Gergely Kamper *Differential Object Marking*[*]

1. Introduction

There are a number of languages with overt morphological case-marking which do not mark all their objects uniformly. This paper is going to deal with languages that mark only a subset of their objects overtly and another subset is never marked or is optionally marked morphologically. Following Aissen (2002 and references therein) I will call this phenomenon Differential Object Marking (DOM).

DOM, nevertheless, takes different forms in the different languages. The background on which it is based is at least threefold. Aissen (2002) discusses phenomena where DOM stands on semantic and pragmatic grounds. In the languages that are relevant from that aspect it is the pragmatic characteristics of the object that decide whether it is case-marked obligatorily or optionally, or case-marking is excluded.

(1)

    a. Sinhalese: object case-marking is optional, but only animate referring objects may be case marked

    b. Hebrew: object case-marking is obligatory, but only definite objects are case-marked

    c. Romanian: object case-marking is obligatory for animate pronouns and proper nouns, optional for other sets and excluded for yet another.

In Hungarian it is the morphology of the object that determines overt accusative marking.

(2)   Hungarian

    Object case-marking is optional in the presence of the 1st or 2nd person possessive suffix, but it is compulsory with the 3rd person possessive suffix.

In Chichewa it is the word order that interacts with accusative case-marking.

(3) Chichewa
   Object case-marking is obligatory when the verb and the object are not adjacent, it is optional when the Verb and the object are adjacent (see Baker 1986 for reference).

In this paper I will first discuss Aissen's (2002) views on differential case marking of direct objects with certain pragmatic characteristics and I will also introduce her analysis of the phenomenon within the framework of Optimality Theory. I will then proceed to instances of DOM referred to in (2) and (3), and try to formalize these with the help of similar constraints.

2. Pragmatic DOM (Aissen 2002)

2.1. Varieties of pragmatic DOM

Although pragmatically based DOM is surprisingly widespread in disparate languages of the world, it is far from uniform. For example, in Pitjantjatjara, a Pama-Nyungan language from Australia pronouns and proper name objects are always case-marked ((4a) and (4b) respectively), whereas other objects, whether they be human referring, definite or indefinite, are never case-marked ((4c) and (4d) respectively).

(4) Pitjantjatjara
   a. Tjitji-ngku Billynya nya-ngu.
      child-ERG Billy.ACC see-PAST
      'The child saw Billy.'
   b. Tjitji-ngku ngayunya nya-ngu.
      child-ERG 1SG.ACC see-PAST
      'The child saw me.'

   c. Billy-lu   tjitji nya-ngu.
      Billy-ERG child see-PAST
      'Billy saw the child.'

   d. Ngayulunatju   punu kati-ngu.
      1SG.NOM.REFL wood bring-PAST
      'I brought the wood all by myself.'

A different system is at work in Malayalam, a Dravidian language. Here only animate objects receive accusative case ((5a) and (5b)), while inanimate ones do not ((5c) and (5d)) unless they are objects of worship (5e).

(5) Malayalam
    a. avan kuʈʈiye   aʈiccu
       he   child.ACC beat-PAST
       'He beat the child.'
    b. avan oru patuvine   vaaɲɲi.
       he   a   cow.ACC buy-PAST
       'He bought a cow.'
    c. ɲaan teeɲɲa   vaaɲɲi.
       I   coconut buy-PAST
       'I bought some coconut.'
    d. avan pustakam vaayiccu
       he   book   read-PAST
       'He read the book.'
    e. avaɭ ʃilpatte   araadhiccu
       she statue.ACC worship-PAST
       'She worshipped the statue.'

These sentences exemplify languages in which one semantic feature, namely either definiteness or animacy determines which of the direct objects will be overtly case marked and which will not. As we will see later on, there are several disparate languages where DOM works along these same lines. However, it is not always so. In many other languages both characteristics simultaneously play a role in the shaping of DOM, and the presence or absence of overt case-marking depends on both the animacy and the definiteness of the object.

2.2. Aissen's OT-model for Differential Object Marking

2.2.1. Markedness Reversal

The notion of DOM originates from functional grammarians. Aissen's formalization of their ideas is shown in (6):

(6)   The higher in prominence a direct object, the more likely it is to be overtly case-marked.

