semantics so far. In this section we present such a technical solution that places grammatical restrictions into the restrictor of generated alternatives. In the first step we present the general idea of the procedure and we analyze one example including the presence of clitic pronouns after focused fronted arguments and one including selectional restrictions, and in the second step we introduce a formalism for the semantic composition of alternative semantic values.

## 2.1 The general idea

As pointed out above, one way to deal with selectional restrictions is to rule out their violation in the syntactic or semantic composition, such as by assuming that linguistic expressions are partial predicates. This treatment automatically rules out selectional restriction violations both for ordinary and alternative meaning. The other way of dealing with them is to regard them as a specific kind of lexical presupposition (e.g. Fillmore 1971 or Martin 1979). The general motivation of such approaches is that the difficulty of assigning truth values to sentences which violate selectional restrictions seems similar to classical presupposition failure related to factive verbs, definite descriptions, anaphoric pronouns, which are considered to be instances of semantic presuppositions. (Cf. e.g. Karttunen 1973 or Kempson 1975 for criticism. Such criticism led to the view that presuppositions are rather requirements on the common ground, cf. e.g. Chierchia & McConnell-Ginet 2000.)

Selectional restrictions of verbs are similar to presuppositions in that they license certain inferences even in contexts in which the predicate is not asserted, as in (16), in which even though it has not been stated that John actually married the professor, one can infer that the professor is female (at least in a country in which homosexual marriage is not defined).

- (16) *Perhaps John married the professor.*  
 → The professor is female.

But then again, as opposed to presuppositions, such inferences are not existential and the force of the inference is also significantly weaker than in the case of classical presuppositions. If we compare (17) and (18) it is obvious that the inferences triggered by presuppositions are much stronger than the inferences triggered by selectional restrictions.

- (17) *#John did not marry the professor because there are no professors.*  
 (18) *?John did not marry the professor because the professor is male.*

Thus, the observation is that selectional restrictions are similar to presuppositions but treating them as proper presuppositions leads to problems. The solution adopted in

this paper is to consider both presuppositions and selectional restrictions as instances of *backgrounded material*, a notion loosely inspired from the analysis of focus in Geurts & van der Sandt (2004). Lexically triggered presuppositions and e.g. selectional restrictions are present in the composition but they do not contribute to the proffered meaning of a sentence. Rather they can be considered as conditions of appropriateness, felicitousness and interpretability of sentences which interact with the common ground (or modal base), with respect to which the expression is interpreted.

The term *backgrounded material* has nothing to do with the notion of background in the terminology of structured meaning approaches to focus, where focus triggers a partition of meaning into focus and background. Note that in Alternative Semantics it is not necessary to assume that focus turns the focus frame into a background, and – for that matter – we will not assume anything like that.

Here, backgrounded material is to be understood as semantic material that is present in the composition (being entailed by some element) but not explicitly asserted and which can (to a certain extent) be retrieved even in cases in which the clause containing it is not asserted. As a convention, we will underline backgrounded material. Accordingly, backgrounded material includes but is not constrained to presuppositions.

While there are a large number of presupposition triggers, backgrounded material other than classical presuppositions can be contributed by verbs both in finite and non-finite forms, by adjectives, by clitic pronouns and possibly by other items as well. For a verb like “marry” we assume that all not asserted information (that the arguments are in an appropriate age, have opposing gender etc.) is backgrounded information, while the only assertion is that the act of marriage actually takes place.

In the case of clitic pronouns the major reason why we assume that they can contribute a backgrounded gender feature is that they can also be used for anaphoric cross sentential reference whereby they restrict the set of possible referents by means of their gender feature. In those cases the gender feature is part of the presupposition in order to allow the hearer to identify the presupposed referent.

Therefore one has to clearly distinguish between the case in which clitic pronouns play a purely grammatical role as in the case of clitic doubling or clitic left dislocation, where the gender feature is purely syntactic and presumably non-interpretable, and cases in which the clitic pronoun is optional or has an anaphoric function, where the gender feature can be treated as backgrounded material. We will argue below that in the case of some focus constructions in Romanian the latter is the case.

Generally, we assume that backgrounded material has some projection properties, meaning that not only presuppositions project, but predicative material as well. However the latter cannot project higher than the discourse representation level at which their arguments are established. In other words, such material sticks to its referent.

Given this notion of backgrounded material and the architecture of alternative semantics, predicative backgrounded material is therefore expected to restrict the set of possible alternatives, i.e. it projects to the domain of alternative values. For example in (19) we assume that the verb ‘to write’ includes the backgrounded information about

its agent argument that it is a sentient (probably human) being having the knowledge of writing etc. All this information, being backgrounded material, will project to the domain of alternative values and hence restrict possible alternatives to John to sentient human beings that are at least in principle able to write. Hence this sentence would not contrast John to, say, the dog Pluto, or to a fried chicken.

(19) [John]<sub>F</sub> wrote a book.

Interestingly, this is not true reciprocally, hence according to this idea one may contrast Pluto or for that matter a fried chicken to John, but not vice versa. The reason for this is that John does qualify as a good alternative to Pluto, because it is not ruled out by the backgrounded material, while Pluto is. And indeed (20) is significantly better than (21).<sup>2</sup>

(20) [Pluto]<sub>F</sub> wrote this book, and not John.

