The Possessor Dative Construction of Modern Hebrew:

Movement as Repel-Based Extremely Local Optimization

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Abstract

Building upon work by Idan Landau (1999), this paper develops an analysis of the Possessor Dative Construction (PDC) of Modern Hebrew as a raising phenomenon. An analysis is proposed in terms of local intra-derivational optimization (Heck and Müller, 2007), borrowing concepts from diverse work in recent years: Stroik (2009) (Repel-based movement), Caha (2009) (Case as a hierarchical functional sequence in syntax), and Reinhart (2003) (Thematic Roles as composed of primitive binary features). Such an approach improves upon a purely Minimalistic one by providing an account for the generation of a possessor carrying Dative case, deriving asymmetries in island effects, avoiding a look-ahead problem, and suggesting a simpler account for the diachronic change from earlier forms of Hebrew.

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1 Introduction

Despite its success and broad adoption in phonology, and despite many varied attempts at applying it to syntax, **Optimality Theory** (Prince and Smolensky, 1993) (**OT**) is still far from seeing similar currency in syntactic theory. The analysis presented here is an attempt to demonstrate that there is much to be gained from applying OT to syntactic phenomena. In particular, I submit that such a system of universal but violable constraints evaluated under a language-specific hierarchy can be fruitfully combined with approaches to syntax framed within the **Minimalist Program** (Chomsky, 1995). In order to do so, I examine a Minimalist analysis (Landau, 1999) of a morphosyntactic phenomenon of Modern Hebrew (the Possessor Dative Construction), the central claim of which I adopt. I present an analysis of the same phenomenon that makes use of the insights gained by the Minimalist analysis and common Minimalist assumptions about syntactic structure, but places them within an OT-based system, thereby providing an explicit account for some questions left open by the original approach.

The **Possessor Dative Construction**, or **PDC**, is a phenomenon in which the semantic possessor of a noun appears syntactically as the indirect object of the clause's main verb. The present work is based largely on the analysis by Idan Landau (1999) (L99), in which PDC in **Modern Hebrew**[1] is demonstrated to be a displacement (movement) phenomenon. Landau notes that much previous work has focussed on PDC in Spanish and French, where PDC is quite similar to Hebrew PDC. Gereon Müller indicates (p.c.) that the core data for PDC in German matches that of Hebrew, and Walid Abd el-Gawad (p.c.) says the situation in at least some variants of Arabic is the same. Nonetheless, for reasons of space and precision, I focus only on Hebrew PDC. My analysis should be extensible to these other languages, possibly with minor adjustments, and may also have ramifications for languages such as English, where PDC is not attested.

The approach to syntactical optimization I adopt is one proposed by Heck and Müller (2007) – **Extremely Local Optimization**, in which, unlike classic OT, constraint evaluation takes place within a derivation, determining at each point only the following step of the derivation. I additionally make use of concepts from various lines of research: I adopt Tanya Reinhardt's (2003) analysis of thematic roles as composed of more primitive binary features; I propose an analysis of Case features based on work by Pavel Caha (2009), whereby Case is analyzed as a sequence of functional projections in syntax; and perhaps most importantly, I pursue Thomas S. Stroik's (2009) concept of Repel-based movement, by which syntactical displacement can be analyzed on a purely local basis, motivated always by an incompatibility of the moved Syntactical Object (SO) with the phrase it is moved out of.

Using these concepts, I develop an analysis of Hebrew PDC in which the initial creation of a Dative-marked possessor is seen as the result of optimization, motivated by constraints of feature economy, and the raising of this possessor to its final location closer to the verb is motivated by violable constraints penalizing certain morphosyntactic

[1]Henceforth, "Hebrew" will exclusively denote Modern Hebrew, and any reference to earlier forms of Hebrew will be explicit in referring to such.

features within certain phrases. I demonstrate that this approach not only matches the empirical precision of Landau's approach, but improves upon it, and suggest ways in which the proposed system may extend to other data as well.

In the following subsections, I first (§1.1) introduce OT and some relevant mechanisms and proposals within it, then (§1.4) present the PDC data (drawn primarily from L99). In the next section (§2), I provide an overview of L99, including open questions which that analysis may raise. In sections 3 and 4, I develop my analysis, and in section 5, I compare it with that of L99. Section 6 presents possible further applications of the system, as well as open questions and suggestions of further inquiry. Section 7 provides a summary.

1.1 Theoretical Background: Optimality Theory

Optimality Theory (OT), originally introduced in Prince and Smolensky (1993), is a generative grammar framework based on the interaction of universal violable constraints. Under OT, grammar consists of three mechanisms:

(1) *Components of Grammar under OT*:

a. CON: the universal set of constraints
b. GEN: a mechanism that generates output candidate structures
c. EVAL: a function that evaluates output candidates against the input under a *language-specific* hierarchy H, ordering the set of candidates from the most to the least optimal for H

All linguistic universals are derived from properties of these mechanisms, and all language-specific features are derived from differences in constraint rankings in H. H is a total ranking of constraints, and every language has only one such ranking, meaning the same constraints and constraint interactions should hold for all phenomena (although in practice, most proposed constrains are only relevant to rather limited empiric domains). Grammaticality of an output is defined in terms of *optimality* – incurring less violations than does any other output candidate for the highest constraint in which the candidates differ on the number of violations incurred.

Presently, I will summarize the standard OT approach before turning to the somewhat modified approach of Extremely Local Optimization.

1.1.1 Classic OT

Classic OT approaches are based on a purely representational model: GEN has full freedom of analysis, so that all possible output candidates are available for every input and EVAL is the only mechanism for selection. Candidates need not be faithful to input in any way – faithfulness is a result only of the Faithfulness class of constraints, which compare input with output and penalize candidates which do not match input in some specific way; as a result, candidates with no similarity to input are irrelevant in most optimizations, losing out to more faithful candidates. At the same time, perfect faithfulness is

penalized by the other class of constraints: Markedness constraints, which evaluate output candidates independently of input and penalize them for certain specific properties or configurations. On this view, there is no hard limit to the amount of change that can occur during a single optimization – multiple diverse modifications can take place in parallel. Although there is no hard limit on modification, the optimal output will always diverge from input only as much as is necessary in order to satisfy Markedness constraints, and only insofar as they dominate conflicting Faithfulness constraint.

One particularly interesting feature of OT is the connection made between language-specific analysis and language typology: because all constraints are universal and only differences in ranking lead to linguistic variation, an OT analysis has automatic typological repercussions. Positing two constraints, A and B, implies a factorial typology, in which a language either ranks them $[\![\text{A} \gg \text{B}]\!]$ ($\gg$ denotes "ranked higher than") or $[\![\text{B} \gg \text{A}]\!]$. With every constraint that is added, the factorial typology predicted becomes more intricate. Ultimately, positing any set of constraints implies a certain range of variation, with discrete possibilities and non-possibilities, which can be investigated by empirical methods and confirmed or rejected on an empirical basis.

Taken to the extreme, classic OT hypothesizes that all of grammar can be reduced to a set of universal violable constraints, such that research in grammar can be boiled down to "simply" identifying all constraints. However, since the inception of OT certain challenges to this hypothesis have been identified, leading to many proposed modifications to the architecture of OT, some mild and some far-reaching, concerning all three components in (1). Presently, let us turn to one relatively uncontroversial proposal regarding CON, before turning to Extremely Local Optimality, which makes significant modifications to GEN and forms the basis of my analysis.

Harmonic Alignment is a proposed feature of CON which I will make use of. Harmonic Alignment is conceived as an operation that produces a pair of constraint subhierarchies (i.e. partial rankings that presumably hold universally for CON) based on the alignment of two prominence scales, providing, inter alia, a formal implementation of implicational universals. Originally proposed by Prince and Smolensky (1993) to express the relation between syllable structure and sonority, it is defined as follows:

> **Alignment.** Suppose given a binary dimension D_1 with a scale $X > Y$ on its elements X, Y, and another dimension D_2 with a scale $a > b \ldots > z$ on its elements. The harmonic alignment of D_1 and D_2 is the pair of Harmony scales:
> H_x : X/a $\succ$ X/b $\succ \ldots \succ$ X/z
> H_y : Y/z $\succ \ldots \succ$ Y/b $\succ$ Y/a
> The constraint alignment is the pair of constraint hierarchies:
> C_x : *X/Z $\gg \ldots \gg$ *X/B $\gg$ *X/A
> C_y : *Y/A $\gg$ *Y/B $\gg \ldots \gg$ *Y/Z
>
> (Prince and Smolensky, 1993, ex. 212, p. 149)

Note that Avoid or "star" constraints, denoted by an asterisk, are constraints that forbid a certain structure; "$\succ$" denotes "more harmonic than". Harmonic alignment creates constraint subhierarchies, penalizing configurations instantiating an element of each scale together, such that structures instantiating the most prominent element of one scale together with the least prominent element of another are penalized most strictly (that is, penalized by the highest member of the subhierarchy). The constraints in a subhierarchy form a gradient, and each subhierarchy has a fixed internal ranking, allowing any constraint that is not part of the subhierarchy to be interpolated freely above, below, or between its constraints. As well, the two subhierarchies can be ranked freely relative to one another, one starting anywhere above, below, or amongst the constraints of the other, and each subhierarchy's constraints potentially ranked in between those of the other in a given language. As such, the upper parts of a subhierarchy ("*X/Z" and "*Y/A") are the least likely to be superseded by conflicting higher-ranked constraints, and the lower parts are almost certain to have no effect, since they conflict with their higher-ranked counterparts.

Harmonic Alignment plays a central role in work on OT syntax by Judith Aissen (1999, 2003), and will be made use of in the present paper when handling Case alignment and assignment (§3).

1.2 Extremely Local Optimization

Heck and Müller (2007) develop an approach to OT in syntax in which optimization applies cyclically within a derivational. On this view, output optimization takes place after each step of derivation, selecting the next derivational operation (there: Merge, Move, or Agree), with the optimal candidate serving as input for the following step. This approach has empirical advantages over less local optimization in syntax (cf. Müller and Heck) and conceptual advantages over purely derivational Minimalism. Extremely Local Optimization (ELO) allows a natural combination with analyses and insights of Minimalist syntax, in which (i) derivations are driven by local considerations, particularly the featural composition of Syntactic Objects (SOs), and (ii) syntactical structure is derived in discrete cyclical steps, starting at the most deeply embedded SO and proceeding "upwards" to the root node.[2] ELO makes it possible to analyze syntactical phenomena in close conformity to Minimalist work, "merely" replacing inviolable universal constraints with violable constraints resolved under language-specific rankings. Compare this with the common Minimalist approach of positing universal constraints on derivations and using them to determine at each point in derivation which next steps would be licit. While the difference may seem minor, making constraints violable makes it possible to arrive at more general constraints of a strictly universal nature, rendering unnecessary the less-than-elegant Minimalist tendency to sporadically include in constraints various caveats, exceptions, and even the occasional partial constraint ranking (sometimes expressed by one constraint declaring itself void when in conflict with another).

[2]But cf. Stroik (2009) for locality-oriented criticism of common Minimalist assumptions and a purely derivational, OT-free proposal for their remedy.

A further advantage of combining OT, especially of the ELO variety, with Minimalist syntax, is that it allows us to collapse multiple types of restrictions common in Minimalism into the single category of universal, rerankable, violable constraints. Consider the different types of restrictions that a typical Minimalist analysis might assume: (i) local constraints, ruling out certain derivational steps, (ii) output filters, ruling out certain derivations once they have ended, and (iii) meta-derivational rules of Economy, which under some views compare between otherwise licit derivations in order to choose the most economical one.[3] Perhaps ironically, one might argue that unifying these distinct types of restrictions should be a goal of Minimalism, as this may be seen as better for the optimal design of the language faculty. Under ELO, the ideal is to achieve the effects of all of these restrictions using OT's constraint set CON, in which all constraints operate in the same way, and are applied by EVAL always in an entirely local manner. Ideally, constraints over derivational economy could become superfluous as a whole, as the basic mechanism of OT's EVAL enforces minimal violation of constraints and furthermore makes explicit what exactly minimal violation *is* (McCarthy, 2002, §3.2.3). If this is the case, one of the over-arching meta-principles of the Minimalist Program becomes a constant emergent property of grammars, an outcome that seems especially favorable from a Minimalist perspective.

The present paper takes advantage of ELO in conjunction with Minimalist research, and is intended to demonstrate that a combination of OT in this form with Minimalist syntax can be fruitful. Both parts of my analysis (§3, §4) take an explicit ELO approach to derivation.

1.3 Constraint ties in H

McCarthy (2002) notes that classic OT, with its background in phonology, is appropriate for accounting for obligatory processes, but offers little room for optionality. To wit, optionality arises in classic OT iff two candidates emerge as equally optimal (i.e. they incur the same violations on all constraints, so that neither out-performs the other, and no other candidate out-performs their violation profile.) One line of proposals is that H is a partial ordering of constraints, such that the total ordering applied by EVAL is not H itself, but somehow generated such that it has to conform to H (for example, by randomly ordering all unordered subsets of H before each optimization). This type of approach is not uncommon in OT syntax, and I adopt it for the present paper as well. To denote that two constraints are tied, I use "$\circ$"; given a partial ranking $[\![\mathrm{A} \gg \mathrm{B} \circ \mathrm{C}]\!]$, EVAL may apply one of two total rankings: $[\![\mathrm{A} \gg \mathrm{B} \gg \mathrm{C}]\!]$ or $[\![\mathrm{A} \gg \mathrm{C} \gg \mathrm{B}]\!]$.

In combination with ELO, where EVAL applies cyclically, the question arises as to whether a total ordering has to be calculated for each *derivation*, or for each *derivational step*. I make no special claim on this matter, as it would not change the workings and results of my analysis either way.

[3] Of course, not every Minimalist analysis necessarily posits all three types, and any two types might sometimes be explicitly or implicitly conflated.

1.4 Empirical Background: The Possessor Dative Construction

In the Possessor Dative Construction, we find a nominal argument ("Possessor") acting syntactically and morphologically as though it were a verbal argument (Goal, "Indirect Object"):[4]

(2) a. ha-yalda kilkela **le-Dan** et ha-radio. (PDC)
the-girl spoiled DAT-**Dan** ACC the-radio
"The girl broke Dan's radio" (L99, p. 3, ex. 3a)

b. ha-yalda kilkela et ha-radio šel Dan. (Genitive possessor)
the-girl spoiled ACC the-radio GEN Dan
"The girl broke Dan's radio"

As Landau points out, the PDC in (2a) is not completely equivalent to its Genitive counterpart in (2b): PDC carries an implication of affectedness regarding the Dative argument.[5] However, while many previous approaches focussed on this difference in explaining PDC, Landau demonstrates that the affectedness generalization has its limits: in (3) we see an asymmetry between theme and creator roles which, as Landau points out, does not follow from the affectedness analyses.