The question now arises how the prominence referred to in (6) is determined. Based on (4) and (5) and similar examples from a number of disparate languages the prominence scales in (7) can be established:

(7)   Prominence scales:
      a. Animacy: Human > Animate > Inanimate

      b. Definiteness: Personal pronoun > Proper name > Definite NP > Indefinite specific NP > Non-specific NP

Empirically, what we see in languages with DOM is that, if a direct object at some point on one of these scales is case-marked, all other direct objects higher on the same scale will be case-marked as well. Lower ranked objects are not necessarily case-marked. As (4) and (5) show some languages use one scale whereas others use the other. There are also languages, like for example Romanian, in which both scales are relevant. However, (6) holds in all cases. Languages differ in which scale they use (or if they use both scales), and also in where the point above which accusative case-marking is optional or obligatory is.

One might wonder what motivation lies behind these scales, why they are relevant and why they are ordered the way they are. Aissen's claim is that intuitively the objects that should primarily be case-marked are the ones that resemble subjects to a greater extent. Although it is not a question of disambiguating between subjects and objects, it can be argued that the prominence scales of (7), which show the order of object markedness, are the exact opposites of the prominence scales relevant for the markedness of subjects.

In other words, what is unmarked for an object is exactly what is marked for a subject.[1] Comrie (1979:19) summarizes the phenomenon like this:

> ...in natural languages, certain grammatical relations tend to be characterized by certain features, in particular [that] subjects tend to be definite, animate, and topic (thematic); while direct objects tend to be indefinite, inanimate, and rhematic.

This phenomenon has been called Markedness Reversal in the literature (see Aissen 2002 for references). If all this holds then it clearly predicts what is justified by the empirical facts: if for example a definite NP is always case-marked when it appears as a direct object, every NP ranked higher on the definiteness scale (i.e. proper names and personal pronouns in this case) will be case-marked as direct objects as well because the more an object resembles a subject, the more necessary it is for it to be overtly marked as accusative.

Let us now turn to the formalization of these observations.

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[1] A clear distinction must be made here between semantic markedness which is used for establishing the ranking of an NP on the animacy or definiteness scale and morphological markedness, which, on the other hand, is what is or is not expressed by overt case-marking.

2.3. Harmonic Alignment

To derive the proper violable constraints within an Optimality Theoretical framework Aissen (2002) makes use of the notion of Harmonic Alignment. Harmonic Alignment was first introduced for phonology (see Aissen 2002 for references). The basic idea is that there are two scales one of which is binary. This is called Relational Scale. The high-ranking element of the binary scale is associated with the elements of the other scale left to right, and the low-ranking element of the binary scale is associated with the elements of the other scale from right to left. This process produces two harmony scales in which the leftmost elements are the most harmonic combinations whereas the rightmost ones are the least harmonic. Let us see how Harmonic Alignment helps us formalize the phenomenon of Differential Object Marking.

2.4. Deriving Constraints

2.4.1. Animacy

If we want to express the Markedness Reversal that has been discussed above by using Harmonic Alignment we need to establish two scales that may be aligned with respect to each other. The first one is the Relational Scale, which includes the grammatical functions of subject and object, whereas the members of the animacy scale of (7a) should appear on the second one. The two scales are shown in (8):

(8)
  a. Relational Scale: Subject > Object

  b. Animacy Scale: Hum(an) > Anim(ate) > Inan(imate)

If Harmonic Alignment is applied to these scales, that is the higher ranking element of the relational scale is associated with the elements of the animacy scale from left to right and the low-ranking one is associated with the same elements from right to left, the harmony scales of (9) will be achieved:

(9)
  a. Su/Hum > Su/Anim > Su/Inan

  b. Obj/Inan > Obj/Anim > Obj/Hum

By reversing these hierarchies we can then derive the markedness constraints that work against the above combinations of grammatical functions and members of the animacy scale. In Aissen's system the ranking of these constraints is universal as the scales themselves are universal.

(10)

      a. *Su/Inan ⋟ *Su/Anim ⋟ *Su/Hum

      b. *Obj/Hum ⋟ * Obj/Anim ⋟ *Obj/Inan

The harmonic scales in (9) show that an object is least marked when it is inanimate and is most marked when it is human, whereas the constraint ranking in (10) indicates that for this very reason human objects are to be avoided more than animate objects or inanimate ones.

2.4.2. Definiteness

We can give the Definition Scale of (7b) the same treatment with respect to the same binary scale as was used in 2.4.1.

(11)

      a. Relational Scale: Subject > Object

      b. Definiteness Scale: Personal pronoun > Proper name > Definite NP > Indefinite specific NP > Non-specific NP

By applying Harmonic Alignment again we can establish the harmony scales of (12):

(12)

      a. Su/Pro ⋟ Su/PN ⋟ Su/Def ⋟ Su/Spec ⋟ Su/NSpec

      b. Obj/NSpec ⋟ Obj/Spec ⋟ Obj/Def ⋟ Obj/PN ⋟ Obj/Pro

Following the same pattern as we did in connection with the animacy scale the constraint rankings of (13) are established.