(21) #[John]<sub>F</sub> wrote this book, and not Pluto.

For the case of clitic pronouns, exactly the same mechanism should apply. In the Romanian example (22), the alternatives generated to handbag are all feminine because the clitic pronoun has a feminine feature. Hence, the system would predict that contrasting the handbag to some other feminine alternative such as Romanian *pălăria* ‘the hat’ should be judged as more natural than contrasting it to some neuter or masculine alternative like *ceasul* ‘the watch’. Some informants confirmed this contrast while others didn’t, although it is worth noting that no informants found (24) better than (23).

(22) *Maria* [poșeta]<sub>F</sub> a uitat-o acasă.

Mary handbag.DEF.FEM has forgotten-CL.3.SG.FEM at-home  
‘Mary has forgotten her handbag at home.’

(23) *Maria* [poșeta]<sub>F</sub> a uitat-o acasă, și nu pălăria.

Mary handbag.DEF.FEM has forgotten-CL.3.SG.FEM at-home and not hat.DEF.FEM  
‘Mary has forgotten her handbag at home, and not the hat.’

(24) *Maria* [poșeta]<sub>F</sub> a uitat-o acasă, și nu ceasul.

Mary handbag.DEF.FEM has forgotten-CL.3.SG.FEM at-home and not watch.DEF.NEUT  
‘Mary has forgotten her handbag at home, and not the watch.’

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2. Of course, the contrast between (20) and (21) can be explained in other terms as well, since it is quite hard to presuppose that Pluto might have written the book. Note, however, that our point is just that the idea of a grammatical restriction of focal alternatives simply does not rule out (20).

Of course, this contrast could be explained independently by means of ellipsis and reconstruction, since in (24) the reconstruction of the elided material involves a different clitic than in the first part of the sentence. Nevertheless this contrast is also predicted by the system proposed here and in Section 3 we will present additional data supporting our predictions. Note that the crucial assumption needed for this prediction is that the gender feature on the clitic pronoun is interpretable. We assume that this is only the case if the clitic placement is not obligatory or fully grammaticalized. If the clitic were clearly obligatory, one would not expect such an effect to arise, because one would expect the gender feature to be purely formal.

## 2.2 The formal analysis

In this section we present the formal modification of alternative semantics advocated above. We formulate this as the Backgrounded Material Principle. Note that the Backgrounded Material Principle presented in the following is restricted to predicative backgrounded material and does not apply to classical presuppositions. Of course, one would expect that it can be generalized to presuppositions as well, but we will not discuss this possibility here, since the treatment of presuppositions in alternative semantics is a problematic field on its own.<sup>3</sup>

### Backgrounded Material Principle (BMP)

If there is backgrounded material predicated over the referent introduced by a focused expression, this information will end up restricting the alternative meaning, i.e. it will appear as part of the condition predicate in a set builder form of the alternative meaning, via a specific compositional rule. In other words backgrounded material restricts focal alternatives at the level of semantic composition.

Formally, using standard alternative semantics notational conventions, the system can be captured as follows:

$\|\cdot\|^o$  an interpretation function computing the ordinary semantic value of an expression.

$\|\cdot\|^A$  an interpretation function computing the alternative semantic value of an expression.

If  $\alpha$  is an expression and  $D$  is the discourse universe, then

if  $\alpha$  is not focused  $\|\alpha\|^o = \|\alpha\|$  and  $\|\alpha\|^A = \{\|\alpha\|^o\}$

if  $\alpha$  is focused  $\|\alpha\|^o = \|\alpha\|$  and  $\|\alpha\|^A = D_{\text{Type } \|\alpha\|^o}$

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3. Note that the treatment of definite descriptions denoting unique individuals in alternative meaning leads to problematic predictions (cf. von Heusinger 2007); for the sake of simplicity we leave the issue open here, and treat the definite description simply as an individual having all individuals of the model as alternatives.

If  $\alpha$  and  $\beta$  are expressions, then the following compositional rules apply.

$$\|\alpha \beta\|^{\circ} = \|\alpha\|^{\circ}(\|\beta\|^{\circ})$$

$$\|\alpha \beta\|^A = \{ \alpha'(\beta') \mid \alpha' \in \|\alpha\|^A, \beta' \in \|\beta\|^A \}$$

At this point BMP adds an additional compositional rule:

If  $\varphi$  is an expression of type  $\langle e, t \rangle$  and  $P$  and  $Q$  are predicates of the same type, such that  $\|\varphi\|^{\circ} = \lambda x [P(x) \wedge Q(x)]$ , and  $u$  is an expression denoting an individual (or a variable of type  $e$ ), the following compositional rules apply:

- i.  $\|\varphi[u]_F\|^{\circ} = P(\|u\|^{\circ}) \wedge Q(\|u\|^{\circ})$
- ii.  $\|\varphi[u]_F\|^A = \{P(x) \mid x \in \|u_F\|^A \wedge Q(x)\}$

Given this principle, we predict that as soon as a focused expression is combined with a verb or a verb-clitic combination, backgrounded restrictions regarding gender, animacy etc. of the focused expression will restrict the set of alternatives in the compositional process. In other words, backgrounded material will not just make a whole amount of alternatives false but will rule them out of the composition in the first place.