(3) a. Gil hegdil et ha-tmuna šel Rina. (Genitive possessor)
Gil enlarged ACC the-picture of Rina
"Gil enlarged Rina's picture" [Rina = owner/creator/theme]

b. Gil hegdil le-Rina et ha-tmuna. (Dative possessor)
Gil enlarged to-Rina ACC the-picture.
"Gil enlarged Rina's picture" [Rina ≠ theme]

(L99, p. 5)

Let us look at the properties of PDC, here adapted from those listed in L99 (ex. 16, p. 9).

1.4.1 Property 1: PD arguments can only be interpreted as possessor or creator, and must always be interpreted this way.

Turning away from affectedness analyses, Landau examines the PDC data and boils it down to concrete facts. First, we observe that an object/theme interpretation of the

[4]**Note on transcription:** I adopt the transcription of Hebrew used by Landau: <š> is IPA [ʃ]; <c> is IPA [ts]; <y> is IPA [j]; <‘> is IPA [ʔ]. Other characters are approximately equivalent to their IPA value. Uppercase letters are used to mark proper names, while denoting their lowercase equivalent. This note is included for clarity, although phonetic and phonological information is not a factor in the analyses presented, apart from a suggestion in fn 10.

[5]**Note on the Case exponents:** /et/ "ACC", /le-/ "DAT", and /šel/ "GEN", and their pronominal counterparts, might invite analysis as prepositions rather than Case exponents. Certainly (albeit tangentially), the latter two may be translated as "to" and "of" respectively, as you will find in some examples quoted without change from L99. I assume that the notions of Case and Preposition are on a spectrum (cf. e.g. Caha, 2009); for the purpose of this work I will treat these three exponents as Case markers. These three exponents show up consistently with core arguments of the verb and noun. L99 (fn. 2) notes that the Dative can be shown to be a DP, not a PP.

Dative argument is impossible. Closely related is the fact that only a possession or creation interpretation is available for it, and that PD *must* be associated with such an interpretation, whether or not the argument is interpreted as affected:

(4) Gil šavar le-Rina et ha-miškafayim šel Sigal.
Gil broke to-Rina Acc the-glasses of Sigal
"Gil broke Sigal's glasses on Rina"

The awkward gloss is actually weaker than the precise meaning of [(4)]: a situation in which Gil broke Sigal's glasses to annoy Rina (who, perhaps, bought them), is not enough to make [(4)] felicitous. Again, Rina has to bear some concrete possession relation to the glasses, in this case 'transitory' possession (say, Sigal has lent her glasses to Rina). This state of affairs is brought out by cases which resist 'multiple possession' by nature. In [(5)], where the obligatory requirement to interpret PD as a possessor cannot be satisfied without leaving the genitive phrase uninterpreted, the sentence is ruled out; where it can, the result is fine:

(5) ha-amargan šina le-Rina et ha-šem šel ha-mofa (*šel
the-manager changed to-Rina Acc the-name of the-show (*of
Galit).
Galit)
'The manager changed Rina's name of the show (*of Galit's)'

(L99, p. 7)

1.4.2 Property 2: PD cannot be the possessor of an external argument.

Drawing upon Borer and Grodzinsky (1986), Landau demonstrates that the possessed DP cannot be an external argument – even where this is the only argument (i.e. with unergatives):

(6) a. ha-kelev ne'elam le-Rina. (unaccusative)
the-dog disappeared to-Rina
"Rina's dog disappeared"
b. *ha-kelev hitrocec le-Rina. (unergative)
the-dog ran-around to-Rina
("Rina's dog ran around")

(Ibid.)

1.4.3 Property 3: PD must c-command the possessed DP or its trace.

L99 assumes, following Borer and Grodzinsky, that while in Hebrew the Dative argument may precede the Accusative or vice versa, binding holds asymmetrically, from left to right, between the two. This can be seen, for instance, in reflexivization:

(7) a. natati ‘oto le-‘acmi
I.gave it.Acc Dat-myself
“I gave it to myself”
b. *natati le-‘acmi ‘oto
I.gave Dat-myself it.Acc
(“I gave it to myself”)
c. natati lo et ‘acmi
I.gave Dat.3sg.m Acc myself
“I gave myself to him”
d. *natati et ‘acmi lo
I.gave Acc myself Dat.3sg.m
(“I gave myself to him”)

On this basis, Property 3 can be demonstrated by cases of inalienable possession:

(8) a. Gil šataf et ha-panim le-Rina.
Gil washed Acc the-face to-Rina
“Gil washed Rina’s face for her” *or* “Gil washed his face for Rina”
b. Gil šataf le-Rina et ha-panim.
Gil washed to-Rina Acc the-face
Only: “Gil washed Rina’s face”

(L99, p. 8)

Here, only when the Dative precedes (i.e. c-commands) the Accusative is the former obligatorily read as possessor. This follows naturally if PD must c-command the possessee; on this view, (8b) is PDC, whereas (8a) is not PDC, but rather a Double Object Construction (DOC), in which the Dative argument is interpreted as a benefactive.

The difference between the two readings of (8a) is thus the relation between the Dative argument and its Accusative counterpart. The difference in interpretation space between (8a) and (8b) is then the result of different underlying structure, despite surface similarity – in PDC the Dative must be the possessor of the Accusative, but DOC does not impose such a restriction.

In passives (as in (9)) and unaccusatives, where the DP in [Comp,V] is raised to [Spec,v], PD instead c-commands only the trace of the possessee – PD is raised to [Spec,V], and then the rest of the DP is raised to the vP.

(9) a. ha-pgiša im ha-bos hukdema le-Rina be-ša‘a.
the-meeting with the-boss was-advanced to-Rina in-hour
“Rinas meeting with the boss was moved up an hour”
b. ha-kovec ha-xadaš nimxak le-Gil.
the-file the-new was-erased to-Gil.
“Gil’s new file was erased”

The structure of [(9b)], given our assumptions, is the following:

(10) [IP [DP t1 ha-kovec ha-xadaš]2 nimxak [VP le-Gil1 [V′ tV t2]]]
the-file the-new was-erased to-Gil

(L99, p. 12)

1.4.4 Property 4: Possessive interpretation is constrained by locality.

Landau cites data indicating that for French PDC with inalienable possession, possession is restricted to clausal locality:

> Guéron (1985) notes that the possessor and the body-part in the French inalienable possession construction must be clausemate:
>
> (11) a. Jean semble lui avoir lavé les cheveux.
> John seems him.DAT to.have washed the hair
> "John seems to have washed his hair"
> b. *Jean lui semble avoir lavé les cheveux (Guéron, 1985: ex. 18).
>
> [...] Borer and Grodzinsky (1986) show the same for Hebrew.
>
> (L99, pp. 8)

Following up on this, Landau goes further:

> [L]ocality is not merely clause-bounded, but more constrained. Where the direct object is a complex DP, PD may only be associated with the matrix DP, not the embedded one. Examples are hard to construct [...], however the following pair illustrates the point:
>
> (12) a. Gil ripe le-Rina et ha-gur šel ha-kalba.
> Gil cured to-Rina ACC the-puppy of the-dog.Fem
> "Gil cured the dog's puppy which belongs to Rina"
> b. Gil ripe le-Rina et ha-ima šel ha-gur.
> Gil cured to-Rina ACC the-mother of the-puppy
> "Gil cured the puppy's mother which belongs to Rina"
>
> Notice that in [(12a)] Rina need only own (or at least, hold in her possession) the puppy, not its mother, whereas the opposite holds in [(12b)]. [...] The locality restriction, then, is quite strict: PD may not be seperated [sic] from the possessed DP by either an IP node or more than one DP node.
>
> (Ibid.)

Note that the glosses in (12), shown here as they appear in L99, may be misleading; an English gloss closer to the Hebrew structure would be difficult to parse, if not outright ungrammatical. If one were to attempt it, the gloss for (12a) might read "Gil cured Rina's puppy of the dog", or more literally, "Gil cured on Rina the dog's puppy".

1.4.5 Property 5: PD's possessee can be within a PP only if it is an argumental PP.

Whereas Landau presents the previous properties at the outset, one further generalization arises during analysis:

> All and only argumental PPs are compatible with PDC.
>
> (L99, p. 18)

This fact is demonstrated exhaustively by Landau, but can perhaps be seen easily in the following minimal pair:

(13) a. Gil hitkaleax le-Rina im ha-sabon.
Gil bathed to-Rina with the-soap
"Gil took a shower with Rina's soap"
b. *Gil hitkaleax le-Rina bli ha-sabon.
Gil bathed to-Rina without the-soap
('Gil took a shower without Rina's soap')

(exs. 35a and 36d, ibid.)

What robs some strength from this generalization is, as Landau notes, that "[e]xactly what distinguishes arguments from adjuncts is a notorious problem" (fn. 11, ibid.) Clearly, generalizing about the combination of PDC with argumental vs. non-argumental PPs is problematic when this distinction cannot be made so sharply, but the distinction is nonetheless reasonable and seems to match the data quite well. Lacking the space to discuss this difficult problem in depth, I will assume Landau's analysis regarding PPs is correct.

1.4.6 Summary of the facts

In summary, we may call these five properties the core properties of PDC:

(14) *Core properties of PDC*:
Property 1: A PD argument must always be interpreted as possessor or creator.
Property 2: PD cannot be the possessor of an external argument.
Property 3: PD must c-command the possessed DP or its trace.
Property 4: Possessive interpretation is constrained by locality.
Property 5: PD's possessee can be within a PP only if it is an argumental PP.

Now, having seen the salient facts of the data, we may turn to its analysis. In the following section, I summarize the Minimalist approach taken by L99, the main claim of which (i.e. that PDC is a raising phenomenon) I will, as already mentioned, adopt in my own analysis.

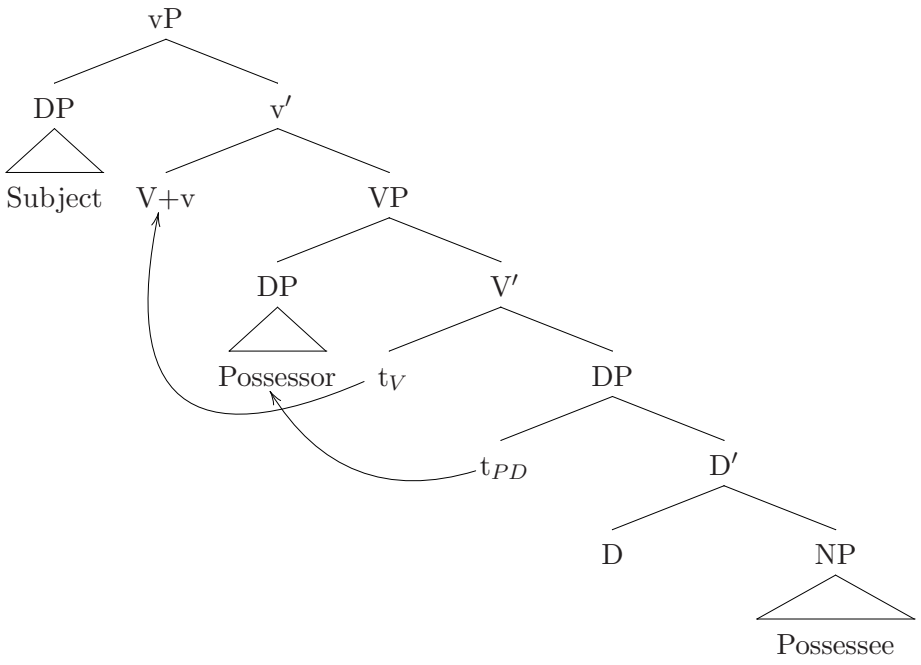
2 Landau's Raising Analysis

Landau claims that the "simplest and most adequate explanation" for the properties of PDC "is a case-driven movement analysis": (L99, p. 9)

(15) a. The possessor is generated in a caseless Spec position within the possessee.
b. It is generated with dative case features.
c. It then raises to check its case features with V.

(Ibid.)

(16)



(L99, p. 10)

Indeed, this analysis requires very few assumptions (besides common Minimalist assumptions regarding movement and feature-checking), in order to derive the phenomena:

(17) *Assumptions of Landau 1999*:
a. The role of Theme is available only for arguments Merged as complement of a Theta-assigning head (V or N).
b. Possessors (whether Dative or Genitive) are Merged in [Spec,D].
c. Dative Case can only be checked by a V head, and only in [Spec,V] or [Spec,v].

Given these assumptions, the core facts of PDC mostly follow effortlessly from a movement analysis.

Property 1: A PD argument must always be interpreted as possessor or creator. The restriction on Thematic interpretation of PD is derived from the structural position in which PD is initially Merged. Movement cannot affect its interpretation, under the common assumption that a chain (such as that created by movement) can only bear one role. Thus, PD must be Merged at whatever point where possessors or creators are Merged, and be moved out of that position. The source position, Landau argues, must be [Spec,D]. It cannot be a complement position, both because of the assumption in (17a) and because of syntactical facts about DPs and Datives. Namely, [Comp,D] is occupied by the NP and [Comp,N] in Hebrew can be occupied by a Dative-marked DP (even together with PDC):[6]

(18) a. ha-matkon la-uga
the-recipe to.the-cake
"the recipe for the cake" (L99, ex. 19c, p.11)

b. 'ibadeti le-Gil et ha-matkon (la-uga)
I-lost to-Gil ACC the-recipe (to.the-cake)
"I lost Gil's recipe (for the cake)" (ex. 20, ibid.)

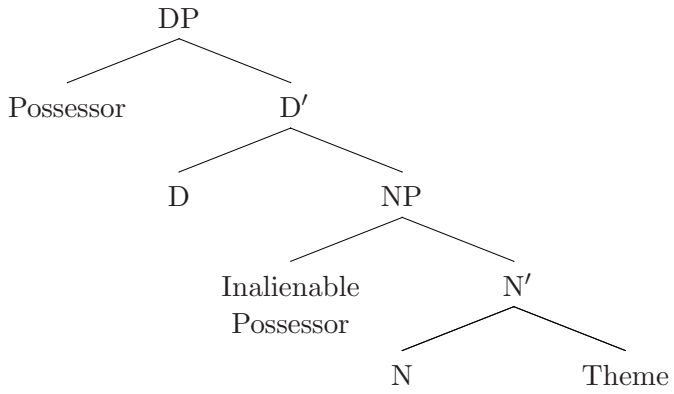
Movement out of a position in which Dative Case is available for the purpose of checking said Case features would be ruled out due to economy – the checking can take place without movement. Having ruled out complement positions, Landau turns to the last two options: [Spec,N] and [Spec,D]. He provides several arguments against the former (pp. 13), which I will not repeat all of; perhaps the most striking is the evidence from relational nouns. Interestingly, PDC with a relational possessee is only possible together with a Genitive pronoun:

(19) Gil cilem le-Rina$_i$ et ha-ax/xaver/ima *(šela$_i$).
Gil photographed to-Rina ACC the-brother/friend/mother (*her.GEN)
"Gil photographed Rina's brother/friend/mother" (L99, ex. 27a, p. 14)

As Landau notes, "the pronoun cannot be viewed as resumptive, forming a non-movement chain with PD, since that chain would be doubly case-marked (genitive and dative)". This is readily explained if relational nouns' possessors are located in [Spec,N] and θ-marked by N while Dative possessors are raised from [Spec,D] and θ-marked by D; Landau also cites multiple discussions of relational nouns that this analysis is in line with. Thus, the proposed structure is something like (20):

[6] [Comp,D] might instead be occupied by some intermediate phrasal functional projection, e.g. nP. Throughout the present paper, let us assume for the sake of simplicity that there is no such projection.