(13)

      a. *Su/NSpec ⋟ *Su/Spec ⋟ *Su/Def ⋟ *Su/PN ⋟ *Su/Pro

      b. *Obj/Pro ⋟ *Obj/PN ⋟ *Obj/Def ⋟ *Obj/Spec ⋟ *Obj/Nspec

5. Iconicity and Economy

2.5.1. Forcing overt case-marking

Having derived the rankings of these constraints one might be led to believe that in the various languages of the world the more marked of these associations are avoided. However, this is not the case. Languages do not

avoid any of these combinations, but those with DOM tend to differentiate between them by using morphological case-marking. DOM is realized by the overt accusative marking of marked combinations, which contrasts with the zero case marking of unmarked ones. As Aissen puts it: 'The morphology of DOM then is *privative*: zero expression contrasts with audible expression.' (2002:11).

Aissen assumes that inputs do not contain any specification for morphological case, but it is added by GEN. Consequently the absence or presence of morphological case in the candidates cannot be due to input-output faithfulness.

Thus if we want to formalize the DOM phenomenon in an Optimality Theoretical framework, we need a constraint that penalizes the absence of overt case-specification in these structures. In Aissen's system this constraint is *Øc.

(14)   *Øc 'STAR ZERO'
       penalizes the absence of a value for the feature CASE.

We now have a violable constraint that forces overt case-marking given the proper ranking. The next step is to link it to the constraints established in (10) and (13), which characterize the relative markedness of objects. Aissen suggests the tool for doing this should be Local Conjunction (Smolensky 1995). Local Conjunction is the combination of two different constraints into one. To put it simply, this newly formed constraint is violated in a domain if both of the original constraints are violated, and is universally ranked higher than either of its two components.

Aissen's assumption is that the Local Conjunction of *Øc with the hierarchies of (10) and (13) will preserve the rankings of those hierarchies thus yielding the final hierarchies in (15), which characterize the zero case-marking of objects.

(15)   Local Conjunction of *Øc with the object related constraint hierarchies

Local conjunction of *Øc with hierarchy on object animacy	Local conjunction of *Øc with the hierarchy of object definiteness
*OBJ/Hum & *Øc » *OBJ/Anim & *Øc » *OBJ/Inan & *Øc	*OBJ/Pro & *Øc » *OBJ/PN & *Øc » *OBJ/Def & *Øc » *OBJ/Spec & *Øc » *OBJ/NSpec & *Øc

These constraints will favour overt case-marking for marked associations and thus we could say that they are *iconicity* constraints inasmuch as iconicity is something that forces languages to morphologically mark elements that are semantically marked. The ranking in (15) ensures that if an object type is

case-marked in a language all other object types higher up on the relevant scale will be case-marked as well.

2.5.2. Getting rid of overt case-marking

If we left it at that, all objects, marked or unmarked semantically, would be marked morphologically. However, this is exactly what does not happen in languages with DOM. Therefore we must find an economy constraint that penalizes overt case-marking. Aissen suggests that this constraint be *STRUCc.

(16)   *STRUCc
        penalizes a value for the morphological category CASE.

*STRUCc can enter the hierarchies of (15) at any point thus enforcing the absence of overt case-marking of every object type appearing in the dominated constraints.

Thus Differential Object Marking seems to occur due to a tension between iconicity and economy. In every structure there is a constraint that requires overt case-marking of the direct object, whereas another is working against it.
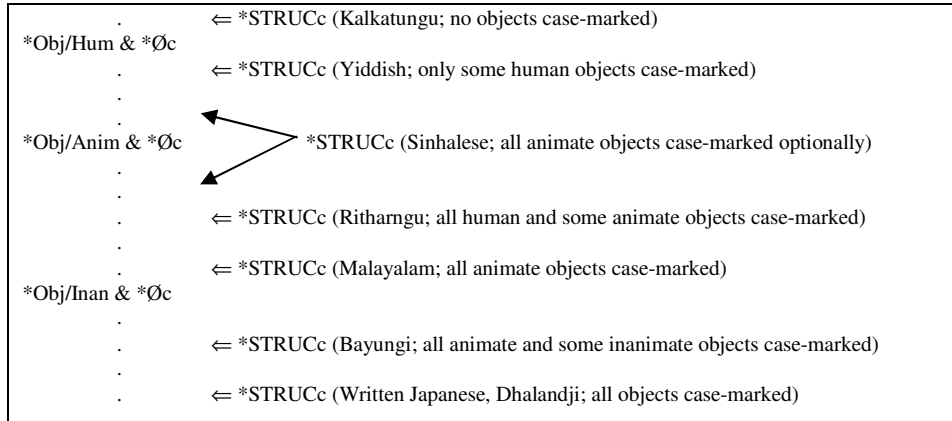
In some languages only one of the animacy and definiteness scales plays a role in the realization of DOM, but in others both scales are relevant. In the following section we will see a few examples for all three.