This way we can return to the simple example  $[John]_F$  *sleeps*. For the sake of simplicity in the model  $M$  there are three individuals: a car abbreviated as  $C$ , and two boys: John and Jack. The alternatives are now generated as shown in Table 4, in which  $C$  is an alternative to John but as soon as John is combined with the predicate *sleep*, this alternative disappears, since it is ruled out by the selectional restriction  $[+ANIMATE]$  of the verb *sleeps*.

Table 4. Backgrounded material restrictions on focal alternatives

Expression	Ordinary Meaning	Alternative Meaning
<i>John</i>	John	{John'}
$[John]_F$	John	{John', Jack', C}
<i>Sleeps</i>	sleeps	{sleeps'}
<i>John sleeps.</i>	John sleeps	{sleeps' (John')}
$[John]_F$ <i>sleeps.</i>	John sleeps	{sleeps' (John'), sleeps' (Jack')}

Similarly, in the case of clitic doubling, as soon as the direct object is combined with a verb-clitic combination, only alternatives that match the gender of the direct object are computed. For (25), the focused expression *bicicleta* 'bicycle' itself will have both feminine and masculine alternatives, but as soon as it is combined with the verb-clitic combination only feminine alternatives remain. This is shown in Table 5. Note that in Table 5 the predicate *fem* is used as a simplification and is informally paraphrased in the last row, being then explained in the following.

- (25) *Petru [bicicleta]\_F a lovit-o.*  
 Peter bicycle.DEF.FEM has hit-CL.3.SG.FEM  
 'Peter hit the bicycle.'

Table 5. Grammatical restriction on focal alternatives in (25)

Expression	Ordinary Meaning	Alternative Meaning
<i>a lovit</i>	$\lambda y \lambda x$ [hit' (x,y)]	$\{\lambda y \lambda x$ [hit' (x,y)] $\}$
<i>a lovit-o</i>	$\lambda y \lambda x$ [hit' (x,y) $\wedge$ <u>fem</u> (y)]	$\{\lambda y \lambda x$ [hit' (x,y) $\wedge$ <u>fem</u> (y)] $\}$
$[bicicleta]_F$	$\iota x$ [bicycle' (x)]	$\{D_e\}^1$
$[bicicleta]_F$ <i>a lovit-o</i>	$\lambda x$ [hit' (x, $\iota y$ [bicycle' (y)]) $\wedge$ <u>fem</u> ( $\iota y$ [bicycle' (y)])]	$\{\lambda x$ [hit' (x,y)   $y \in D_e \wedge$ fem(y)] $\}$
<i>Petru</i> $[bicicleta]_F$ <i>a lovit-o</i>	Peter hit the bicycle	$\{\text{Peter hit } y \mid y \text{ is an individual denoted by some expression having a feminine grammatical feature}\}$

Two issues remain to be mentioned: first, backgrounded material related to gender can apply both to the natural gender, as was the case in (18), or to the grammatical gender as in the case of clitic doubling. Romanian distinguishes grammatical gender features for non-animate individuals as well, which makes this second aspect relevant. A model theoretic reflex of grammatical gender is not trivial, since grammatical gender is a feature of expressions and not a property of individuals in the model. In a simple model, however, in which there is a correspondence between nouns and individuals such that no individual can be referred to by several nouns, the predicate *fem* can be defined such that *fem*(x) is true exactly in case the noun referring to x has the grammatical feature [+FEMININE]. Of course, in reality the same individual may be denoted by several nouns having different grammatical gender. In order to apply BMP on clitic pronouns in Romanian in a formally respectable way, serious complications would be needed. However, this problem is not specifically induced by the framework presented here, since in any theory of pronominal reference the fact that pronouns use gender to identify their referent must be accounted for – we leave this issue open and assume that a formally adequate solution is possible.

The second issue regards sentences like (13). If we assume that backgrounded material restricts alternative meaning as soon as it is combined with a focused argument, *trying to marry* would be predicted to rule out alternatives that may in fact be mentioned in a question, as e.g. in (26):

- (26) *Who did John try to marry, Jane, Peter or his car?*  
*John tried to marry* [*Jane*]<sub>F</sub>.

We do not account for this by modifying the compositional rule presented above. It seems rather that if a question (or for that matter some other contextual mechanism) delivers a set that overlaps with the presupposed set, a very 'cheap' accommodation process is triggered, such that the effect is only a very weak pragmatic violation that is immediately resolved in the context. But if this is on the right track, the fact that we can only observe a very weak contrast between (23) and (24), comes out as actually predicted, because we can reconstruct both sentences as answers to appropriate

questions, and for (24) a cheap accommodation process is assumed that is triggered by the overlap between the alternative sets.