(20)



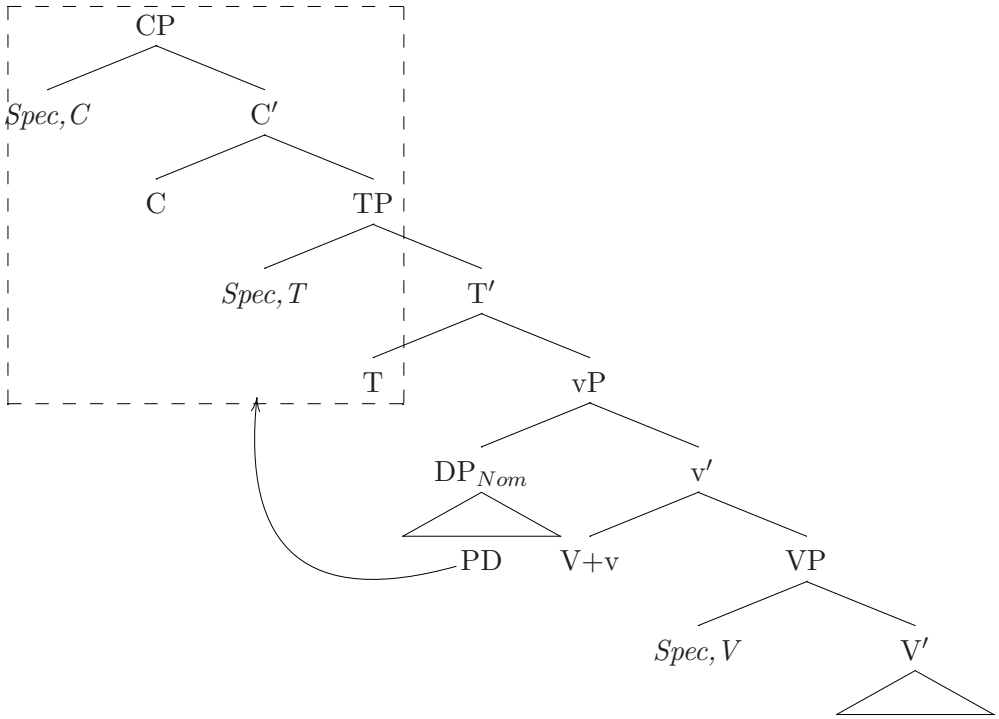
Property 2: PD cannot be the possessor of an external argument. Recall the striking evidence from monadic verbs, repeated here from (6):

(21) a. ha-kelev ne'elam le-Rina. (unaccusative)
the-dog disappeared to-Rina
"Rina's dog disappeared"

b. *ha-kelev hitrocec le-Rina. (unergative)
the-dog ran-around to-Rina
("Rina's dog ran around")

Under standard assumptions – that external arguments are Merged at [Spec,v] and movement only goes upwards – and Landau's assumption that Dative Case can only be checked in [Spec,V] or [Spec,v], this restriction follows automatically. Moving a Dative DP out of a DP in [Spec,v] would place it too high for its Case to be checked. In (22), note that Dative-checking positions [Spec,v] (where the Nominative subject DP is located) and [Spec,V] are well below the area into which such a possessor could be raised:

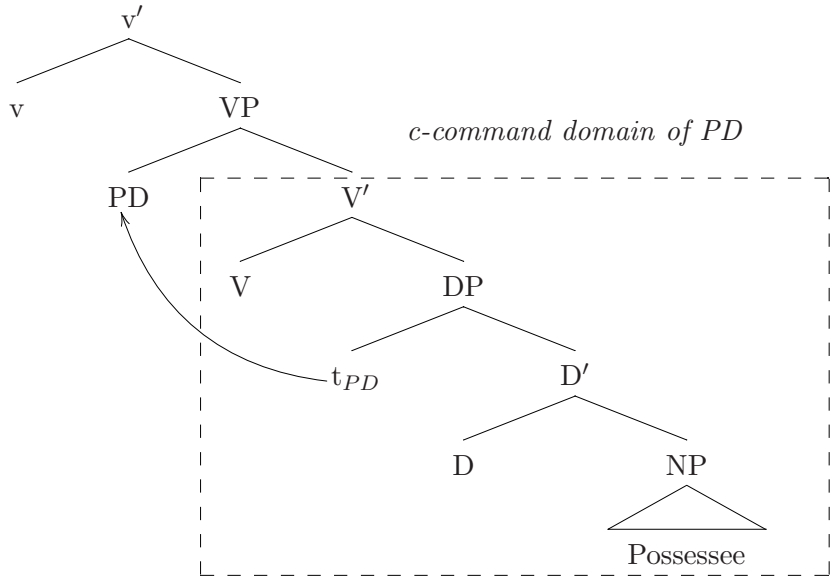
(22)



Property 3: PD must c-command the possessed DP or its trace. Recall the evidence from §1.4.3 – PDC requires PD to c-command the possessed DP.

This follows naturally from the Dative possessor being raised out of the possessed DP:

(23)



Property 4: Possessive interpretation is constrained by locality. According to Landau, the locality condition on possession follows the locality of movement:

> [I]t is easy to see that the domain of possessor-raising is identical to the domain of NP-movement. The categories DP and IP contain subjects, hence block any NP-movement out of them. Since possessor raising is nothing more than NP-movement, it is constrained to apply within these domains.
>
> (L99, p. 12)

Assuming no assumptions other than those mentioned, this does not follow.[7] Consider a structure like (24):

(24) [$_{VP}$ kara [$_{DP}$ et ha-matkon [$_{DP}$ la-uga [$_{DP}$ šel savta]]]]
read.PAST ACC the-recipe for.the-cake of Grandma

"(he) read the recipe for Grandma's cake"

The most deeply embedded DP is the possessor of the middle DP, which in turn is a Dative theme of the highest DP. If possessors are taken to be subjects of DPs, clearly some DPs can be subject-less, like the high DP "the recipe". It cannot, then, be the presence of a subject per se that blocks raising out of an equivalent context with a Dative possessor. It also cannot be the presence of Case-checking features on the highest D head, as we would then expect "subject raising" from the lower DPs to the highest (and, naturally, the DP "Grandma's recipe for the cake" that would result is *not* the same as "the recipe for Grandma's cake", nor are these two configurations in complementary distribution – this holds for Hebrew as well as for English.)

One may conclude that Landau makes some assumption to the effect that DPs are categorically some kind of island due to their *potential* to have a phrasal subject, but without such a generalization this property of PDC does not follow automatically from a movement analysis.

Property 5: PD's possessee can be within a PP only if it is an argumental PP. Recall the contrast demonstrated by (13), repeated here:

(25) a. Gil hitkaleax le-Rina im ha-sabon.
Gil bathed to-Rina with the-soap
"Gil took a shower with Rinas soap"
b. *Gil hitkaleax le-Rina bli ha-sabon.
Gil bathed to-Rina without the-soap
('Gil took a shower without Rinas soap')

Assuming it is no mistake to consider the PP in (25a) (and those like it) an argument and that in (25b) (and those like it) an adjunct, the contrast follows naturally from a

[7] I am grateful to Fabian Heck for helpful discussion on this point.

movement analysis. Adjuncts are generally assumed to be islands, i.e. phrases which movement cannot cross; if PDC requires movement, its source cannot be within an island.

2.1 Open Questions

As we have seen, Landau's movement analysis neatly derives most properties of PDC. However, I would like to point out four open questions that Landau leaves us with.

Generating PD: Dative ex nihilo? In Landau's analysis, almost everything follows as soon as a Dative-marked DP is generated in [Spec,D]. However, no account is given of how this comes to be. Implicit in Landau's approach is that a DP can be generated with any Case anywhere, and so long as this does not lead to a crash in derivation, it is licit.[8] This is not an unusual approach or in any way fatal to the analysis, but nor is it clear what consequences such a system may have. Might we not then expect Dative subjects in Hebrew, since they would have their Case checked in [Spec,v] much in the same way as PD might? And what rules out, conversely, a Nominative possessor raised like PD to the verbal subject position [Spec,v]?[9]

In my analysis, I offer an explicit account of how the Case of arguments is determined, and specifically claim that PD is the result of violable economy conditions that seek to eliminate superfluous Case features.

A look-ahead problem: V's features. In Landau's analysis, Dative Case is checked by V heads. Gereon Müller points out (p.c.) that for this to be possible under standard Minimalist assumptions, V has to bring appropriate features into the derivation. However, Hebrew PDC is not limited to certain V heads carrying certain features: it is compatible with a terrifically broad range of different verbs. Yet how, upon V's entering the derivation, is it determined whether it will bring along an extra set of features for checking the Dative? Are we to assume that all V heads in the Hebrew lexicon carry this additional payload but it is deactivated somehow when no PD is raised? Conversely, must we assume that there is some operation which adds these features to a V head after computing that PD is going to occur? How is such an operation limited? What stops it from adding a Dative-checking feature to D, thus eliminating unnecessary movement? Again, there is nothing glaringly implausible about these options, but they are far less elegant than Landau's analysis appears to be. One way or another, this boils down to a real look-ahead problem.

Under the local OT analysis that I offer, this issue quite simply ceases to exist, as I propose that Case-driven movement does not depend on the landing spot.

[8] This is evidenced in his argumentation regarding Property 1: "whenever a complement to N (themes included) is generated with dative case features, it is 'trapped' within the DP. We thus derive property [1]." (L99, p. 11)

[9] Such a lexicalist approach also raises many issues with regard to the workings of morphology. Cf. Halle and Marantz (1993), Noyer (1992) and subsequent work in Distributed Morphology; I will not discuss such matters here.

Diachrony: Earlier forms of Hebrew had DP-internal PD. As Landau notes (fns. 5, 7), earlier forms of Hebrew attested DP-internal PD:

(26) mizmor le-David
song to-David
"A song of David's" (L99, ex. ii in fn. 7; there from Borer and Grodzinsky, 1986)

For this he offers that "[p]ossessor raising may be seen as a modern response to the loss of dative case in [Spec,DP]". Again, there is nothing wrong with this suggestion as such, but when the look-ahead problem above is taken into account, it seems like somewhat of a stretch. It is to say, essentially, that a change in the features of D heads led to the creation of an (optional) operation that changes the features of V heads in accordance with the presence of a Dative possessor in the Numeration or Derivation.

Under my analysis, I propose that the difference from DP-internal to raised PD is merely the matter of a minimal change in constraint ranking.

Island asymmetry: PDC is sensitive to some but not all islands. There is an asymmetry in island effects, pointed out to me by Gereon Müller (p.c.), between PD raising and *Wh*-raising of Genitive possessors. Consider (27), where PDC is possible in a context where *Wh*-raising is not, and (28), where both types of movement are illicit.

(27) a. Yossi ganav le-Rina et ha-simla.
Joe stole to-Rina Acc the-dress.
"Joe stole Rina's dress"
b. Yossi ganav et ha-simla šel Rina.
Joe stole Acc the-dress of Rina
"Joe stole Rina's dress"
c. Yossi ganav et ha-simla šel mi?
Joe stole Acc the-dress of who
"Joe stole *whose* dress?" (Echo question)
d. *et ma Yossi ganav šel Rina?
Acc what Joe stole of Rina's
("What of Rina's did Joe steal?")
e. *šel mi Yossi ganav et ha-simla?
of who Joe stole Acc the-dress
("Whose$_i$ did Joe steal the dress t$_i$?")
f. le-mi Yossi ganav et ha-simla?
to-who Joe stole Acc the-dress
"Whose dress did Joe steal?", (lit. "Whom did Joe steal the dress?")

(28) a. Gil hitragez me-ha-kelev šel Rina.
Gil got-angry from-the-dog of Rina
"Gil got angry by Rina's dog"
b. *Gil hitragez le-Rina me-ha-kelev.
Gil got-angry to-Rina from-the-dog

("Gil got angry by Rina's dog") (L99, ex. 36b, p. 18)

c. *šel mi Gil hitragez me-ha-kelev?
of who Gil got-angry from-the-dog
("[By whose]$_i$ did Gil get angry t$_i$ dog?")

d. *le-mi Gil hitragez me-ha-kelev?
to-who Gil got-angry from-the-dog
("[Whom]$_i$ did Gil get angry from t$_i$ dog?")

Clearly, PDC is sensitive to islands. What is less clear is why it can be raised where raising a *Wh*-element (be it possessor or possessee) would be illicit.

Under my analysis, in which islands are represented by a series of violable constraints, it is natural and expected that islands have a differing level of stringency and some movements might take precedence over some island restrictions but not others. Furthermore, these fine-grained differences can be explicitly accounted for.

3 Analysis I: Generating a Dative Possessor

My analysis of Hebrew PDC comprises two relatively independent parts: the first part, presented in this section, sketches an explicit account for the initial formation of a Dative possessor. The second part (§4) follows up on Landau's central claim – that PDC is a movement phenomenon – and re-casts it in different terms, providing (i) an example of fruitful combination of Minimalist and OT analysis, and (ii) an account that better addresses the open questions outlined above. While these two parts are consistent with one another, and both cast within a unified view of Extremely Local Optimization (ELO, see §1.2 above), they are effectively independent of one another and one may choose to accept either one even while rejecting the other.

3.1 What is the Dative to the Genitive?

Presently, I wish to develop an explicit account of Case generation for PDC. Recall that in Landau's analysis of PDC, movement is construed as the result of a DP with Dative Case being Merged in the specifier of another DP – the rest of the analysis follows automatically under his background assumptions. However, L99 provides no account for how a Dative DP comes to be generated in such a position, where a Genitive would otherwise occur and no Dative can remain unmoved.

In order to make sense of the situation, the first question is: *what is the relation between Dative and Genitive?* Are they equal and complementary, such that a Dative possessor is simply a Genitive possessor with a different value for Case? Or is it possible that the one Case includes the other? I propose that the latter is the case, and specifically, that the Genitive structurally subsumes the Dative.

Consider the pronominal paradigms in (29) (syllable boundaries, main, and secondary stress, marked as per IPA):

(29)

	DAT	GEN
1SG	li	še'li
1PL	'la.nu	še'la.nu
2SG.F	lax	še'lax
2SG.M	le'xa	šel'xa
2PL.F	la'xen	,še.la'xen
2PL.M	la'xem	,še.la'xem
3SG.F	la	še'la
3SG.M	lo	še'lo
3PL.F	la'hen	,še.la'hen
3PL.M	la'hem	,še.la'hem

With the exception of /šelxa/,[10] all Genitive forms display the same pattern: their form is that of the Dative pronoun with a prefixed /še-/.[11] The non-pronominal clitics /le-/ 'DAT' and /šel/ 'GEN' are admittedly less of a clear-cut case, but a phonological analysis like those suggested in fn. 10 may be in order, in which case the generalization holds for the non-pronominals as well as the pronouns.