2.6. Pragmatic DOM in the different languages

2.6.1. One Dimensional DOM – animacy or definiteness

If we place *STRUCc somewhere into the constraint hierarchy of object animacy we can account for DOM in languages where the presence or absence of overt case-marking of the direct object hinges on the animacy of the object. Where some of the languages relevant here interpolate *STRUCc into this hierarchy is shown in the table in (17).

(17)

```
          .              ⇐ *STRUCc (Kalkatungu; no objects case-marked)
*Obj/Hum & *Øc
          .              ⇐ *STRUCc (Yiddish; only some human objects case-marked)
          .
          .
*Obj/Anim & *Øc      ╲       *STRUCc (Sinhalese; all animate objects case-marked optionally)
          .       ╱
          .
          .              ⇐ *STRUCc (Ritharngu; all human and some animate objects case-marked)
          .
          .              ⇐ *STRUCc (Malayalam; all animate objects case-marked)
*Obj/Inan & *Øc
          .              ⇐ *STRUCc (Bayungi; all animate and some inanimate objects case-marked)
          .
          .              ⇐ *STRUCc (Written Japanese, Dhalandji; all objects case-marked)
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As we have seen, Malayalam is a language where DOM is affected by animacy. The examples in (5) are repeated here as (18) for convenience's sake.

(18)   Malayalam
    a. avan kuʈʈiye   aʈiccu
      he   child.ACC beat-PAST
      'He beat the child.'
    b. avan oru patuvine   vaaɲɲi.
      he   a cow.ACC buy-PAST
      'He bought a cow.'
    c. ɲaan teeɲɲa   vaaɲɲi.
      I   coconut buy-PAST
      'I bought some coconut.'
    d. avan pustakam vaayiccu
      he   book   read-PAST
      He read the book.'
    e. avaɭ ʃilpatte   araadhiccu
      she statue.ACC worship-PAST
      'She worshipped the statue.'

(18) shows us that Malayalam ranks *STRUCc above *Obj/Inan & *Øc. *STRUCc then will stop overt case-marking from emerging whenever the direct object is inanimate. (18) is also telling in the sense that what is considered animate can vary among cultures. In Malayalam objects of worship are taken to be on a par with animates as far as overt case-marking is concerned.

      If (17) is correct and the ranking of the locally conjoined constraints therein is indeed universal then it predicts that there will be no languages in which only semantically unmarked objects will be morphologically case-

marked. That is no language will overtly case-mark inanimate direct objects without case-marking animates and humans as well. Aissen herself notes that she is not aware of the existence of any such language.

A problem that arises in (17) is the ranking of *STRUCc in Sinhalese. In this language inanimate objects are never overtly marked, and human objects always receive the accusative. Animate objects are case-marked optionally. Within the framework of Optimality Theory there are many ways to account for optionality, but from the aspect of DOM it will suffice to apply the simplest solution. The claim is that *STRUCc reranks with *Obj/Anim & *Øc, which means that there are two evaluations of the same input, one where it dominates *Obj/Anim & *Øc, and one where it is dominated by it. Either evaluation will result in a different winning candidate.

The situation is somewhat simpler when we examine the interpolation of *STRUCc into the constraint hierarchy of object definiteness inasmuch as there is no language dependent variation as to which category a direct object belongs to.

(19)

. *Obj/Pro & *Øc	⇐ *STRUCc (Kalkatungu; no objects case-marked)
. . *Obj/PN & *Øc	⇐ *STRUCc (Catalan; only pronoun objects case-marked)
. . *Obj/Def & *Øc	⇐ *STRUCc (Pitjantjatjara; only pronoun and PN objects case-marked)
. . *Obj/Spec & *Øc	⇐ *STRUCc (Hebrew; only pronoun, PN and definite objects case-marked)
. . *Obj/NSpec & *Øc	⇐ *STRUCc (Turkish; all objects case-marked except non-specific ones)
	⇐ *STRUCc (Written Japanese, Dhalandji; all objects case-marked)

In a language where DOM is based on the definiteness of the direct objects the presence or absence of overt accusative marking will hinge on whether the relevant constraint dominates *STRUCc or is dominated by it.