### 3. The Romanian data

The presence of clitic doubling for direct objects in Romanian depends first of all on the presence of the differential object marker<sup>4</sup> *pe* (glossed as “DOM”) and on topicality. In cases in which the focused and therefore left dislocated direct object is not *pe*-marked and not topicalised, clitic doubling is generally excluded, except for the case of left dislocated focused definite non-human direct objects. We start the discussion of the Romanian data by presenting the general pattern of differential object marking in Romanian, which is a trigger of clitic doubling. Then, we discuss the impact of information structure on clitic doubling and the conditions of the placement of clitic pronouns after focused constituents. Finally we will present the experimental data related to the predictions of the BMP.

#### 3.1 Differential object marking and clitic doubling

In Romanian, direct objects can or must be marked with the differential object marker *pe* depending on conditions that include animacy, referentiality and contextual information such as topicality. Generally, the more animate, referential and topical a direct object is, the more likely it is to be marked with *pe*. For the sake of simplicity we will assume that only human direct objects can be *pe*-marked in Romanian, even though there can be some exceptions to this generalization (cf. von Heusinger & Onea 2008 for a more detailed discussion). If the direct object is *pe*-marked it is always doubled with a clitic pronoun in present day Romanian.<sup>5</sup> However, especially older speakers seem to accept some exceptions in which clitic doubling is missing despite *pe*-marking.

Full personal pronouns (27) and proper names referring to humans (28) are always marked with *pe*. It should be noted that full personal pronouns are only used for

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4. Differential object marking is a phenomenon observed in many languages where the direct object is only morphosyntactically or lexically marked if certain conditions related to the referential properties of the direct object or the main verb are fulfilled. Cf. Bossong (1985), Aissen (2003) etc. for discussion.

5. Although, as pointed out by one of our reviewers, this would be an important question, and we do not present an actual analysis of the grammatical constraints or mechanisms leading to the presence of clitic pronouns in a whole number of partly different constructions in Romanian. We do assume that there is a connection between the presence of clitics and differential object marking, but the exact nature of clitic doubling goes way beyond the scope of this paper, see e.g. Klein (2007) for discussion.

emphasis, while weak pronouns suffice for anaphoric reference. Of course, in such cases, clitic doubling is also obligatory.

- (27) *L-am văzut \*(pe) el.*  
 CL.3.SG.MASC have seen DOM he  
 ‘I have seen him.’
- (28) *\*(L)-am văzut \*(pe) Mihai.*  
 CL.3.SG.MASC have seen DOM Michael  
 ‘I have seen Michael.’

Most of the post-verbal human definite noun phrases get *pe*-marked if there are no semantic (cf. Dobrovie-Sorin 2007) or syntactic restrictions blocking it, as shown in (29). The most important and very common syntactic restriction is that the structure “*pe* + noun + definite article” without further modifiers is ungrammatical in Romanian. Some rather familiar functional expressions such as *the mother*, *the teacher*, *the priest*, *the boss*, etc. (as opposed to functional expressions that are rather official, as *the director*, *the king*, *the president*, etc.) are exceptions from this constraint. In the case of pre-verbal (topicalised) human definite noun phrases *pe*-marking is even more likely. Note that non-animate definite noun phrases do not get *pe*-marking (nor clitics), as shown in (30), except for special cases in colloquial speech.

- (29) *L-am văzut pe profesorul tău.*  
 CL.3.SG.MASC have seen DOM professor.DEF.MASC your  
 ‘I have seen your professor.’
- (30) *\*(L)-am văzut (\*pe) autobuzul tău.*  
 CL.3.SG.MASC have seen DOM bus.DEF.MASC your.  
 ‘I have seen your bus.’

For post-verbal indefinite human direct objects differential object marking is optional if further factors are fulfilled, the most important being specificity as shown in (31) and (32) (cf. Farkas 1978, Dobrovie-Sorin 1994, Bende-Farkas 2002, Kamp & Bende-Farkas 2006), otherwise the result is ungrammatical. For pre-verbal topicalised indefinite human direct objects *pe*-marking is very likely, since specificity is automatically granted by topicalization (cf. Endriss 2007).

- (31) *O caut pe o secretară.*  
 CL.3.SG.FEM search DOM a secretary.FEM  
 specific reading: ‘I am searching for a (specific) secretary.’
- (32) *Caut o secretară.*  
 search a secretary.FEM.  
 specific reading: ‘I am searching for a (specific) secretary.’  
 non-specific reading: ‘I am searching for some secretary.’

If the direct object is post-verbal, clitic doubling is relatively strictly correlated to the direct object marker *pe*, but for pre-verbal direct objects, clitic doubling is possible and may even be obligatory in cases in which *pe*-marking is excluded, e.g. if the direct object is non-human but definite and topicalised, as in (33). Note that both the addition of *pe* (34) and the lack of the clitic pronoun (35) would make the sentence ungrammatical.

- (33) *Caietul de franceză l-am văzut.*  
 copybook.DEF.MASC of French CL.3.SG.MASC have.1.SG seen  
 ‘I have seen the French copybook.’
- (34) \**Pe caietul de franceză l-am văzut.*  
 DOM copybook.DEF.MASC of French CL.3.SG.MASC have.1.SG seen  
 ‘I have seen the French copybook.’
- (35) \**Caietul de franceză am văzut.*  
 copybook.DEF.MASC of French have.1.SG seen  
 ‘I have seen the French copybook.’