Thus, I propose that Hebrew Genitives underlyingly include the Dative. If the Dative is underlyingly defined by some feature or features $[F]$, then the Genitive may be said to be defined by $[F]$ together with one or more additional features: $[GF]$. I will return to the exact nature and content of these features soon.

Assuming this hypothesis is correct, we can now better approach the question of the relationship between Dative and Genitive possessors; to wit, the Dative possessor is in some sense a "defective" possessor, lacking some feature(s) $[G]$ that would have made it a "healthy" Genitive, the normal possessive Case. This suggests an analysis in terms of Impoverishment (Distributed Morphology: Halle and Marantz, 1993; Halle, 1997; Noyer, 1998; Frampton, 2002; Trommer, 2003), which I will pursue along the lines of Keine and Müller (2008). There, an approach to Impoverishment in syntax under an OT-based framework is developed; they propose that for each primitive feature comprising Case, there is a Markedness constraint that penalizes candidates with that feature.

However, if an otherwise-Genitive DP becomes a Dative through feature deletion, a further question arises: at what point, and how, does the full complex of Case features

[10]This exception may well be the result of a phonological process – note that /lexa/ is also the only form in (29) in which the Dative /l-/ is followed by an /e/; perhaps it is elided because it would be an unstressed bowel between two stressed vowels. Alternatively, or perhaps additionally, this [e] may lend itself to analysis as an epenthetic vowel, rendered superfluous in /še-l-xa/.

[11]Incidentally, /še-/ is also a clitic subjunctive complementizer. This may have been a factor in the development of this paradigm. As there is no obligatory overt copula in present-tense clauses in Hebrew, and earlier Hebrew had Dative possessors DP-internally, one may conjecture that at some stage a structures like that in (i) may have been reanalyzed to form the Genitive.

(i) [ha-yeled [$_{CP}$ še- ... [$_{DP}$ li]]]
"[the boy [that is [mine]]]"

become associated with the DP in the first place? After all, for Impoverishment to take place from [GF] to [F], [G] has to first, in some sense, already be there. Alternatively, and perhaps lending to a more economical design for the system as a whole, [G] has to at least at some point be an optional addition to [F], such that optimization can lead either to its addition and the formation of a [GF] complex, or not allow its addition, leaving us with only [F].

Either way, an account seems to be in order for how Case features become associated with a DP. Before returning to Impoverishment from Genitive to Dative, let us consider how Case assignment might work under ELO.

3.2 Thematic Role and Case Assignment

Case can be seen as a system which provides the hearer with Thematic (θ) information by compressing it into a less fine-grained form. For example, languages apparently may "elect" to (i) differentiate external and internal arguments (regardless of transitive vs. intransitive context), (ii) differentiate external arguments of transitives on the one hand from external arguments of intransitives and the single argument (be it internal or external) of intransitives on the other, or (iii) differentiate *internal* arguments of transitives from external ones and from intransitives' single arguments. Each choice entails losing some information while maintaining some meaningful distinction (if a language makes the division in (ii) or (iii), information is lost as to the type of argument with intransitives). At the same time, even in a language such as English that follows the pattern of (iii) – better known as the Nominative-Accusative pattern – the alignment of Case to Role remains flexible: in a construction such as "I expect [him to find it soon]", the Accusative (Object-) Case is used for the external argument.

In other words, while Case seems to be aligned with θ-Role, this alignment is flexible both language-internally and cross-linguistically. Presently, I will sketch an account of Case assignment that makes use of Harmonic Alignment, an OT mechanism (see §1.1.1) which allows us to align two prominence scales to produce a partially-ordered series of constraints which can furnish precisely this type of flexibility.

Recall that Harmonic Alignment (HA) takes two "dimensions", or scales, one of which must be binary (i.e. composed of exactly two elements), and produces two ordered sets of Avoid constraints. One such subhierarchy increasingly penalizes the more prominent element of the binary scale in conjunction with elements of the n-ary scale in order of decreasing prominence, such that the less prominent an element of the n-ary scale is, the higher the constraint that forbids its occurrence together with the more prominent element of the binary scale. The other subhierarchy works in reverse, increasingly penalizing the conjunction of the *lower* element of the binary scale with *increasingly* prominent parts of the n-ary scale. For an abstract example, see §1.1.1; for a concrete example, read on.

3.2.1 θ roles as binary scales

In approaching the Harmonic Alignment of Case and θ-Role, we first need to identify one of these dimensions which can be reduced to a single binary dimension, or at least set of binary dimensions. Luckily, one study of the θ system does just that: Reinhart (2003). There, arguing from both syntax and semantics, Reinhart develops an analysis of θ-Roles in the verbal domain, in which, she proposes, all Roles can be reduced to two *binary* features:

(30) *Decomposed θ-Roles:*

a. [±m](ental state involved)
b. [±c](ause change)

In the approach she develops, θ clusters (each corresponding to one argument) can be fully specified, i.e. have a positive or negative value for each of the two features, or be underspecified, i.e. have a value for one, but no association with the other. Some examples of θ clusters:

(31)
a. [+c+m] = agent
b. [+c–m] = instrument (in certain contexts)
c. [–c+m] = experiencer
d. [–c–m] = theme/patient
e. ...
f. [–c] = "Internal roles like goal, benefactor, typically dative (or PP)."

(from Reinhart, 2003, p. 232, ex. 1)

This system is then used to determine argument Merging in syntax, using an explicit mapping/linking system:

(32) **Argument marking**
Given an n-place verb, $n > 1$,

a. Mark a [–] cluster with index 2.
b. Mark a [+] cluster with index 1.
c. If the entry includes both a [+] cluster and a fully specified cluster including [–c], mark the head with the Acc feature.

Merging instructions

a. When nothing rules this out, merge externally.
b. An argument realizing a cluster marked 2 merges internally;
c. An argument with a cluster marked 1 merges externally.

To the best of my knowledge, this approach has not been extended to the nominal domain.[12] However, it provides us with two binary scales embodying θ Roles:

[12] I thank Petr Biskup for helpful discussion around this topic.

(33) *θ Roles as scales*:

a. {[+c] > [–c]}

b. {[+m] > [–m]}

The Hebrew Genitive, much like the Nominative in the verbal domain, is usually associated with external roles: [–c+m] (experiencer and perhaps "owner") and [+c+m] (agent/creator). But if Harmonic Alignment between the scales in (33) and some scale over Case is responsible for Case alignment, we would expect Nominative and Genitive Case to have a very similar distribution, which does not appear to be the case. Presently, I will propose a a tentative extension to Reinhart's system, in which a third θ feature is added to account for this difference.[13]

(34) *Proposal:* Revise (31) to accommodate DP-internal roles.

a. **New feature: [±o(wner)]**

b. [+c+m] = agent, **creator** ((34a) revised)

c. [–c+m+o] = prototypical possessor

Remarkably, this addition requires almost no change to the marking/linking system of (32): one need only replace the word "verb" with "head", and define "[+] cluster" and "[–] cluster" as requiring *two* features with the respective value, rather than *all* features as in Reinhart's version. Before making a scale out of (34a), we will have to look at the other part of the Harmonic Alignment: the Case hierarchy.

3.2.2 Case on a scale

Recall that in pursuing an analysis of Case assignment in the Possessor Dative Construction (PDC), I am developing a proposal in terms of Harmonic Alignment between θ-Roles and Case. In §3.2 I suggested that θ-Roles can be decomposed into a series of binary features. Harmonic Alignment takes one binary scale and one n-ary scale as its input, producing a series of violable alignment constraints. Before we can see how this might work, all that remains is to identify a hierarchy of Case features.

Caha (2009) develops a system in which Case is seen as a sequence of hierarchically ordered functional heads which Merge with a DP in syntax (formally analogous to the common Minimalist assumption that a functional sequence holds over the verbal projection v and clausal projections T and C). Caha claims that Case features are a sequence of abstract heads (of a category K) projected above a nominal, with each head carrying a distinct abstract feature which may or may not embody a visible Case in a given language. Certain Cases may in two different languages exhibiting it actually be two different heads with different locations in the functional sequence, despite the two phenomena being called by the same name.

Caha's study is extensive and rooted in the "nanosyntax" approach to morphosyntax (Starke, 2009), and I will not be adopting it in its entirety. Crucial for my analysis is only

[13] A different analysis, in which the syntactic environment (verbal vs. nominal) derives this difference, may be possible or even preferable.

the hypothesis that Case is formed of a fixed sequence with hierarchical structure. As I also follow Caha's claim that two underlyingly distinct Cases in two different languages may be called by the same name, I propose a Case hierarchy similar to his, but one which places the Dative in a different position relative to the Genitive:

(35) *Case Hierarchy for Hebrew*:
{Nom > Acc > Dat > Gen}

Whether this hierarchy is merely the overt subset of an underlying universal hierarchy or the whole hierarchy specific to Hebrew is tangential to the case at hand, although conceptually a universal hierarchy would be preferable. Rather, I propose this hierarchy because it makes an analysis in terms of Harmonic Alignment with θ-Role possible.

3.2.3 Aligning Case and Role

In developing an approach to Case assignment using Harmonic Alignment (HA), I have proposed (i) two binary scales over (decomposed) θ-Roles (in (33)), (ii) an additional binary θ feature [±o](wner) (in (34)), and (iii) a hierarchy over the four Cases of Hebrew (in (35)). At last, I can now propose the concrete application and result of HA of these scales. For a general introduction regarding HA, please consult §1.1.1 above and the citations therein.

If we apply HA to (35) together with (33), we get four constraint subhierarchies:

(36) a. *+C/Gen ≫ *+C/Dat ≫ *+C/Acc ≫ *+C/Nom
b. *–C/Nom ≫ *–C/Acc ≫ *–C/Dat ≫ *–C/Gen
c. *+M/Gen ≫ *+M/Dat ≫ *+M/Acc ≫ *+M/Nom
d. *–M/Nom ≫ *–M/Acc ≫ *–M/Dat ≫ *–M/Gen

As the highest constraints in each subhierarchy are the least likely to be licitly violated, this wrongly predicts that the ideal Case for a typical theme/patient ([–c–m]) is the Genitive, although it rightly predicts that the ideal Case for an agent ([+c+m]) is the Nominative.[14] As I suggested above (§3.2.1), this could be resolved by introduction a third θ feature, [±o], which is positive for an argument that is in some vague and general sense the proprietor of the selecting head; I will assume this feature is only relevant in the nominal domain, i.e. where the θ-assigning head is a noun.

[14] It is important to remember, however, that these subhierarchies are not applied independently, but instead constitute partially ordered subsets that are placed in a total ordering in H (the language-specific hierarchy). It is the precise rankings amongst subhierarchies that would ultimately decide Case assignment. For example, a language in which the ranking holds ⟦*–M/Gen ≫ *+C/Gen⟧, a [–m+c] cluster might still receive the Genitive despite the [–m] feature. How exactly this works in Extremely Local Optimization (§1.2) depends not only on the ranking but also on the relevant point in derivation for the application of these constraints (i.e. the point at which both Case and θ features are available) and the precise operations allowed in the candidate set. That said, the subhierarchies in (36) predict a tendency towards the wrong pattern.

Consider now the outcome if this feature is taken to be the scale in (37a) and aligned with the Case scale as before. The result (37b-c) would, clearly, be very wrong:

(37) *Wrong alignment of [±o]*:
- a. {+o > –o}
- b. *+o/Gen ≫ *+o/Dat ≫ *+o/Acc ≫ *+o/Nom
- c. *–o/Nom ≫ *–o/Acc ≫ *–o/Dat ≫ *–o/Gen

This would predict that the worst possible Case for a [+o] argument to have is the Genitive, a prediction which stands in diametrical opposition to the evidence. Instead, I propose that this feature represents a reversed prominence scale (38a),[15] providing us with the more useful subhierarchies in (38b-c):

(38) *Better alignment of [±o]*:
- a. {[–o] > [+o]}
- b. *–o/Gen ≫ *–o/Dat ≫ *–o/Acc ≫ *–o/Nom
- c. *+o/Nom ≫ *+o/Acc ≫ *+o/Dat ≫ *+o/Gen

(39) repeats the subhierarchies of (36) and (38):

(39)
- a. *+c/Gen ≫ *+c/Dat ≫ *+c/Acc ≫ *+c/Nom
- b. *–c/Nom ≫ *–c/Acc ≫ *–c/Dat ≫ *–c/Gen
- c. *+m/Gen ≫ *+m/Dat ≫ *+m/Acc ≫ *+m/Nom
- d. *–m/Nom ≫ *–m/Acc ≫ *–m/Dat ≫ *–m/Gen
- e. *–o/Gen ≫ *–o/Dat ≫ *–o/Acc ≫ *–o/Nom
- f. *+o/Nom ≫ *+o/Acc ≫ *+o/Dat ≫ *+o/Gen

(40) *Predicted optimal θ complexes for Genitive case*:
- a. Optimal: [–c–m+o] ("unknowing proprietor")
- b. Second best:
  - (i) [+c–m+o]
  - (ii) **[–c+m+o]** (prototypical possessor)
  - (iii) [–c–m–o]

Considering (39), the predicted tendency is for [–c–m+o] arguments, presumably interpreted as some kind of "unknowing proprietor", to be the ideal θ-Role for association with the Genitive, with second-best options being those in (40b) (each differing from the "unknowing proprietor" in one feature value). While this may, again, appear to be an undesirable result, one may conjecture that no head would select [–c–m+o] or [+c–m+o]

[15] This may seem inelegant at first blush. However, there are at least two ways this can be conceived of in a more positive light: first, perhaps the feature is indeed cast in this way, and its "inverse" prominence is a reflection of the fact that it is a feature of the structurally lower nominal domain. Alternatively, one might wish to replace this feature with some other feature representing some logic by which a negative value applies for possessors and a positive value applies for everything else – in the nominal domain or perhaps in general. See also fn. 13.

arguments because of the internally-conflicting logic. Perhaps this fact is even reflected in some form of co-occurrence restriction over θ features, such that [+o] implies [+m].