An example is Hebrew, where *STRUCc outranks the two universally lowest ranked constraints of the definiteness hierarchy, therefore specific indefinite and non-specific indefinite objects will not be overtly case-marked whereas definite, proper name, and pronoun objects will get overt morphological case-marking.

(20)   Hebrew
      a. Ha-seret   her'a   'et-ha-milxama.
         the-movie showed ACC-the-war
         'The movie showed the war.'
      b. Ha-seret   her'a   (*'et-) milxama.
         the movie showed (*ACC-)war
         'The movie showed a war.'

2.6.2. Two Dimensional DOM

Other languages use both the animacy and the definiteness scale to decide whether an object will be overtly case-marked or not. For example in Romanian only objects that are animate referring and specific are overtly case-marked. Aissen (2002) calls this phenomenon two dimensional DOM. Languages belonging to this category include Romanian, Persian, Hindi and 12th century Spanish.

    In order to achieve a pattern for two dimensional DOM Aissen combines the animacy and the definiteness scales. The result is shown in (21).

(21)
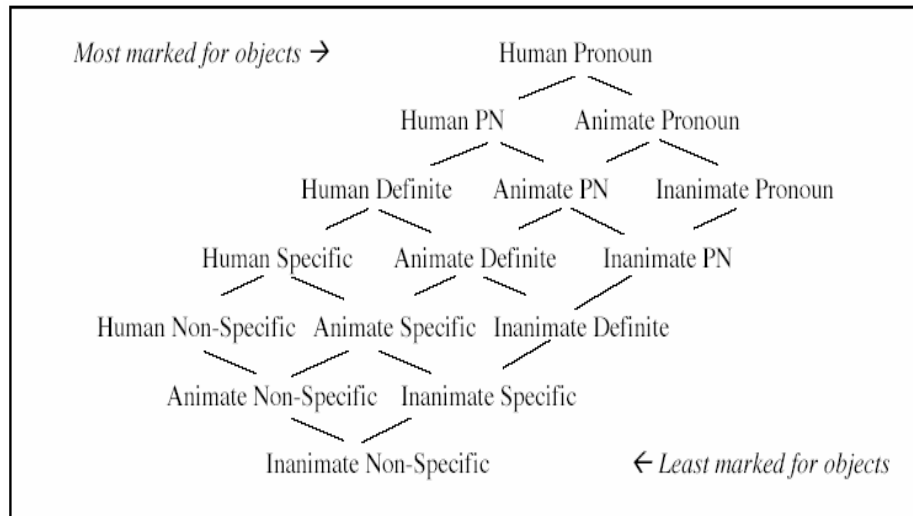
(21) predicts that DOM will spread from the top of the table towards the bottom with human pronouns being the most marked objects and inanimate non-specific ones being the least marked ones. Aissen claims that (22) is a true statement as to the structure in (21):

(22)   If in (21), a dominates b, then:
        a. if an object of type b may be case-marked, then all objects of type a may be case-marked.
        b. if an object of type b must be case-marked, then all objects of type a must be case-marked.
        c. if no object of type a can be case-marked, then no object of type b can be case-marked.

We must note though, that the combinations do not have fixed rankings horizontally. Only a combination higher up vertically outranks the ones below it.

Now we need to turn this hierarchy into a ranking of constraints. To derive the relevant constraints Aissen again turns to the tool of Local Conjunction. Firstly, we conjoin the hierarchy on object animacy (10b) to the hierarchy on object definiteness (13b). The resulting hierarchy will correspond to (21). The highest ranked constraint is *Obj/Pro & *Obj/Hum, and the lowest ranked is *Obj/NSpec & *Obj/Inan. A further step is to conjoin these newly formed constraints to *Øc, thus linking it to case-marking phenomena.

A language with two dimensional DOM is Hindi. Hindi requires overt case-marking of all human objects except indefinite non-specific ones. Overt marking is optional for inanimates, but only if they are definite. (23) introduces the constraint ranking based on the hierarchy in (21) with respect to the relative ranking of *STRUCc in Hindi.

(23)
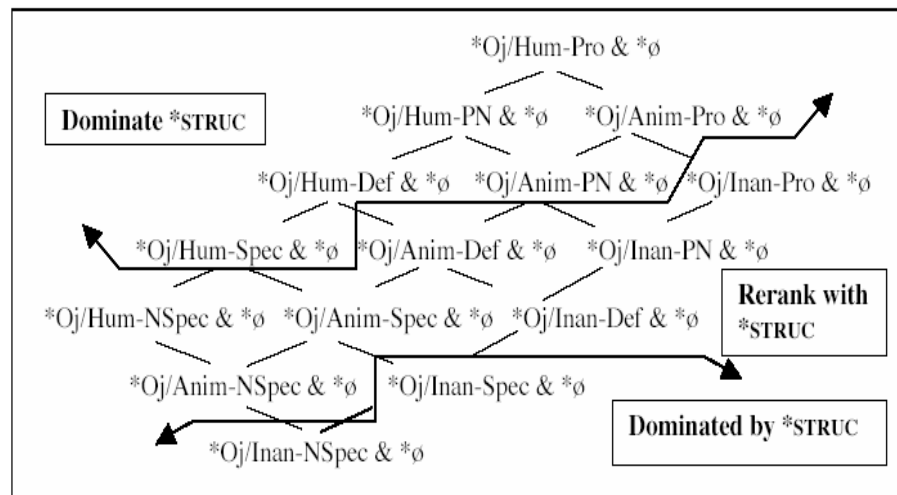
The constraints above the upper line outrank *STRUCc, which results in the overt case-marking of the object types appearing therein. The constraints below the lower line are dominated by *STRUCc and therefore the object

types in them will never be case-marked. There are, however, a number of constraints between the two lines as well. With these *STRUCc reranks, which means that the object types of these constraints will be case-marked optionally (cf. Sinhalese in (17)).

Two dimensional DOM works very much along the same lines in other languages as well. There is a set of objects with obligatory and another with optional case-marking, whereas a third set is never marked morphologically.

3. Morphological DOM

3.1. Accusative marking in Hungarian

Aissen's system only gives an account of Differential Object Marking in languages in which it is based on semantic or pragmatic grounds, namely on the animacy and/or the definiteness of the object. However, let us take a closer look at data from Hungarian in (24).

(24)   Hungarian
        a. Felvettem   a   kalapom(at).
           put-on-PAST-1s the hat-my.(ACC).
           'I put on my hat.'
        b. Megetetted   a   kutyád(at).
           feed-PAST-2s the dog-your.(ACC)
           'You fed your dog.'
        c. Megetettük   a   fiunk(at)
           feed-PAST-1pl the son-our.(ACC)
           'We fed our son.'
        d. Elvittem   Jánosom(at)   az állatkertbe.
           take-PAST-1s John-my.(ACC) the zoo-SUFF
           'I took my John to the zoo.'