### 3.2 Information structure and clitic pronouns

In Romanian the information structurally unmarked word order is SVO, however topicalization can be marked with left dislocation (36) and focus can be marked by intonation (37) or by intonation and word order (38):

- (36) *Ce s-a întâmplat cu mașina?*  
 ‘What happened with the car?’  
*Mașina am lovit -o.* O<sub>T</sub>V  
 car.DEF.FEM have.1.SG crashed CL.3.SG.FEM  
 ‘As for the car, I have crashed it.’
- (37) *Ce ai lovit, mașina sau autobuzul?*  
 ‘What did you crash, the car or the bus?’  
*Am lovit [mașina]<sub>F</sub>.* VO<sub>F</sub>  
 have.1.SG crashed car.DEF.FEM  
 ‘I crashed the car.’
- (38) *Ce ai lovit, mașina sau autobuzul?*  
 What did you crash, the car or the bus?  
 [*Mașina*]<sub>F</sub> am lovit -o. O<sub>F</sub>V  
 car.have.1.SG crashed CL.3.SG.FEM  
 ‘I crashed the car.’

Note that in the examples above we have suppressed the subject due to the fact that in the case of left dislocation of the direct object, the subject needs to be inside the verb

phrase. Otherwise we get an information structurally marked subject. We will not discuss this further complication at this point.

If topicalization and left-dislocated focus co-occur, an information structurally marked word order arises that does not disambiguate grammatical roles. This is illustrated in (39) and (40) with an SOV and OSV word order respectively:

- (39) *Petru pe Maria a văzut-o.*  
 [Peter]<sub>T</sub> DOM [Mary]<sub>F</sub> have.3.SG seen CL.3.SG.FEM  
 ‘Peter has seen MARY.’
- (40) *Pe Petru Maria l-a văzut.*  
 DOM [Peter]<sub>T</sub> [Mary]<sub>F</sub> CL.3.SG.MASC have.3.SG seen  
 ‘MARY has seen Peter.’

A left dislocated topicalised direct object expressed by a pronoun, a proper name or a definite noun phrase is repeated by a clitic pronoun agreeing in person, gender and number in any case, regardless of its animacy or *pe*-marking (cf. e.g. (33)). A topicalised human indefinite direct object is also repeated by a clitic pronoun, but non-human indefinite noun phrases are never repeated by clitic pronouns even if they are topicalised, as shown in (41).

- (41) *Un caiet de franceză (\* l-)am văzut.*  
 a copybook.MASC of French CL.3.SG.MASC have.1.SG seen  
 ‘I have seen a French copybook.’

A left dislocated focused direct object is necessarily repeated by a clitic pronoun if it is *pe*-marked. This is the case for full pronouns, proper names, or definite human noun phrases. Note that human focused indefinite noun phrases cannot be *pe*-marked, which could in fact signal that focused indefinites cannot be specific. Indefinites are not repeated by clitic pronouns if they are focused under any circumstances. Non human definite noun phrases are mostly repeated by a clitic pronoun, as shown in (42), but the lack of the clitic pronoun is not completely ungrammatical (but dispreferred by many speakers). In fact, the conditions under which clitic doubling may be left out in sentences like (42) are exactly the issue we are interested in here.

- (42) [*Bila roşie*]<sub>F</sub> am văzut <sup>?</sup>(-o).  
 ball.DEF.FEM red have.1.SG seen CL-3.SG.FEM  
 ‘I have seen the RED BALL.’

Before discussing the conditions of clitic pronouns for sentences like (42) in more detail, we summarize the findings so far in Table 6. The presence of a clitic is strictly correlated to the presence of the differential object marker if the direct object is post-verbal or human. If the direct object is topicalised, the clitic pronoun is obligatory in all cases except for indefinite non-human direct objects, hence, the presence of the clitic pronoun is not strictly correlated to *pe* in this case. Since a clitic is obligatory in

all other cases of topicalization, topicalization itself can be considered as a grammatical trigger for clitic pronouns (if further conditions are fulfilled). If the direct object is focused, clitics strictly co-occur with *pe*-marking, except for the case of definite non-human noun phrases. In this case, differential object marking is excluded and clitics are optional/preferred. This is the only case in which the presence of a clitic appears not to be triggered by an independent grammatical mechanism. Note that in many Romance languages, it is rather uncommon to find clitic pronouns after left dislocated focus.

**Table 6.** The presence of clitics depending on referential properties, animacy and syntactic position

Syntactic position of DO →		DO post verbal	DO topicalised	DO focused
Referential properties of DO ↓				
Personal Pronoun		[+DOM] [+CL]	[+DOM] [+CL]	[+DOM] [+CL]
Proper Name		[+DOM] [+CL]	[+DOM] [+CL]	[+DOM] [+CL]
[+human]	Def. NP	[+CL] iff [+DOM]	[+DOM] [+CL]	[+DOM] [+CL]
	Indef. NP	[+CL] iff [+DOM]	[+DOM] [+CL]	[-DOM] [-CL]
[-human]	Def. NP	[-DOM] [-CL]	[-DOM] [+CL]	[-DOM] [+CL] preferred/optional
	Indef. NP	[-DOM] [-CL]	[-DOM] [-CL]	[-DOM] [-CL]

### 3.3 Conditions of clitic pronouns for non-human definite pre-verbally focused direct objects

In the following we will discuss only [+DEFINITE], [-HUMAN] direct objects like *the book*, *the car* etc, which are focused pre-verbally as shown in (42). In Romanian, the presence of clitics seems preferred in such cases.