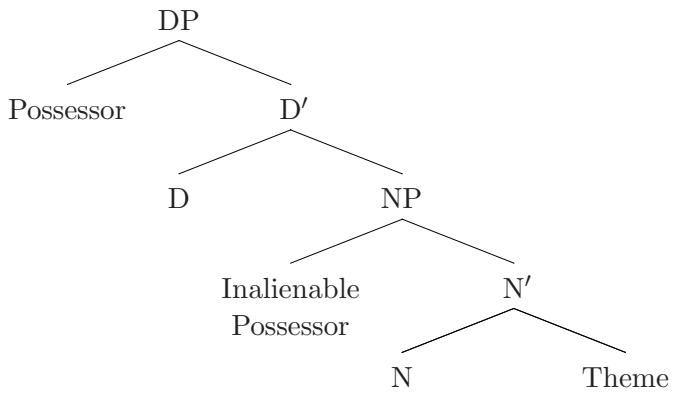
The system presented here and the investigation of its repercussions is, admittedly, incomplete. However, it is proposed as a step towards some principled account of Case alignment and assignment within an approach based on OT. Keeping this proposal in mind, let us now see how a possessor might come to have Dative Case in this system.

3.3 Deriving Possessor Cases by Extremely Local Optimization

After a slight detour, we now come to the question with which this part of the analysis began: *how does Dative case get assigned to a possessor?* I hypothesized that the Hebrew Genitive includes as a proper subset the Dative, and suggested that a mechanism akin to morphological Impoverishment (Distributed Morphology, Halle and Marantz, 1993) is responsible for creating a "defective" possessor, in which some feature is unavailable, such that its Case is Dative rather than Genitive. In order to generate "healthy" possessors in the first place, I sketched a system (starting in §3.2.1) by which θ-Role is related to Case through Harmonic Alignment. Presently I will make a more central proposal as to how Case features are assigned to a DP.

I assume that during the syntactic derivation of a nominal, its projections carry a (possibly underspecified) complex of θ features (concretely, those described in §3.2.1), whether by pre-syntactic copying or some other mechanism. I assume, with Landau (1999), that the full structure of a nominal with all possible projections is a DP (Determiner Phrase), as illustrated in (41), here repeated from (20). Note this phrase structure is headed by a (sometimes phonologically null) functional head of category D (Adger, 2003), which in some contexts is expressed phonologically as the definite article /ha-/. The Theme and both Possessors are presumably each a DP as well, although I will revise this statement imminently in discussing Case as syntactical projection.

(41)



Under Extremely Local Optimization (ELO, §1.2), this structure – like all syntactic structure – is derived in a cyclic manner, with an ordered set of violable constraints applying to determine the optimal next step each time. For the sake of explicitness, I conjecture that one component of this system is a Merge Buffer, to which a Syntactic

Object (SO) is added as soon as an object is added to the derivation which triggers structure-building; this may happen in two ways: either an SO in the derivation requires Merge with some SO in the Numeration (the set of all simplex SOs that enter into a derivation) or an item in the Numeration requires Merge with the structure in the derivation. Triggers within the derivation take primacy over triggers in the Numeration. In either case, the Merge Buffer holds SOs that are to be added to the given derivation, not the SO already in the derivation. So while it is N that triggers Merge with its Theme and Inalienable Possessor and D that triggers Merge with the NP, in the derivation of the DP it is the Theme, then the Inalienable Possessor, then the D head which enter the Merge Buffer. The items in the Merge Buffer are then discharged into derivation cyclically in the same order in which they were Buffered (FIFO – First-In-First-Out). The derivation takes as input the input from the Merge Buffer (i.e. the first Buffer SO) and the output of the previous step ("derivation SO"). The output candidate set is created using the following mutually exclusive options, each constituting one possible step in the derivation:

(42) *Possible derivational steps*:

a. **Merge:** Form a new SO by Merging the Buffer input and the derivation SO
b. **Delete:** Remove an SO from input (i.e. either the Buffer input, or any subset of the derivation SO)
c. **Move:** Form a new SO by Merging the derivation SO with a copy of some SO contained within it

Furthermore, the candidate set always includes one candidate that is identical to the input. The candidate set includes all possible applications of (42) to the input; the choice between them is made by EVAL, which orders all projected output candidates according to optimality for the ordered set of constraints H. Whichever candidate is uniquely optimal compared to all the rest forms the output of the derivational step, and furnishes the input for the next optimization. The derivation is complete when the faithful candidate wins (i.e. when optimization can no longer change anything).

Now suppose Case features are functional simplex SOs (heads) which form a functional sequence by each requiring Merge with one other (Caha, 2009). Their sequence reflects the Case hierarchy, repeated here from (35):

(43) *Case Hierarchy for Hebrew*:
{Nom > Acc > Dat > Gen}

Ignoring any unused Case heads that may together with (43) form a universal Case sequence, we have the following SOs with their features, K denoting the category-defining feature for Case heads, Greek letters standing for the Case features themselves[16] and [•F•] denoting a requirement to Merge with an SO carrying some morphosyntactic feature [F]:

[16]This notation is intended to reflect the notion that the Case features themselves do not carry some semantic or functional meaning, but are merely distinct abstract features, the function of each defined by its location in the sequence (as in Caha, 2009) and its treatment by the grammar.

(44) *Case (K) heads*:

a. "Nom" = [K α •D•]
b. "Acc" = [K β •α•]
c. "Dat" = [K γ •β•]
d. "Gen" = [K δ •γ•]

For ease of recollection, I will refer to the substantive features (Greek letters) of the K heads by the same nickname as refers to the head as a whole. Note that this does not mean that a Case exponent spells out just one head – an Accusative exponent presumably spells out both the Nom feature and the Acc feature.[17]

The derivation then proceeds like this: once the N head is introduced into the derivation, any other SOs it triggers Merge with are added to the Merge Buffer and are subsequently added to the derivation. As D also triggers Merge with the N head, it is added to the Buffer too, and will Merge with the complete NP once its complement and specifier have been Merged. As soon as the D head is Merged, any further SO it may trigger Merge with (such as a possessor) is added to the Buffer, and the Nom head is added as well, so that it may Merge with the DP. Once the Nom head is Merged, Acc triggers its own addition to the buffer. Dat and Gen follow in the same way.

However, each such step is subject to optimization. If EVAL determines at some point that Deleting a K head is more optimal than Merging it, the Case sequence will be cut off at that point. Now suppose there are, as proposed by Keine and Müller (2008), Avoid constraints for each Case feature, penalizing any output candidate instantiating a given feature:

(45) *CASE *constraints*:[18]

a. *NOM
b. *ACC
c. *DAT
d. *GEN

These are Markedness constraints (which one might wish to conceive of as economy constraints, enforcing minimal use of these functional projections) that conflict with a corresponding Faithfulness constraint:

(46) MAX-CASE:
Count a violation for each Case feature present in input but absent in the output candidate.

On this view, the decisive ranking for Hebrew, which optionally allows a possessor without Genitive Case, is:

(47) ⟦*GEN ∘ MAX-CASE ≫ *DAT⟧

[17] Ways to implement this include the Distributed Morphology operation of Fusion (Halle and Marantz, 1993; Cable, 2005; Henze and Zimmermann, 2010), or subtree exponence based on either the Subset Principle (Radkevich, 2010) or the Superset Principle (Caha, 2009; Starke, 2009).

[18] A note on the ranking of *CASE constraints: For our purpose, only the ranking between *DAT and *GEN matters, so developing a generalization about the ranking between all four of the constraints is unnecessary. However, it may turn out that in the system developed here, their ranking should always be ordered inversely to the Case hierarchy – i.e., ⟦*GEN ≫ *DAT ≫ *ACC ≫ *NOM⟧. One way to achieve this might be Harmonic Alignment of the Case scale with nothing, or some similar operation that takes only a single scale as input.

Max-Case outranks *Dat, meaning that without interference from other constraints, Dat will not be deleted. Deletion of Gen, on the other hand, is optional. Recall that "∘" means two constraints are unranked to one another; the ranking between them must be resolved before optimization, and depending on whether ⟦Max-Case ≫ *Gen⟧ or ⟦*Gen ≫ Max-Case⟧ is applied, a possessor will either carry a full set of Case features, including Gen, or only carry Case up to Dative, respectively. The relevant optimization step, with ranking between these two constraints left undetermined (hence the dashed line), is shown in (48):

(48) Ranking between *Gen and Max-Case determines Case assignment

I: Gen + [[[DP Nom]$_{KP}$ Acc]$_{KP}$ Dat]	*Gen	Max-Case	*Dat
a. [[[[DP Nom]$_{KP}$ Acc]$_{KP}$ Dat]$_{KP}$ Gen]$_{KP}$	*		*
b. [[[DP Nom]$_{KP}$ Acc]$_{KP}$ Dat]$_{KP}$		*	*
c. Gen + [[[DP Nom]$_{KP}$ Acc]$_{KP}$ ~~Dat~~]$_{KP}$	*	**	

Note that "I:" denotes "Input:", and that the SO before the "+" sign is the unintegrated input from the Buffer (shown in output candidates only to indicate that it has been neither Merged nor Deleted). Candidates produced by Move are omitted and will be dealt with in §4. Candidate (c), which Deletes Dat, loses no matter which ranking holds, violating both higher constraints while satisfying *Dat. Candidate (b), which Deletes Gen, wins if *Gen outranks Max-Case, as it satisfies the former; candidate (a), which Merges Gen, wins if the reverse ranking holds, as it satisfies the latter. Not shown here, nor in most tableaux to follow, is the faithful candidate – ruling it out would require additional constraints that fall outside the scope of the present study.

If the proposal I outlined in §3.2 were to be pursued and completed, it could be integrated with the kind of optimization described here. The ranking of Max-Case relative to the subhierarchies in (39) (and possibly the relative ranking of a Max-θ constraint, too) would determine which combinations of Case and θ-Role would allow Impoverishment to alter their Case (and, possibly, θ composition). Some set of constraints along those lines would also be necessary for the completeness of the present approach; otherwise, given only the *Case and Max-Case constraints and the ranking proposed for Hebrew, all Hebrew DPs would be Datives, with some optionally being allowed the Genitive. Since this is entirely not the case, the approach detailed here and illustrated by (48) relates only the details relevant for possessors, which are aligned such that the full Case hierarchy is available to them. Also worth noting is the fact that if the subhierarchies of Case and θ-Role are to be taken fully into account, a different account might be necessary for the Case sequence in (44), as the Case/Role subhierarchies could potentially favor the deletion of, say, Nom, but the retention of, say, Acc and Dat, which under the view developed here would be impossible, as the Merger of Acc is triggered by the presence of Nom. A full account of these matters might, however, make use of the insights of Caha (2009), where the Case sequence is constructed essentially the same way as here.

The proposal outlined here can also be replaced by one like that of Keine and Müller (2008), in which a more standard view of Case features is taken, i.e. one in which these features are carried directly by the DP, rather than being functional projections above it. Such an analysis works in the same way, except that the DP is first assigned a full set of features appropriate to its role, some of which are then deleted by optimization much in the same way described here (due to the same kind of constraints). One advantage of the present analysis is that it does not require features to be integrated into the derivation only to be deleted, which would appear to be a less efficient design. Another advantage is that it requires less types of operations to be included in the candidate set, as no additional operation is needed for the deletion of features

as opposed to entire SOs. However, for the sake of simplicity, Part II of the analysis will treat Case-marked DPs as DPs and assume they carry the features directly. The analysis itself is consistent with both approaches. I will still assume that the Case features themselves are those illustrated above, such that Genitives carry (at least) the features Dat and Gen. Note that in order to focus on the movement phenomena in question, the candidate sets in Part II will not include feature deletions.

3.4 Summary of Part I

In further developing the raising analysis of the Possessor Dative Construction of Hebrew, Part I of the analysis began (§3) by taking a closer look at the origins of the Possessor Dative. First, I provided evidence suggesting that the Genitive includes, as a proper subset, the Dative. Then I suggested an analysis in terms of Impoverishment (i.e. feature deletion), leading me to raise the question of how Case is assigned to nominals in the first place. I sketched a system that makes use of Harmonic Alignment in order to create a flexible set of correspondences between Thematic Role and Case (§3.2). Finally, I proposed an analysis of Case generation in terms of a conflict between Markedness constraints enforcing minimal use of Case feature and a Faithfulness constraint enforcing maximal retention of Case features (§3.3).

4 Analysis II: Raising a Dative Possessor

In this part of the analysis, I propose a novel approach to Case-driven movement, combining elements of the model of movement proposed in Stroik (2009) with the framework of Extremely Local Optimization (§1.2). In Part I (§3), I provided an explicit account for the generation of a Dative Possessor, thereby addressing the first of four open questions raised regarding Landau (1999) in §2.1. We now come to Landau's central claim – that the Possessor Dative Construction (PDC) is a movement phenomenon triggered by the presence of a Dative DP in [Spec,D] – and the remaining open questions. One of these questions was a look-ahead issue: Landau's analysis (L99) implicitly requires that the verb have an extra Case feature in derivations which result in PDC. Stroik (2009) develops an approach to movement that is explicitly independent of the landing site, criticizing standard Minimalist views of movement on the grounds that they require non-local dependencies which must then be curtailed by an extra set of Economy restrictions. I take up Stroik's concept of movement triggered by Repel (incompatibility with source of movement) rather than Attract (satisfaction of the needs of the landing site), and develop a Repel-based movement analysis within Extremely Local Optimization (ELO).

In Stroik (2009), movement is recast as "Remerge", an automatic operation that takes place cyclically in derivations, re-introducing a Syntactic Object (SO) that has not had all of its features satisfied in the derivation so far. I take this further, developing an approach which requires no feature checking, but instead uses violable constraints against the presence of certain categories (presently, Case features) in certain structural locations. This has the distinct advantage of eliminating the kind of look-ahead problem exhibited by L99. Movement is cast as entirely local, triggered only for SOs that are not tolerated in their location, moving them a minimal distance out of said location, and then possibly moving them further if they again cannot be tolerated where they land – all subject to optimization. As a result, movement is automatically constrained by minimality, with no additional restrictions needed besides the basic architecture of OT. I leave open the question of whether feature checking as a whole could be replaced, and claim only that within ELO, Case-driven movement can be explained without feature checking.

4.1 Repel constraints

I develop the view that a Dative possessor is raised not in order to have its features checked, but because the possessor position [Spec,D] is an illicit position for Dative-marked DPs. Under OT, such an assertion must be embodied by a constraint. I propose a new Markedness constraint, which may be relativized for different structural positions and different categories.

(49) Repel(κ,π):
Count a violation for a phrasal SO in output with the feature κ if its highest copy is directly dominated by a label π.

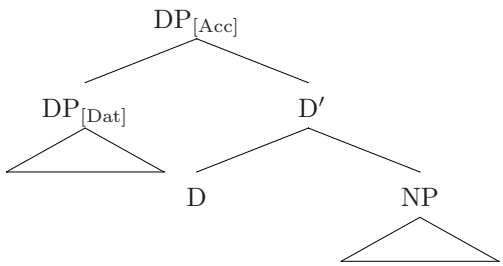
Presently, we will focus on Case categories and positions dominated directly by a maximal (phrasal) projection,[19] but this constraint could be relativized to other categories and other positions. For example, in §4.2 we will see its relativization for the [Wh] feature, responsible for the raising of *Wh-* elements.