        e. Téged(et) választalak.
           you.ACC choose-1s
           'I choose you.'
        f. Megcsókolta   a *barátnője[2]   /barátnőjét.
           kiss-PAST-3s   the girlfriend-his/girlfriend-his.(ACC)
           'He kissed his girlfriend.'

In Hungarian the potential absence of overt accusative case clearly hinges on the presence or absence of the 1st or 2nd person possessive suffix. Should the direct object bear either of these, overt accusative case-marking is optional.[3]

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[2] Grammatical in the sense 'His girlfriend kissed him'.
[3] Note that in a number of cases, although case-marking is clearly optional, most speakers tend to find one of the options degraded, especially with personal pronouns and in the plurals. In

At first glance one might think that this has to do with the definiteness scale, as these objects are clearly placeable thereon. We may even be tempted to establish its own category. However, this clearly does not work. Let us recall (6) repeated here as (25).

(25)   The higher in prominence a direct object, the more likely it is to be overtly case-marked.

By (25) then Hungarian direct objects would have to be placed at the bottom of the definiteness scale, as all other objects are obligatorily case-marked. It could hardly be claimed that a nominal like that is placed below non-specific indefinite NPs on a scale like (7b).

Note also that first and second person personal pronouns bear the same suffix when in the accusative (independent of the accusative suffix itself), although in these cases this suffix does not mark possession.

Therefore we must turn to other solutions if we want to find an explanation as to what happens to accusative case-marking in these sentences.

3.2. The Constraints

In these instances of DOM it is an object with a 1st or 2nd person possessive suffix that makes overt case-marking optional. Still going along the same lines as Aissen did with pragmatic DOM, we can then claim that for possessed objects[4] it is an unmarked situation to appear in a sentence as direct objects, therefore case-marking has a tendency to 'forget' about them. On the other hand the 3rd person possessive suffix does not trigger any such process. We can then establish the following scales[5] (following Aissen 1999 and references therein I will call the 1st and 2nd persons local persons):

(26)

    a. Subject > Object

    b. Non-Locally possessed (NLPos) > Locally possessed (LPos)

If we apply Harmonic Alignment to these scales, the hierarchies in (27) will be established:

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everyday speech *téged* is clearly preferred over *tégedet* in sentences like (24e), and *fiunkat* is much more frequent than *fiunk* in sentences like (24c).

[4] For the sake of simplicity I will call these objects possessed, although note that the relevant suffixes do not always mark possession semantically (cf. 3.1.).

[5] Of course such scales stand on much more solid ground if they are based on data from a number of languages. I now understand that a very similar process occurs in Finnish This is certainly an area for further research.

(27)

      a. Su/NLPos > Su/LPos

      b. Obj/LPos > Obj/NLPos

In turn we can derive the constraints in (28):

(28)

      a. *Su/LPos > *Su/NLPos

      b. *Obj/NLPos > *Obj/LPos

As what happens on the surface is very similar to what happened in the case of pragmatic DOM we can claim that Aissen's two basic constraints, *Øc and *STRUCc ((14) and (16) respectively) are still valid. Clearly there is a constraint working against the appearance of morphological case (*STRUCc), but there must be another one that forces direct objects to be overtly marked (*Øc).

      We must then link *Øc to the constraint hierarchy in (28) and Local Conjunction is still a valid tool to do so.

(29)   Local Conjunction of *Øc to the possessed object hierarchy
        *Obj/NLPos & *Øc >> *Obj/LPos & *Øc

This hierarchy will make sure that if objects with 1st or 2nd person possessive suffixes are overtly case-marked the ones with 3rd person possessive suffixes will be case-marked as well.