At this point some discussion about the data is needed. One of our anonymous reviewers argues that clitics are in fact obligatory in (42); the version without clitic simply not being Romanian. While we agree that many speakers do not accept the version without clitic doubling we found that at least in Transylvania there is a significant number of Romanian native speakers who not only accept but even prefer the version without clitic doubling in some cases. In a mini-experiment conducted with ten participants we asked Romanian native speakers to complete the missing verb in dialogues like the one presented in the following image, whereby the glosses can be found in (43).

- 1) A: Petru a furat bicicleta Mariei.  
 B: Nu măi, Petru mașina Mariei \_\_\_\_\_ și nu bicicleta.

- (43) A: *Petru a furat bicicleta Mariei.*  
 Peter has stolen bicycle.DEF.FEM Mary.GEN  
 ‘Peter has stolen Mary’s bicycle.’

- B: *Nu măi, Petru mașina Mariei \_\_\_\_\_, și nu bicicleta.*  
 No you, Peter car.DEF.FEM Mary.GEN \_\_\_\_\_ and not bicycle.DEF.FEM  
 ‘No way, Peter has stolen Mary’s car and not the bicycle.’

In the experiment eight participants exhibited a clear tendency to use clitics independent of gender, number and the other conditions we controlled, while two participants living in Transylvanian cities used no clitics under certain conditions. Note however, that there were also other Transylvanian participants who did use clitics. Given the small number of participants, this experiment does not allow any generalisations about eventual dialectal differences in present-day Romanian, but it does prove that at least for some speakers the version of (42) without clitic is acceptable. Crucially, this experiment does not show or imply that there would be any Romanian speakers who find the version with clitic ungrammatical or unacceptable.

The exact factors facilitating the omission of the clitic pronoun if the direct object is focused are not totally clear to us and require a more detailed experimental investigation, but the general tendency, based on introspection, discussion with some informants and the mini-experiment presented above, seems to be the one summarized in Table 7:

**Table 7.** Conditions of the omission of clitics after non-animate definite focused direct objects

	+CL	←-----→	-CL
i.	animate subject		non animate subject
ii.	direct object highly affected		direct object less affected
iii.	subject and object have different gender		subject and object have the same gender
iv.	the contextually available alternatives to focus have the same gender		the contextually available alternatives to focus have different gender

We assume that factors *i–ii* are connected to the notion of transitivity (Hopper & Thompson 1980) and, more generally speaking, to the force of the connection between the verb and the direct object. Transitivity has already been argued to be relevant for differential object marking in Romanian and it seems that the use of clitic doubling spreads along similar scales, cf. von Heusinger & Onea (2008) for details.

Factor *iii* seems to be related to the disambiguation of grammatical roles: if the subject and the direct object have different gender and a clitic is present, the grammatical roles are disambiguated, however, if the subject and the object have the same gender, clitics do not overtly contribute to the disambiguation of the grammatical roles and, hence, seem more likely to be left out. Moreover, if the clitic is left out, this immediately disambiguates the grammatical roles, since clitic omission is not possible for topicalised direct objects at all. Accordingly, in (44) the clitic can be co-indexed both with the topic and the focus and hence the direct object could be both the car and the bicycle (of course the *ii* reading is more salient because of the more natural

subject–object order). In (45) on the other hand, if the car (the topic) were the direct object, the omission of the clitic would not be grammatical. Therefore, only the reading is available in which the car is the subject. Note, however, that there are speakers who completely reject (45).

- (44) *Mașina bicicleta a lovit-o.*  
 car.DEF.FEM bicycle.DEF.FEM has hit CL.3.SG.FEM  
 reading *i*: ‘The bicycle hit the car.’  
 reading *ii*: ‘The car hit the bicycle.’
- (45) *Mașina bicicleta a lovit.*  
 car.DEF.FEM bicycle.DEF.FEM has hit  
 ‘The car hit the bicycle.’

Factor *iv* seems a pragmatic restriction that might be directly correlated to the prediction made by the composition of alternative semantic values presented in Section 2. Let us consider for example a context in which there are two maids whose job it is to wash every piece of clothing in a hotel by hand. As a result they are very much interested in anything that may happen to the clothing in that particular hotel, and are vividly discussing an accident in the kitchen. One of them asks what the soup was spilled on. In this context, the acceptability of the answer containing a pre-verbally focused definite non-animate direct object and no clitic pronoun depends (among other things) on the alternatives included in the question, as shown in (46) and (47). Note that in this dialog all factors included in Table 11 have been matched: the subject is non-animate, the direct object is not highly affected, the subject and the object have the same gender, and the contextually available alternatives have a different gender.