To account for the raising of the Dative possessor in these terms, suppose there are Repel constraints regarding Datives and Genitives, including at least these:

(50) a. ⟦*Dat/DP ≫ *Dat/NP, *Dat/VP, *Dat/vP⟧
b. ⟦*Gen/VP, *Gen/vP ≫ *Gen/DP⟧

I will be using this type of shorthand to refer to Repel constraints (e.g. *Dat/DP is shorthand for Repel(Dat,DP)). This notation is similar to that used for Harmonic Alignment (§1.1.1), and indeed their functional similarity raises the open question of whether the Repel constraints could be replaced by Harmonic Alignment. Harmonic Alignment generates constraints based only on prominence scales and would be preferable in that it could not generate constraints as freely. Note, however, that I make no claim about the universality of the partial rankings in (50) – these are merely the rankings necessary given the phenomenon at hand.

(51)



Say a structure such as (51) enters optimization. There are in principle two ways to satisfy the Repel constraint *Dat/DP: something could be Deleted (the entire offending $DP_{[Dat]}$, or the entire containing $DP_{[Acc]}$), or the offending Case-marked DP could be moved. Movement is an option because only the highest copy of the DP is considered by Repel. Deletion of an SO within the derivation (here either $DP_{[Dat]}$, or $DP_{[Acc]}$) is generally assumed to be problematic, due to a high-ranked constraint we will call Recoverability (52).[20]

[19] Such positions are either specifiers, intermediate projections (X′) or, in phrases with no specifier, the head and complement.

[20] I ignore the option of Impoverishment (i.e. feature deletion, cf. §3.3) for the sake of brevity, as previously indicated. Note that integrating this option into the present model would merely require an identification of Faithfulness constraints militating against it. On the view that Case features are carried

(52) Recoverability:
Count a violation for Deletion of an SO containing information not recoverable in output.

This leaves us with one more option to satisfy the Repel constraint: movement. Assume, for the time being, that there is a constraint that penalizes any movement, and that it is called Stay. I will propose a more refined account when turning to the asymmetry in island effects. Consider the rankings in (53), below. In order for PD raising to take place, the ranking must be at least (53a) – otherwise the ban on movement takes precedence over the ban on Datives in the DP. (53b) must also hold, else Datives would raise out of the NP as well. (53c) is necessary so that Datives do not further raise past [Spec,V]. As for Genitives, (53d) presumably holds, as DP-internal Genitives are licit. However, that ranking is not necessary for them to remain in situ: recalling that Hebrew Genitives include the Dative feature as well, (53e) is necessary so that they are not raised the same way as PD (this ranking means that while it is bad to have a DP with [Dat] in [Spec,D], raising a $DP_{[Gen,Dat]}$ would be even worse, as it would place a DP with [Gen] in the VP or vP). The full partial ranking resulting from (53a-e) is presented in (53f).

(53) a. ⟦*Dat/DP ≫ Stay⟧
b. ⟦Stay ≫ *Dat/NP⟧
c. ⟦Stay ≫ *Dat/VP, *Dat/vP⟧
d. ⟦Stay ≫ *Gen/DP⟧
e. ⟦*Gen/VP, *Gen/vP ≫ *Dat/DP⟧
f. ⟦*Gen/VP, *Gen/vP ≫ *Dat/DP ≫ Stay
≫ *Dat/NP, *Dat/VP, *Dat/vP, *Gen/DP⟧

Let us see this ranking in action. Take the simple PDC example in (2a), repeated here (with a slightly different gloss):

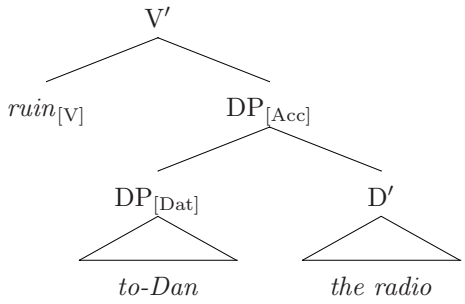
(54) ha-yalda kilkela **le-Dan** et ha-radio.
the-girl ruined Dat**-Dan** Acc the-radio
"The girl broke Dan's radio"

In the derivation of (54), there comes a point at which the verb has been Merged with its object:[21]

by independent functional heads in syntax (as in §3 above), Impoverishment would require the deletion of SOs, thus fall under Recoverability. On the view taken in the present part of the analysis – that Case features are carried directly by nominal projections – *Max-Case must be ranked above Stay (see below). Otherwise we would expect Repel constraints to cause Impoverishment of Case rather than Movement. On this matter, as well as in reducing the space of operations allowed in the candidate set to the exclusion of feature deletion, viewing Case features as heads might increase the overall simplicity of the system.

[21] The slightly earlier point, at which $DP_{[Acc]}$ is complete but V has not yet Merged, would not trigger raising quite yet: the structure that would result from raising would be a DP as well – meaning such a candidate would be no improvement for *Dat/DP compared to input.

(55)



The presence of the V feature on "ruin" triggers Merge with the functional SO [v] ("little v"). The optimization then looks like this:

(56) *Dat/DP licenses movement

I: v + [V′ *ruin*[V] [DP *the-radio*D′ DP[Dat]]]		Recov	*Gen/vP	*Gen/vP	*Dat/DP	Stay	...
a.	[v′ v [VP *ruin*[V] [*DP the-radio*D′ DP[Dat]]]]				*!		
b. ☞	v + [VP DP[Dat] [V′ *ruin*[V] [DP *the-radio*D′ <DP[Dat] >]]]					*	*
c.	v + [V′ *ruin*[V] [DP *the-radio*D′ ~~DP[Dat]~~]]	*!					

Note that dashed lines separate constraints between which no ranking has been ascertained, and "..." stands in for omitted non-decisive constraints. Movement (by copy) is signified by <angle brackets> around the moved item, with the new copy added (as with $DP_{[Dat]}$ in candidate (b)).[22] Recall that the matter before the "+" sign is the input from the Merge Buffer (cf. §3.3), repeated in output candidates in order to indicate whether it has been discarded or survives into the next step of optimization. The "☞" symbol, as is usual in OT, marks the optimal candidate.

As shown in (56), candidate (c), in which *Dat/DP is satisfied by Deleting the Dative possessor, is the least optimal, as it violates the high-ranked Recoverability constraint. Candidate (56a), which Merges the Buffer input, is also sub-optimal, as it violates a higher constraint (*Dat/DP) than does the winning candidate in (b) (Stay).[23]

In following tableaux, candidates which Delete SOs will simply be omitted, as Recoverability is ranked higher than any other constraint discussed – such candidates will never win. Here (skipping the Merge of little v to the point where the next Merge candidate is the subject Nominative DP, "ha-yalda") we see that, other relevant things being equal, Dative possessors are not licensed to raise beyond [Spec,V]:

(57) Stay limits raising

[22] I assume movement is only from one phrase to the next, such that longer movements are necessarily composed of a series of cyclic raisings. I leave open the formal implementation of this restriction.

[23] Notice that the label on the structure in (55) changes from "V′" in input to "VP" in output candidates (56a,b). Assuming no particular theory of labelling, the label in input simply indicates that the verbal projection is not maximal (cf. Adger, 2003), whereas in candidate (a) it is already Merged with the next category, and can be considered a maximal projection. Admittedly, this assumption is somewhat ad hoc and not entirely tangential to the discussion of Repel, which is defined for positions relative to phrasal (maximal) labels.

I: $DP_{[Nom]}$ + [$_{v'}$ v [$_{V'}$ $DP_{[Dat]}$ [$_{V'}$ V [$_{DP}$ D′ <$DP_{[Dat]}$ >]]]]	*Dat/DP	Stay	*Dat/VP	*Dat/vP	…
a. ☞ [$_{vP}$ $DP_{[Nom]}$ [$_{v'}$ v [$_{V'}$ $DP_{[Dat]}$ V′]]]			*		
b. $DP_{[Nom]}$ + [$_{v'}$ $DP_{[Dat]}$ [$_{v'}$ v [$_{V'}$ <$DP_{[Dat]}$ > V′]]]		*!		*	

As we see in (57), because Stay dominates *Dat/VP and *Dat/vP, raising the Dative possessor further is illicit. Further raising could occur, hypothetically, if some higher-ranking constraint requires it, but here we see no such interaction.

Now, consider that in the derivation of the Genitive-possessor equivalent of (54), *"ha-yalda kilkela et ha-radio šel Dan"* 'The girl ruined Dan's radio', the presence of the Genitive in [Spec,D] is a decisive difference to (56), as we can see in (58):

(58) *Gen/VP prevents raising Genitive possessor

I: v + [$_{V'}$ *ruin*$_{[V]}$ [$_{DP}$ *the-radio*$_{D'}$ $DP_{[Gen,Dat]}$]]	*Gen/VP	*Gen/vP	*Dat/DP	Stay	*Gen/DP	…
a. ☞ [$_{v'}$ v [$_{VP}$ *ruin*$_{[V]}$ [$_{DP}$ D′ $DP_{[Gen,Dat]}$]]]			*		*	
b. v + [$_{VP}$ $DP_{[Gen,Dat]}$ [$_{V'}$ *ruin*$_{[V]}$ [$_{DP}$ D′ <$DP_{[Gen,Dat]}$ >]]]	*!			*		

Candidate (b), which raises the possessor, loses because Genitives are tolerated in the VP less than in the DP. Candidate (a), which proceeds to Merge little v instead, wins, despite leaving a DP with the feature [Dat] within the object DP.

4.2 Relativizing movement: Island constraints

Recall that in §2.1, I demonstrated an asymmetry in island effects between Dative possessor raising and *Wh-* movement. The data in (27) and (28), repeated in (59) and (60) respectively, shows that while a Dative possessor can be *Wh*-raised, a Genitive possessor cannot; at the same time, raising any Dative possessor or *Wh*-element out of non-argumental PPs (such as Cause PPs) is impossible.

(59) a. Yossi ganav le-Rina et ha-simla.
Joe stole to-Rina Acc the-dress.
"Joe stole Rina's dress"

b. Yossi ganav et ha-simla šel Rina.
Joe stole Acc the-dress of Rina
"Joe stole Rina's dress"

c. Yossi ganav et ha-simla šel mi?
Joe stole Acc the-dress of who
"Joe stole *whose* dress?" (Echo question)

d. *et ma Yossi ganav šel Rina?
Acc what Joe stole of Rina's
("What of Rina's did Joe steal?")

e. *šel mi Yossi ganav et ha-simla?
of who Joe stole Acc the-dress
("Whose$_i$ did Joe steal the dress t$_i$?")

f. le-mi Yossi ganav et ha-simla?
to-who Joe stole Acc the-dress
"Whose dress did Joe steal?", (lit. "Whom did Joe steal the dress?")

(60) a. Gil hitragez me-ha-kelev šel Rina.
Gil got-angry from-the-dog of Rina
"Gil got angry by Rina's dog"
b. *Gil hitragez le-Rina me-ha-kelev.
Gil got-angry to-Rina from-the-dog
("Gil got angry by Rina's dog") (L99, ex. 36b, p. 18)
c. *šel mi Gil hitragez me-ha-kelev?
of who Gil got-angry from-the-dog
("[By whose]$_i$ did Gil get angry t$_i$ dog?")
d. *le-mi Gil hitragez me-ha-kelev?
to-who Gil got-angry from-the-dog
("[Whom]$_i$ did Gil get angry from t$_i$ dog?")

Recall also Property 2 of PDC (§1.4.2) – the possessee cannot be an external argument. These matters can both be dealt with at the same time by introducing constraints embodying island effects. I propose a new Faithfulness constraint for this, which is relativized to accommodate gradient island effects.[24]

(61) ISLAND(ρ):
Count a violation for each Movement in output not present in input if it crosses a phrase that is in a position of type ρ.

ISLAND is relativized, presumably on a universal basis, into a subhierarchy:

(62) *Island subhierarchy*:
⟦ISLAND(¬COMPLEMENT) ≫ ISLAND(¬H-MARKED) ≫ ISLAND(ρ)⟧

The highest member of the subhierarchy forbids movement across non-complement XPs, i.e. out of specifiers and adjuncts. The middle one forbids movements out of any XP that is not H(ead)-marked. The unrelativized version, ranked lowest, is the most stringent, and forbids movement out of any phrase anywhere (replacing the STAY constraint used in §4.1).

The notion of H-marking assumed here (and due to Gereon Müller) requires some explanation. H-marking applies to any argument that forms a natural predicate with the phrasal head. Such a notion is required to account for a common effect regarding islands, namely that they are weaker when part of an especially close syntacticosemantic relationship between heads – such prototypical combinations as *drink+beer* or *read+book*.

Now, to model *Wh*-raising and Case-driven movement uniformly, we need REPEL constraints relativized to the [Wh] feature. For *Wh*-fronting to proceed as it does (in Hebrew as in English) from a point of origin somewhere in the tree up until it reaches [Spec,C] (C being a Complementizer, the highest functional projection of a full clause), the ranking must be such that raising the *Wh*-element by one phrase is always an improvement for the REPEL constraints. We thus get a ranking where the lower an XP in the phrase structure, the worse a place it is for any *Wh*-element:

(63) REPEL constraints over [Wh]:
⟦*WH/NP ≫ *WH/DP ≫ *WH/VP ≫ *WH/vP ≫ *WH/TP ≫ *WH/CP⟧

[24] This approach was suggested by Gereon Müller (p.c.).