      The next step is the interpolation of *STRUCc into this system. In Hungarian non-locally possessed objects will always be overtly case-marked, *Obj/NLPos & *Øc clearly outranks *STRUCc (see (30)). On the other hand locally possessed objects are optionally case-marked, which fact entails that *STRUCc reranks with *Obj/LPos & *Øc thus the same input will result in two different winning candidates ((31a) and (31b) respectively).

      It is now time to draw the tableaux. In the input the nominal is only specified as a patient and it is also given whether it is locally or non-locally possessed. Only those candidates are taken into consideration where the Grammatical Function of the nominal in question is direct object.

(30)

Arg: Patient **Obj: Non-locally Possessed**	*Obj/NLPos & *Øc	*STRUCc	*Obj/LPos & *Øc
GF: Obj Obj: Non-locally Possessed Case: Acc		*	
GF: Obj Obj: Non-locally Possessed Case: -	*!		*

(31) a.

Arg: Patient Obj: Locally Possessed	*Obj/NLPos & *Øc	*STRUCc	*Obj/LPos & *Øc

GF: Obj
  Obj: Locally Possessed
  Case: Acc
		*!	

GF: Obj
  Obj: Locally Possessed
  Case: -
			*

⇨ (marks second row)

(31) b.

Arg: Patient Obj: Locally Possessed	*Obj/NLPos & *Øc	*Obj/LPos & *Øc	*STRUCc

GF: Obj
  Obj: Locally Possessed
  Case: Acc
			*

GF: Obj
  Obj: Locally Possessed
  Case: -
		*!	

⇨ (marks first row)

Further research into the interaction of overt case-marking and other suffixes might show that this hierarchy is but a subhierarchy of a larger domain.

4. Syntactic DOM

4.1. Accusative marking in Chichewa

In Chichewa the presence or absence of accusative case-marking is decided on completely different grounds. The object is overtly case-marked (by a suffix that appears on the verb) when it is not adjacent to the verb. When verb and object are adjacent case-marking is optional.[6]

(32) Chichewa[7]
  a. Mdyerekezi akunamiza abusa tsopano
     devil SP-PRES-deceive-ASP priests now
     'The devil is deceiving the priests now.'
  b. Mdyerekezi aku**wa**namiza   abusa tsopano
     devil   SP-PRES-OP-deceive-ASP priests now
     'The devil is deceiving the priests now.'
  c. Mdyerekezi aku**wa**namiza   tsopano abusa.
     devil   SP-PRES-OP-deceive-ASP now   priests
     'The devil is deceiving the priests now.'

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[6] Mchombo (personal communication) notes that in sentences like (32b) where the object is adjacent to the verb and there is overt case-marking, the object is prosodically marked as extra-sentential. However, he accepts (32b) as perfectly grammatical so I am going to proceed along those lines.
[7] Data is taken from Baker (1988).

(32)   Chichewa[7]
       d. *Mdyerekezi akunamiza   tsopano abusa
          devil   SP-PRES-deceive-ASP now   priests
          'The devil is deceiving the priests now.'

In the case of pragmatic DOM Aissen concluded that the objects that are morphologically marked are the ones that most resemble subjects although there is no need to disambiguate between the two arguments of the verb. In Chichewa it obviously cannot be so. Nevertheless, we might see the phenomenon like this: Chichewa is an SVO language, therefore the object follows the verb. If the argument is to the immediate right of the verb, as in (32a) and in (32b), the situation is 'normal', the object occupies an unmarked position. However, when the argument is preceded by an adjunct, as in (32c) and in (32d), the object occupies a position which is marked.

Thus similarly to pragmatic DOM, morphological markedness of the object is more necessary if the nominal in question is more marked, only this time it is marked syntactically rather than semantically.

4.2. The constraints

As what lies behind this system of DOM is still the tension between iconicity and economy, we have good reason to claim that the two basic constraints are again *Øc and *STRUCc. The question is what constraints they interact with this time. As the phenomenon is apparently based on the relative positions of the nominal in question and its governor, the verb, we should look for a constraint that forces elements to appear in certain positions. Alignment constraints are exactly like that (cf. Grimshaw 1998). As this time we deal with accusative case that is aligned to the right of the verb the necessary constraint to posit is ACC(R).

(33)   ACC(R)