- (46) Q: *Ce a murdărit supa vărsată, bluza sau pantalonul bucătăresei?*  
 ‘What did the spilled soup dirty, the blouse or the trousers of the cook?’  
 A: *?Supa vărsată bluza bucătăresei a murdărit, și nu pantalonul.*  
 soup.DEF.FEM spilled blouse.DEF.FEM cook.GEN has dirtied, and not  
 trousers.DEF.MASC  
 ‘The spilled soup dirtied the blouse of the cook and not the trousers.’
- (47) Q: *Ce a murdărit supa vărsată, bluza sau fusta bucătăresei?*  
 ‘What did the spilled soup dirty, the blouse or the skirt of the cook?’  
 A: *??Supa vărsată bluza bucătăresei a murdărit, și nu fusta.*  
 soup.DEF.FEM spilled blouse.DEF.FEM cook has dirtied,  
 and not skirt.DEF.FEM  
 ‘The spilled soup dirtied the blouse of the cook and not the trousers.’

For both (46) and (47), including the clitic pronoun is grammatical and generally preferred. However, it seems that even speakers who reject both as ungrammatical often acknowledge that (46) is better than (47). Hence, we conclude that if the clitic can be left out at all, then this is most likely to happen in case the gender of the focused

expression does not match the gender of the alternatives. Note that this is exactly the case for which the version with clitic is predicted to be worse by our compositional system. Therefore we interpret the difference in the acceptability between (46) and (47) not only as the conditions for the omission of a clitic being fulfilled but rather as a deterioration of the acceptability of the use of a clitic if the alternatives have different genders than the focused element. In other words, the fact that (46) is more acceptable than (47) derives from (48) violating a pragmatic constraint, while (49) does not violate any pragmatic constraint, although both (48) and (49) are perfectly grammatical in present-day Romanian.

- (48) Q: *Ce a murdărit supa vărsată, bluza sau pantalonul bucătăresei?*  
 ‘What did the spilled soup dirty, the blouse or the trousers of the cook?’  
 A: *Supa vărsată bluza bucătăresei a murdărit-o, și nu pantalonul.*  
 soup.DEF.FEM spilled blouse.DEF.FEM cook.GEN has dirtied CL.3.SG.FEM,  
 and not trousers.DEF.MASC  
 ‘The spilled soup dirtied the blouse of the cook and not the trousers.’
- (49) Q: *Ce a murdărit supa vărsată, bluza sau fusta bucătăresei?*  
 ‘What did the spilled soup dirty, the blouse or the skirt of the cook?’  
 A: *Supa vărsată bluza bucătăresei a murdărit-o, și nu fusta.*  
 soup.DEF.FEM spilled blouse.DEF.FEM cook.GEN has dirtied CL.3.SG.FEM,  
 and not skirt.DEF.FEM  
 ‘The spilled soup dirtied the blouse of the cook and not the trousers.’

In particular, we assume that in (48) the presence of the clitic pronoun restricts the alternatives to the focused expression to alternatives which have the same gender as the focused constituent. We will not give a complete semantic analysis of clitic doubling here, for details see e.g. Klein (2007), who analyzes clitics as anaphoric expressions, or Dobrovie-Sorin (1994), but we assume that at least in cases in which they are optional in the sense that they are not triggered by independent grammatical reasons, clitics contribute an interpretable gender feature to the semantic composition, which is responsible for the restriction of the alternative semantic value.

This restriction is stronger than the restriction given by the context, i.e. the restriction to the enumerated alternatives in the question. The restriction by the context restricts the possible answers to the blouse and the trousers, but the presence of clitic rules out the trousers from the set of alternatives because of its different gender feature. In the terms of Rooth (1992) the focus-presupposition is not (completely) satisfied by the question, since the ordinary semantic value of the question only overlaps and is not a subset of the alternative meaning of the answer.

### 3.4 Experimental data

Given that the data are somewhat controversial we conducted an experiment in which we tried to gain a better understanding of the conditions of the presence of clitic pronouns in such cases. In the experiment question-answer pairs have been rated for acceptability by twenty-nine native speakers from the Transylvanian city Târgu Mureş and surroundings, aged 18 to 66 on a free scale.

The questions presented two alternative non-animate, definite and modified direct objects and the answerers picked one out in an immediate pre-verbal position in different conditions depending on the gender match between the alternatives ( $\pm$ GM) (i.e. both feminine vs. one feminine and one masculine) presented in the question and the presence of the clitic pronoun ( $\pm$ cl). (46) and (47) are actual examples from the experiment for [-CL], and [-GM]/[+GM] respectively. (48) and (49) are examples from the experiment for [+CL], and [-GM]/[+GM] respectively.

Note that in the experiment a significant number of fillers and sixteen different lexicalizations for each condition have been used such that each participant saw eight randomly selected items representing all conditions. Unfortunately, due to the complexity of magnitude estimation experiments, eight participants have been excluded for having obviously misunderstood the task.