Suppose the constraints over vPs and VPs were reversed (i.e. ⟦*Wh/vP ≫ *Wh/VP⟧). It would then be worse to raise a *Wh*-element from a VP into the vP than to leave it within the VP, predicting that all VPs be *Wh*-islands, which does not appear to be the case. For simplicity, I assume that Island is ranked between *Wh/CP and the rest (64a), and for ease of reference let us say that *Wh/¬CP stands for the part of the subhierarchy which dominates Island (as in (64b)).[25] We can use the same kind of abbreviation for the Repel constraints over Datives, repeated in full in (64c) where Island is interpolated where we previously saw Stay; the abbreviated form of that subhierarchy is in (64d).[26]

(64) a. ⟦*Wh/NP ≫ *Wh/DP ≫ *Wh/VP ≫ *Wh/vP ≫ *Wh/TP ≫ Island ≫ *Wh/CP⟧
b. ⟦*Wh/¬CP ≫ Island ≫ *Wh/CP⟧
c. ⟦*Dat/DP ≫ Island ≫ *Dat/NP, *Dat/VP, *Dat/vP⟧
d. ⟦*Dat/DP ≫ Island ≫ *Dat/¬DP⟧
e. ⟦*Wh/¬CP, *Dat/DP ≫ Island ≫ *Dat/¬DP, *Wh/CP⟧

The partial rankings of (64b,d) taken together are shown in (64e). This ranking is enough to derive *Wh* -object raising. Consider the *Wh*-question in (65) and the structure in (66), showing cyclic raising of a *Wh*-object to [Spec,C] (but omitting other movement that may take place).[27]

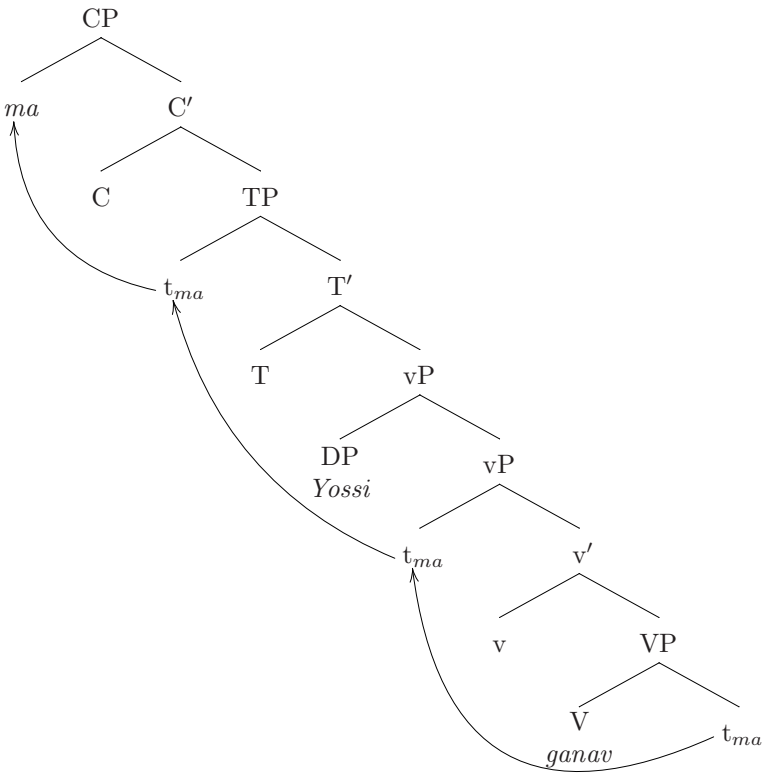
(65) ma Yossi ganav?
what Joe stole?
"What did Joe steal?"

[25] The *Wh/¬CP constraints must take precedence over the general Island constraint so that they can license raising, but Island need not dominate *Wh/CP in order to prevent *Wh*-elements from raising out of a CP, given (63) – if the CP is embedded in any other kind of phrase, *Wh*-raising out of the CP would be prevented by *Wh/¬CP. If the CP is not embedded, raising the *Wh*-element would not satisfy the Repel constraint, as the resulting phrase would still be a CP. The ranking between the unrelativized Island constraint and *Wh/CP could thus go either way, for our purposes. Superraising of *Wh*-elements, in which an element is raised beyond the CP and into a higher clause, would require some constraint, presumably a Repel constraint, to be ranked above the Repel(Wh,π) constraints over whatever projections the element would have to cross to reach its final place.

[26] This abbreviation is not intended to posit any Repel constraints over Datives in projections other than NP, DP, VP and vP.

[27] Note the *Wh*-element *"ma"* receives no Accusative marking – this is due to an independent restriction of overt Accusative marking to definites; Aissen (2003) develops an analysis of this and other similar phenomena within an OT approach and Keine and Müller (2008) reconstruct her analysis within assumptions somewhat more similar to mine.

(66)



Consider now how cyclic optimization proceeds at each point where we see movement in (66). First, *Wh/VP licenses Move to the vP; *Wh/vP is ranked lower, so it does not prevent the Move, but it is ranked higher than *Wh/TP, so in the next optimization the *Wh*-element is Moved again. This chain reaction continues up to the CP: *Wh/TP is ranked above *Wh/CP, so Move takes place one more time. As Island outranks *Wh/CP, movement stops there (but see fn. 25 for a more refined view). We see the tableaux for the relevant steps in (67), with the Repel constraints over [Wh] in DPs and NPs omitted:

(67) Cyclic *Wh*-raising licensed by Repel constraints over [Wh]

I: $DP_{[Nom]}$ + $[_{v'}$ v $[_{VP}$ *stole*$_{[V]}$ *what*$_{[Wh,Acc]}]]$	*Wh/VP	*Wh/vP	*Wh/TP	Island	*Wh/CP
a. $[_{vP}$ $DP_{[Nom]}$ $[_{v'}$ v $[_{VP}$ *stole*$_{[V]}$ *what*$_{[Wh,Acc]}]]]$	*!				
b. ☞ $DP_{[Nom]}$ + $[_{vP}$ *what*$_{[Wh,Acc]}$ $[_{v'}$ v $[_{VP}$ *stole*$_{[V]}$ $<$*what*$_{[Wh,Acc]}>]]]$		*		*	

⇓

I: C + $[_{T'}$ T $[_{vP}$ $DP_{[Nom]}$ $[_{vP}$ *what*$_{[Wh,Acc]}$ $[_{v'}$ v VP]]]]	*Wh/VP	*Wh/vP	*Wh/TP	Island	*Wh/CP
a. $[_{C'}$ C $[_{TP}$ T $[_{vP}$ $DP_{[Nom]}$ $[_{vP}$ *what*$_{[Wh,Acc]}$ v′]]]]		*!			
b. ☞ C + $[_{TP}$ *what*$_{[Wh,Acc]}$ $[_{T'}$ T $[_{vP}$ $DP_{[Nom]}$ $[_{vP}$ $<$*what*$_{[Wh,Acc]}>$ v′]]]]			*	*	

⇓

I: $[_{C'}$ C $[_{TP}$ *what*$_{[Wh,Acc]}$ $[_{T'}$ T $[_{vP}$ DP$_{[Nom]}$ vP]]]]	*Wh/VP	*Wh/vP	*Wh/TP	Island	*Wh/CP
a. $[_{CP}$ C $[_{TP}$ *what*$_{[Wh,Acc]}$ $[_{T'}$ T $[_{vP}$ DP$_{[Nom]}$ vP]]]]			*!		
b. ☞ $[_{CP}$ *what*$_{[Wh,Acc]}$ $[_{C'}$ C $[_{TP}$ <*what*$_{[Wh,Acc]}$> $[_{T'}$ T $[_{vP}$ DP$_{[Nom]}$ vP]]]]]				*	*

4.2.1 Illicit PD raising from external arguments and adjuncts

As we have seen, the ranking so far is sufficient for *Wh*-fronting. However, in (68) we see it predicts the wrong results regarding PD raising from external arguments, which is illicit (Property 2). The tableau shows the optimization that takes place during the derivation of ungrammatical (6b), *"*ha-kelev hitrocec le-Rina"*, 'Rina's dog ran around', after the subject DP, including the PD argument, has been Merged.

(68) PDC wrongly predicted to be compatible with unergatives

I: T + $[_{v'}$ $[_{DP}$ D′ DP$_{[Dat]}$] $[_{v'}$ v *run-around*$_{VP}$]]	*Wh/¬CP	*Dat/DP	Island	*Dat/¬DP	*Wh/CP
a. $[_{T'}$ T $[_{vP}$ $[_{DP}$ D′ DP$_{[Dat]}$] $[_{v'}$ v VP]]]		*!			
b. ☛ T + $[_{vP}$ DP$_{[Dat]}$ $[_{v'}$ $[_{DP}$ D′ <DP$_{[Dat]}$ >] $[_{v'}$ v VP]]]			*	*	

The black hand indicates the optimal candidate is the empirically wrong result. *Dat/DP is ranked above Island because PD raising is not sensitive to *all* islands; but we need to rank some relativized Island constraint above the Repel constraint, as PD raising is sensitive to *some* islands. To derive the correct results, we will need the ranking in (69a), which in (69b) is supplemented with Repel constraints over Genitives.

(69) a. ⟦Island(¬Comp) ≫ *Dat/DP ≫ Island(¬H-marked) ≫ *Wh/¬CP≫ Island ≫ *Wh/CP, *Dat/¬DP⟧
b. ⟦Island(¬Comp) ≫ *Gen/VP, *Gen/vP ≫ *Dat/DP ≫ Island(¬H-marked) ≫ *Wh/¬CP≫ Island ≫ *Wh/CP, *Dat/¬DP, *Gen/DP⟧

In the coming tableaux, I demonstrate the effects of this ranking for a variety of licit and illicit raising contexts. In (70), we see a Genitive possessor within an object DP, with an optional [Wh] feature (in parentheses, as are resulting constraint violations) – raising is illicit here. (This tableau repeats (58), but with the latest set of constraints and an optional [Wh] feature.)

(70) *Gen/VP prevents raising of possessor out of object DP

I: v + $[_{V'}$ *ruin*$_{[V]}$ $[_{DP}$ *the-radio*$_{D'}$ DP$_{[Gen,Dat(,Wh)]}$]]	Isl(¬Comp)	*Gen/VP	*Dat/DP	Isl(¬Hm)	*Wh/¬CP	Island	*Wh/CP	*Dat/¬DP	*Gen/DP
a. ☞ $[_{v'}$ v $[_{VP}$ V $[_{DP}$ D′ DP$_{[G,D(,Wh)]}$]]]			*		(*)				*
b. v + $[_{VP}$ DP$_{[...]}$ $[_{V'}$ V $[_{DP}$ D′ <DP$_{[G,D(,Wh)]}$ >]]]		*!		*	(*)	*		*	

Note that candidate (b) does not violate Island(¬Comp), as it raises the entire content of [Spec,D], whereas the constraint counts violations only for raising *out of* XPs in such positions. As before, candidate (b) loses because it would place a Genitive in the VP, violating a constraint higher than the Repel(Wh,π) constraints, so that the presence or absence of the [Wh] feature does not decide the result.

In a context that differs from (70) only in lacking a [Gen] feature on the embedded DP (i.e. a possessor Dative context), raising is licit (and obligatory) as before, again regardless of the presence or absence of the [Wh] feature:

(71) *Dat/DP forces raising of Dative possessor

I: v + [$_{V'}$ *ruin*$_{[V]}$ [$_{DP}$ *the-radio*$_{D'}$ DP$_{[Dat(,Wh)]}$]]	Isl(¬Comp)	*Gen/vP	*Dat/DP	Isl(¬Hm)	*Wh/¬CP	IslAND	*Wh/CP	*Dat/¬DP
a. [$_{v'}$ v [$_{VP}$ V [$_{DP}$ D′ DP$_{[Dat(,Wh)]}$]]]			*!		(*)			
b. ☞ v + [$_{VP}$ DP$_{[Dat(,Wh)]}$ [$_{V'}$ V [$_{DP}$ D′ <DP$_{[Dat(,Wh)]}$ >]]]				*	(*)	*		*

We now return to the derivation wrongly optimized in (68), where without the full ranking, PDC in unergatives was wrongly predicted to be licit. We see in (72) that with a fuller ranking, we now indeed prevent a Dative possessor from raising out of an unergative (Repel constraints over [Wh] omitted):

(72) Island(¬Comp) forbids PD raising from external argument

I: T + [$_{v'}$ [$_{DP}$ D′ DP$_{[Dat]}$] [$_{v'}$ v *run-around*$_{VP}$]]	Isl(¬Comp)	*Gen/vP	*Dat/DP	Isl(¬Hm)	IslAND	*Dat/¬DP	*Gen/DP
a. ☞ [$_{T'}$ T [$_{vP}$ [$_{DP}$ D′ DP$_{[Dat]}$] [$_{v'}$ v VP]]]			*				
b. T + [$_{vP}$ DP$_{[Dat]}$ [$_{v'}$ [$_{DP}$ D′ <DP$_{[Dat]}$ >] [$_{v'}$ v VP]]]	*!			*	*	*	

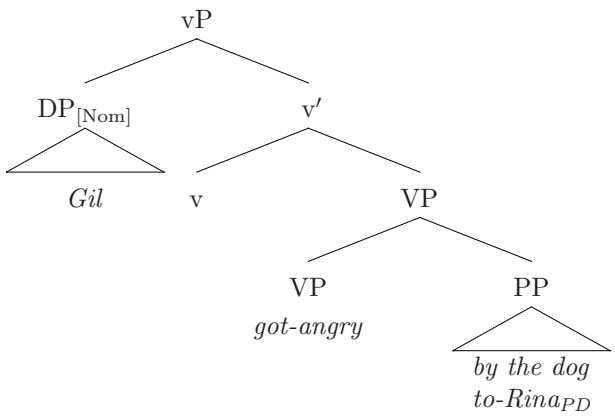
Candidate (a) wins because raising out of [Spec,v] would be raising out of a non-complement position, fatally violating Island(¬Comp). The result is the same for Genitive possessors:

(73) Island(¬Comp) forbids Genitive possessor raising from external argument

I: T + [$_{v'}$ [$_{DP}$ D′ DP$_{[Gen,Dat]}$] [$_{v'}$ v *run-around*$_{VP}$]]	Isl(¬Comp)	*Gen/vP	*Dat/DP	Isl(¬Hm)	IslAND	*Dat/¬DP	*Gen/DP
a. ☞ [$_{T'}$ T [$_{vP}$ [$_{DP}$ D′ DP$_{[Gen,\ Dat]}$] [$_{v'}$ v VP]]]			*				*
b. T + [$_{vP}$ DP$_{[Gen,\ Dat]}$ [$_{v'}$ [$_{DP}$ D′ <DP$_{[Gen,\ Dat]}$ >] [$_{v'}$ v VP]]]	*!	*		*	*	*	

Raising PD out of an adjunct PP, such as a Cause PP, is equally blocked by Island(¬Comp). This can be seen in the derivation of illicit PDC (60b), *"*Gil hitragez le-Rina me-ha-kelev"*, 'Gil got angry by Rina's dog', which would have a structure like in (74) (movement omitted).

(74)



The tableaux in (75) show the step of derivation after the adjunct is Merged and the step immediately after that, when v has been Merged. In both optimizations, PD raising is blocked.

(75) ISLAND(¬Comp) forbids PD raising from adjunct[28]

I: v + [VP *get-angry*VP [PP *by*[P] [DP D′ DP[Dat]]]]	ISL(¬COMP)	*GEN/VP	*DAT/DP	ISL(¬HM)	ISLAND	*DAT/¬DP	*GEN/DP
a. ☞ [v′ v [VP VP [PP P [DP D′ DP[Dat]]]]]			*				
b. v + [VP DP[Dat] [VP VP [PP P [DP D′ <DP[Dat] >]]]]	*!			*	*	*	

⇓

I: DP[Nom] + [v′ v [VP *get-angry*VP [PP *by*[P] [DP D′ DP[Dat]]]]]	ISL(¬COMP)	*GEN/VP	*DAT/DP	ISL(¬HM)	ISLAND	*DAT/¬DP	*GEN/DP
a. ☞ [vP DP[Nom] [v′ v [VP VP [PP P [DP D′ DP[Dat]]]]]			*				
b. DP[Nom] + [vP DP[Dat] [v′ v [VP VP [PP P [DP D′ <DP[Dat] >]]]]	*!			*	*	*	

4.3 The Properties of PDC under a REPEL analysis

We have seen how the REPEL-based analysis works for a variety of licit and illicit movements. Let us now return to the five core properties of the Possessor Dative Construction, repeated here from (14).