       The element marked as accusative is aligned to the immediate right of the verb.

If ranked high enough, this constraint eliminates candidates in which there is an extra element between the verb and the direct object. We could thus get rid of the ungrammatical (32d) but at the same time we would eliminate the perfectly grammatical (32c) as well, where the object is not adjacent to the verb, either. What we need is a constraint that stops candidates where the object is not on the immediate right of the verb *and* is not case-marked. To achieve this we could again turn to Local Conjunction. If we conjoin ACC(R) and *Øc we will have a constraint that does exactly what we want it to do. Having eliminated the ungrammatical candidate we have three others remaining, two with overt case-marking, one without overt case-marking, but

with verb-object adjacency. The required result can be achieved with the use of *STRUCc and *Øc. The latter one stands on its own now without being conjoined to another constraint. As the Local Conjunction of two constraints is universally ranked higher than the original constraints (Smolensky 1995), the rankings discussed here and shown in (34) are perfectly valid.

(34)   a.

	Verb, Object, Adjective	Acc(R) & *Øc	*Øc	*STRUCc
⇨	V O$_{case}$ A			*
⇨	V A O$_{case}$			*
	V O A		*!	
	V A O	*!		

In (34a) the winning candidates are the ones where the object is specified for case as the relatively highly ranked constraint *Øc eliminates the candidate without overt case-marking. However, we must again claim that *STRUCc reranks, this time with *Øc, as the grammaticality of the third candidate requires an explanation.

(34)   b.

	Verb, Object, Adjective	Acc(R) & *Øc	*STRUCc	*Øc
	V O$_{case}$ A		*!	
	V A O$_{case}$		*!	
⇨	V O A			*
	V A O	*!		

If *STRUCc is ranked higher than *Øc, the candidate without overt case-marking will emerge as the winner.

5. Conclusion

We have found that there are a number of different features that might trigger the emergence of Differential Object Marking in the different languages. Very often it is the pragmatic-semantic characteristics of the direct object that decide whether case-marking is obligatory, optional or excluded. In some languages it is the animacy, in others it is the definiteness of the object that plays a vital role. In another set of languages both are relevant. In all these cases, however, it is claimed that objects that resemble subjects more are more likely to be overtly case-marked.

In other languages it is the morphology of the verb that interacts with overt accusative marking. In Hungarian overt case-marking is optional if the nominal is marked with the first or second person possessive suffix, but it is compulsory when there is a third person possessive suffix.

Yet another system is at work in Chichewa where case-marking of the direct object is only obligatory if the nominal is not adjacent to the verb.

When characterizing these phenomena we found that what causes these variations in object marking is the tension between two principles. Iconicity prefers semantic markedness to be expressed by morphology, whereas economy wants to get rid of structure whenever it is possible. Two constraints play a crucial role in all instances of DOM. *Øc favours iconicity, whereas *STRUCc is an economy constraint. *Øc is linked to the constraints relevant from the point of view of DOM. The means to achieve this is Local Conjunction. It is the relative ranking of these newly ranked constraints and *STRUCc that decides whether a nominal the grammatical function of which is a direct object will or will not be case-marked. On many occasions *STRUCc reranks with another constraint, thus making more than one winning candidates possible.

DOM emerges when marked structures are not avoided but morphologically marked. In pragmatic and morphological DOM the objects that most resemble subjects are overtly case-marked, whereas in syntactic DOM objects are obligatorily case-marked if they occupy a position more marked for an object.

The common factor is that in languages with DOM objects that are not typical from some point of view or another get overt case-marking, whereas more typical ones do not.

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