The results have been summarized in the following table, whereby positive numbers stand for higher acceptability. Note that the variance in the answers was very high, such that even though twenty-one participants have been statistically processed, the results cannot be considered statistically sound ( $p > 0.1$ ). This is not really surprising, given the oddity of sentences containing non human subjects and objects and the eventual idiolectal or dialectal differences already described above. Of course, an experiment exhibiting such a high variation is not a valid proof of a theoretical claim, however it can be considered a good starting point for further empirical research, given that the results are both in line with general expectations and our predictions.

**Table 8.** Results of the experiment

	[+GM]	[-GM]
[+cl]	16.2	6.2
[-cl]	-30.2	-7.1

The table shows, as generally predicted and assumed by one of our reviewers, that the use of the clitic is always preferred, which neatly accounts for the unacceptability of the version without clitic for many speakers. But the lack of a clitic is significantly more acceptable if the alternatives have different gender, even if it can be considered generally suboptimal. Moreover, the presence of the clitic is judged better if the gender features of the focused constituent and the alternatives match. And as a mirror

to this, the “distance” in acceptability between the presence and absence of clitics is reduced if the gender features differ.

These results are in line with our predictions because we do predict a deterioration of the acceptability of the clitic pronouns if the gender of the focused expression and the alternative given in the question differ. The differences should not be very high, since according to our model in such a case only a weak pragmatic violation takes place – the overlapping of the alternative sets can lead to relatively easy accommodation. Moreover, it seems that the lack of the clitic pronoun improves in acceptability if the gender of the alternative and the focused expression differs.

One of our anonymous reviewers has pointed out that this finding is closely related to an Optimality-theoretic framework and asked for further discussion. In terms of constraint based grammar, our view is that there are two constraints at work here: the first one blocks the lack of clitics and hence forces the use of clitics, whereas the other blocks the use of clitics in case they would lead to a pragmatic violation with regard to presupposition satisfaction. Assuming that the first constraint is ranked higher, Optimality Theory correctly predicts that the version with clitic wins in both cases, regardless of the gender match or mismatch. Crucially, what we are interested in is the relation between the optimal and the suboptimal candidate. The observation is that the lower ranked constraint still does have an impact on acceptability, even if it does not change the overall winner. This is not predicted by standard Optimality Theory.

However, in our view this observation is not surprising. Differential object marking and clitic doubling can be viewed cross linguistically as phenomena influenced by a multitude of factors which often lead to relatively free alternation, i.e. optionality. Therefore it seems that it is not one single ranking of constraints that is decisive for this kind of phenomena but rather that the different influential factors can join up and influence acceptability, even if they are ranked lower. We do not argue that this cannot – in principle – be modeled in some versions of Optimality Theory, but it is important to note that the nature of the argument proposed here goes beyond the scope of Optimality Theory: it is not about predicting the optimal candidate but rather about general acceptability patterns also including suboptimal candidates.

Finally, the observation that some speakers actually use no clitics after focused (and fronted) non-animate definite direct objects, while others accept it but do not use it, and that in the experiment the acceptability of both versions (with and without clitic) seems to depend on the gender match condition, suggests that the grammaticalization of the use of clitic pronouns after focused definite non-animate direct objects is not fully completed. This is not surprising, given that the use of clitic pronouns after full determiner phrase-direct objects is generally rather new (cf. von Heusinger & Onea 2008 for a diachronic discussion).

To summarize, the Romanian data are perfectly in line with the predictions made by the proposal that there is a grammatical level of alternative restriction in alternative semantics. Nonetheless more research, both on Romanian and cross linguistically, seems necessary to fully confirm the claims.

#### 4. Summary

In this paper we have shown how grammatical restrictions on focal alternatives can be modeled, and presented evidence from Romanian supporting the idea of grammatical restrictions in alternative semantics. In particular we have argued that in Romanian, in cases in which the presence of a clitic pronoun after a focused direct object is optional, i.e. not grammatically triggered by some independent mechanism such as differential object marking or topicalization, it contributes a backgrounded gender feature to the semantic composition, which restricts the set of alternatives to the focused expression at the grammatical level.

We have shown how such an assumption accounts for differences in the acceptability of the omission of the clitic pronoun in answers to *wh*-questions which enumerate alternatives of different grammatical genders.

In addition, we have shown that the mechanism postulated for backgrounded material in general not only accounts for the cases of clitic pronouns after focused arguments but is also compatible with an economic treatment of selectional restrictions contributed by verbs. In these cases, the Principle of Backgrounded Material blocks the composition of alternatives that violate selectional restrictions without predicting non-interpretability or ungrammaticality for cases in which selectional restrictions are violated in general.

However, the Principle of Backgrounded Material presented in this paper is restricted to predicative backgrounded material. For further research the question arises whether it can be generalized to include existential presuppositions. In particular it has been argued that modeling definite descriptions in Alternative Semantics poses problems to semantic theories. The principle of backgrounded material therefore needs to be generalized to capture presuppositions as well, and with such a modification the system should predict the problematic behavior of definite descriptions in Alternative Semantics via projection properties of presuppositions.

Finally, additional empirical research is necessary to check whether the predictions of assuming a level of grammatical alternative-restrictions are ultimately borne out or not. The Romanian data presented in this paper can only be considered as a first step.

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