(76) *Core properties of PDC*:

Property 1: A PD argument must always be interpreted as possessor or creator.
Property 2: PD cannot be the possessor of an external argument.
Property 3: PD must c-command the possessed DP or its trace.
Property 4: Possessive interpretation is constrained by locality.
Property 5: PD's possessee can be within a PP only if it is an argumental PP.

Property 1: A PD argument must always be interpreted as possessor or creator. As in Landau's analysis, this still follows from the central claim that PDC is derived by raising a Dative from [Spec,D], and the assumption that that position corresponds to the role of possessor or creator.

Property 2: PD cannot be the possessor of an external argument. As we have seen in §4.2.1, this follows from the presence of the constraint ISLAND(¬Comp), which forbids raising out of phrases in non-Complement positions.

[28] Last-minute correction: these tableaux are actually wrong, in that they skip the step of derivation where PD could be raised to [Spec,P]. Perhaps a *DAT/PP constraint is missing, but that constraint must be ranked below *DAT/DP, else raising a PD out of *any* PP would be illicit. These tableaux should actually be accompanied by a third one, picturing a step before them in which PD is raised to [Spec,P]. As there is no evidence for structures where a Dative possessor is located there, the discussion of absolute ill-formedness below, under Open Questions, applies here: optimization should result in PD being replaced or repaired, not left in a location where the output is ungrammatical.

Property 3: PD must c-command the possessed DP or its trace. As in Landau's analysis, this follows from analyzing PDC as a movement phenomenon. As possessors are Merged at [Spec,D] within their possessee, and movement can only go upwards and takes place cyclically in a binary-branching tree structure, a possessor that is raised will always end up c-commanding its possessee.

Property 4: Possessive interpretation is constrained by locality. As noted in §2, it is not entirely clear that a Minimalist movement analysis as such predicts this property, at least as cast by L99. However, under a REPEL-based analysis, this property is quite natural – movement always takes place across short distances only. Specifically, Landau's claim that PD cannot cross a DP node or a TP node (roughly equivalent to "IP" in L99's term) follows easily: raising PD from one DP to the DP it is embedded in would not satisfy *DAT/DP any more than leaving PD in situ. As shown in (57) (§4.1), raising PD higher than would be necessary for it to leave the DP is not generally licensed, so that raising to TP, let alone across TP, does not occur under the proposed constraint ranking.

Property 5: PD's possessee can be within a PP only if it is an argumental PP. Under the REPEL-based analysis, this property follows for exactly the same reason as Property 2. See §4.2.1. This identity of process predicts that if some language allows PDC from external arguments, it would also allow PDC from adjuncts (and vice versa).

4.4 Open questions addressed

Recall the open questions I attempted to address in this part of the analysis:

(77)
a. **The look ahead problem:** if PDC depends on the features of V (as under Landau's analysis, for Case-checking), V's features depend on details of the Derivation.
b. **Asymmetry in island effects:** PDC is sensitive to some island effects, but not others. How come?
c. **Diachrony:** earlier variants of Hebrew had Dative possessors DP-internally. Landau's suggestion that the loss of a feature in [Spec,D] led to the modern (obligatory-raising) PDC is problematic when taken together with (a).

Under the REPEL-based analysis proposed here, (77a) simply ceases to be an issue: movement is modeled such that it is independent of the features of the head of the phrase where it lands (besides the main category-defining features, e.g. [D] and [V], which are present for independent reasons.)

The asymmetry in island effects (77b) is given a specific treatment using three ISLAND constraints. These constraints are also relevant in deriving the core properties of PDC and are proposed as a general treatment of island effects within Extremely Local Optimization.

As for the issue of diachronic change (77c), an OT-based approach offers a principled and simple way to account for such changes: constraint re-ranking. The REPEL-based movement analysis developed in §4 makes it a very small change from DP-internal Dative possessors to the modern PDC. Whereas obligatory PD-raising is motivated by ⟦*DAT/DP ≫ ISLAND(¬H-MARKED) ≫ ISLAND⟧, to derive a ban on raising Dative possessors – thereby allowing them to remain in situ – would require the ranking to hold ⟦ISLAND(¬H-MARKED) ≫ ISLAND ≫ *DAT/DP⟧.

5 Discussion: Comparison with Landau (1999)

Presently, I would like to reflect on some aspects of the difference between the analysis presented here and that of Landau (1999). As suggested above, my analysis holds some empirical advantages, in that it extends naturally to solve some issues not handled by Landau. Of particular importance is the close integration of island effect data absent in L99. As we have seen, an OT-based approach like the one proposed also makes the look-ahead problem of the Minimalist analysis all but disappear.

However, one might think that by making Case-driven movement depend only on constraints and their rankings we lose an explanation of *why* certain locations are bad for certain Cases. After all, in pure Minimalism, the generalization is that Case-marked DPs need to be in a position in which their features can be checked, and here the generalization is that there are violable, rerankable constraints against specific combinations of Case and location. However, it is important to remember that the presence and absence of such features on different heads in Minimalism is actually quite a close equivalent to the constraints of OT: both are methods for modelling parametrization.[29] The advantage of the OT approach, I submit, is that constraint-oriented parametrization is system-wide, whereas the head-by-head parametrization of Minimalist approaches leaves ample room for exceptions and special cases. Ultimately, to say that Dative possessors must be raised to [Spec,V] to have their Case check should lead us to ask how come we get the needed Case features on V but not on D. After all, an extra feature needs to be added either way (or, alternatively, be present on all heads and then removed in most contexts). Adding it to D heads would eliminate the movement seen in PDC, and one might expect that to be the predicted result, especially in the Minimalist Program, an approach that explicitly seeks to explain phenomena as results of either optimal design of the system or requirements of interfaces to extra-linguistic mental modules (cf. e.g. Chomsky, 2000) – barring an explanation of the ban on Dative-checking D heads in terms of interface requirements, would not an optimal system prefer that solution to the rather cumbersome movement of a possessor into the verbal domain?

I submit the present work as an attempt to demonstrate that Minimalist and OT approaches to syntax have common elements that allow for effective combination. One other aspect where one might see an advantage in the present proposal from a Minimalist perspective is this intriguing (albeit tentative) emerging generalization: in all of the derivations shown, Merge appears to be preferable over Move, especially in the many steps for which no tableaux were provided in which Merge must emerge as the optimal step. To provide a full account of this, one would need to add constraints into the mix that require Merge of the input from the Buffer. However, even without such a constraint, Merge is often preferred, *without any explicit requirement of "Merge before Move"*. An OT-based approach may, under sufficient investigation, be able to derive this and other explicit generalizations of the Minimalist Program, as emergent properties of the system rather than explicit derivation-guiding restrictions.

6 Open Questions and Further Inquiry

6.1 The workings of Case assignment

Many open questions remain regarding the Case assignment system sketched in 3. For instance, as noted in fn. 13, could the [±o](wner) θ-feature be done away with in favor of some system

[29] Cf. Baker (2008) on the Borer-Chomsky Conjecture, identifying parametrization with differences in features on lexical items.

which achieves the difference in distribution between the Nominative and the Genitive by other means, such as constraints relating Case assignment to syntactic environments?

And more generally, is the system proposed in §3 even tenable? Without more explicit testing of possible rankings of the Case/θ-Role subhierarchies, it is difficult to tell if this proposal holds any water.

6.2 Peripheral properties of PDC

A few less central properties of Hebrew PDC were omitted from the discussion:

(78)
a. PDC is impossible where the possessee is the agent in a process nominal. (L99, p. 6)
b. Sentences where the possessee of PDC is a Dative argument are very marginal, unless the Dative argument is a pronoun. (L99, pp. 19)
c. PDC is incompatible with two-place verbs unless they are in some way associated with an agentive argument entry (either by having one themselves, or by having a variant with one, or by being in a syntactic context that forces an agentive reading). (L99, p. 31)
d. PDC is incompatible with verbs that take a subject-matter argument. (L99, p. 33)

(78a) would presumably be explained quite readily along the lines of Properties 2 and 5 – i.e., Island(¬Comp) forbids movement out of an external argument.

(78b) quite readily invites an OT-based analysis using some constraints against multiple instances of the same Case in a clause. The details would require further inquiry.

(78c) seems very difficult to model, and Landau's proposed solution – that some association with agentivity is required to project little v – is highly problematic. For instance, if a functional sequence is presumed to hold over the heads v, T, and C, such that each requires the previous in order to trigger its Merger, what happens in clauses where little v is skipped? I have no better solution to offer at present, but this peripheral restriction on PDC seems well worth exploring.

(78d) invites an analysis in terms similar to L99's solution – that the landing site is unavailable due to a covert argument. This would presumably require some ban on multiple specifiers.

6.3 Repel and movement

Locality of movement. The approach I propose tries to emulate that of Stroik (2009), in that movement is supposed to only take place from one phrase to the next. However, this has not been explicitly or strictly enforced, although rankings have conspired to eliminate candidates which move further (as can be seen, for instance, in (75)). It remains to be seen how exactly this strictly local movement can be implemented within Extremely Local Optimization, and whether such an implementation would significantly change the results. The easiest way to achieve it (but not necessarily the best way) would be to stipulate it in the definition of the candidate set, such that Movement can only take SOs up to a certain level of embedding.

Deriving Repel subhierarchies? The Repel constraints I proposed in §4 have a more than passing resemblance to the constraints produced by Harmonic Alignment (§1.1.1). It may be desirable to derive universal subhierarchies of Repel constraints in a similar manner, or perhaps even replace the Repel constraint entirely with simple Avoid constraints. Explicit investigation of different rankings would be necessary in order to see whether the Repel constraints as proposed might overgenerate, e.g. by allowing certain rankings which would derive impossible results. It may conceivably be shown that Harmonic Alignment would produce a more limited range of possible rankings, which may be necessary for correct predictions. Another promising

option is to break down the phrasal domains and perhaps the Cases involved into natural classes and restrict the REPEL subhierarchies in some way based on generalizations about these classes.

Absolute ill-formedness? In (72), we saw that raising a Dative possessor out of an external argument is impossible. However, this is not entirely the correct result – the resulting structure, *"*[[ha-kelev le-Rina$_{PD}$]$_{DP}$ hitrocec]"*, where the PD is DP-internal, is actually ungrammatical. The same holds for (75), where we saw that raising a Dative possessor out of a Cause PP is illicit. In principle, there are a few options for deriving this data. I will explore one type of solution, in which the ungrammatical structure is ultimately mapped onto some grammatical structure. This is analogous to a classic OT-phonological explanation for phoneme "vocabularies", whereby segments absent from a language are absent because if they were to be present in input, they would be mapped to other (attested) segments. Another type of solution, not explored here, would be such that a derivation where a Dative possessor is stuck in a DP terminates in some way without producing any output (cf. McCarthy, 2002, §4.1.2).

Suppose there is some operation allowed in the candidate set which could satisfy the REPEL constraint *DAT/DP without movement. Suppose there is some constraint against this type of candidate. If that constraint were ranked below *DAT/DP but above the constraints ISLAND(¬H-marked) and ISLAND, this might derive the correct result: in contexts where no higher constraint intervenes, movement takes place, as it satisfies the REPEL constraint and the constraint against the alternative repair strategy, while violating only the lower ISLAND constraints; in contexts where the higher constraint ISLAND(¬Comp) makes movement a non-option, the next-best solution is the additional repair strategy. The question, then, is what exactly this strategy is. It must ultimately derive the fact that in Hebrew, any possessor (or creator) found within a DP is a Genitive. I have two suggestions:

1. The candidate set might be expanded to include candidates in which matter is added from a source other than the Merge Buffer. This could allow the repair of a Dative possessor, such that it could receive a [Gen] feature late in the derivation. Under the approach developed in §3, this would be possible even if these additions are limited to the Numeration, as the missing [Gen] feature is proposed to be present, but discarded from the derivation of the DP/KP. However, under that approach the [Gen] feature is its own head, and adding a head into a complete phrase retroactively raises some difficulties, e.g. for the cyclic nature of structure-building. On the view that Case features are carried directly by the DP, that problem is eliminated. Regardless of the precise technical implementation, this type of solution would construe unmovable PD as mapped onto a Genitive possessor construction.

2. The RECOVERABILITY constraint (§4.1), which forbids the Delete operation, could be ranked less highly than previously suggested, i.e. below *DAT/DP and the lower ISLAND constraints. This would lead to the deletion of Dative possessors that cannot be moved – Movement would still be preferable, as it violates a somewhat lower constraint, but when it is ruled out, Deletion would be preferred to leaving PD in a DP. Under this approach, unmovable PD is construed as mapped onto a possessor-less construction.

7 Summary

An approach to the Dative Possessor Construction (PDC) of Modern Hebrew was presented, combining elements of Minimalist analysis and Optimality Theory (OT). The analysis adopts the central claim of Landau (1999) that PDC is a movement phenomenon. It improves upon that approach by providing an explicit account for the initial generation of the Dative possessor,

accounting for the non-uniform sensitivity of PDC to island effects, and eliminating a look-ahead problem. The OT analysis is cast in terms of Extremely Local Optimization, where optimization takes place within a derivation, determining after each step of derivation what the optimal next step is.

Section 1 provided a general introduction, including (§1.1) theoretical background about OT and Extremely Local Optimization and a summary of the core properties of PDC (§1.4). Section 2 summarized Landau's analysis and raised some issues and open questions regarding his approach (§2.1). I subsequently presented my analysis, which was divided into two parts.

Part I (§3) dealt with the generation of the Dative possessor and sketched a general approach to Case alignment and assignment (§3.2). This approach made use of the insights of Reinhart (2003) regarding the composition of Thematic Roles and of Caha (2009) regarding the composition of Case. I proposed the OT mechanism of Harmonic Alignment for the alignment of these two areas within a system that makes explicit predictions while allowing for cross-linguistic variation and some language-internal flexibility. In §3.3, I presented an explicit system of derivation within Extremely Local Optimization and outlined how it derives optional Dative case on possessors using a Faithfulness constraint Max-Case and a series of Markedness constraints against Case features.

Part II (§4) presented a novel approach to Case-driven movement, rooted in Extremely Local Optimization. This approach made use of the concept of Repel-based movement (Stroik, 2009), which is motivated always by the source of movement rather than its landing spot. I proposed (§4.1) a series of Repel constraints, which penalize certain Cases in particular syntactic locations. I then showed how these constraints can be used to model some of the movement involved in PDC within Extremely Local Optimization. I subsequently (§4.2) introduced Island constraints, which can help account for further restrictions on PDC, in particular including data comparing PDC with *Wh*-movement, which was not covered by Landau's analysis. I showed that the proposed system can derive *Wh*-movement as well as some of its differences to PD raising.

Section 5 briefly discussed some of the differences between this approach and Landau's (or rather, Minimalist approaches in general), pointing out some of the advantages of my proposal. Section 6 outlined several open questions that remain and attempts to suggest approaches to answering them. Finally, Section 7 is the summary you have now finished reading.

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