

# Pronominal datives

## The royal road to argument status

Mira Ariel<sup>1</sup>, Elitzur Dattner<sup>1</sup>, John W. Du Bois<sup>2</sup> and Tal Linzen<sup>3</sup>

<sup>1</sup>Tel Aviv University / <sup>2</sup>University of California, Santa Barbara / <sup>3</sup>New York University

Based on a large corpus of dative constructions in Hebrew, we propose that dative-marked pronominals manifest a facilitated path from adjunct to argument. Since datives tend to be pronominal, adding them onto existing argument structures avoids a clash with the Preferred Argument Structure (PAS) Quantity constraint against more than one lexical noun phrase per clause. Supporting a more fluid adjunct/argument distinction, our first claim is that different Hebrew datives are grammaticized as arguments to different degrees. We then demonstrate a correlation between the degree of grammaticization of the dative as an argument and pronoun/lexical ratios. We show that incipient grammaticization phases involve virtually exclusive use of pronominal datives, but deeper grammaticization phases allow increased use of lexical nouns, within the constraints of PAS. Thus, it is pronouns that blaze the path from adjunct to argument status.

**Keywords:** Hebrew, grammaticization, Preferred Argument Structure, adjunct/argument, dative constructions

### o. Introduction

This paper is about datives and their grammaticization from adjuncts into arguments, and especially about the critical role of pronouns in this process.<sup>1</sup> It is our claim that pronouns pioneer the way for adding an argument slot to an existing

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1. Note that we consistently use the term grammaticization, rather than the more common grammaticalization, because no shift from the lexical to the grammatical is involved, nor is there an evolution from some ungrammatical form to a grammatical form (a change which does occur sometimes). Since most historical changes pertaining to grammatical structure are such that an already grammatical form evolves into a new configuration of grammar, we feel that the term grammaticalization evokes inappropriate assumptions.

argument structure or construction. We make this case with reference to Hebrew, which has a rich variety of dative constructions. We argue that dative-marked nominals represent a facilitated path to grammatical argument status. On the one hand, there is an expressive interest in construing the entities that the datives stand for as if they were part of the verbalized event, since these entities are typically salient humans (often the speaker or the addressee). These humans typically have an interest in, and hence are relevant to, the event. On the other hand, since the typical encoding of such entities is as pronouns, adding them does not violate known cognitive constraints on the use of lexical nouns, as posited by Preferred Argument Structure (PAS, Du Bois, 1987, 2003a, 2003b, Du Bois et al., 2003b). The addition of new event participants allows speakers to achieve enhanced expressivity through syntactic complexity-building. The use of pronominal datives allows speakers to attain their expressive goals while satisfying the constraints of PAS. We thus argue that the grammaticization of new arguments relies, especially in its initial phases, on the introduction of dative-marked pronominals.

Consider the following pair of examples, the first containing an adjunct *bishvil* ‘for’, the second a dative:

- (1) a. asiti et ze **bishvilex**  
 I.did ACC. this for.you.F  
 (www.mikmak.co.il/gallery?id=159319&ctgId=6)
- b. ze lo ani asiti **lax** et ze  
 It (is) not I (that) did to.you.F ACC. this  
 (www.ynet.co.il/articles/0,7340,L-3813107,00.html)

Note that the event in (a) does not include the addressee as a participant, although she is the designated recipient of its product. The speaker in (b) denies having raped the addressee, which has the addressee as an inherent participant in the (denied) event. The *bishvil* NP is an adjunct, the *le* NP, an argument.

Since grammaticization is gradual, we also expect the differences to be gradient. We assume that adjuncts and arguments are not invariably sharply distinguished, and therefore predict a gradability of the degree to which syntactic phrases constitute arguments versus adjuncts. We first subject seven Hebrew dative constructions to various argumenthood tests from which we conclude that the different datives are grammaticized as arguments to varying degrees. This finding then serves as the starting point for our main claim, that degree of argumenthood is correlated with the proportion of pronominal versus lexical datives. Specifically, we claim that dative constructions at early stages of grammaticization manifest a very high proportion of pronouns, while intermediate phases of grammaticization contain more lexical datives than early-stage constructions, and highly grammaticized datives even more so.

In the absence of a sufficiently large spoken Hebrew corpus (let alone a historical spoken corpus representing different periods), we test these predictions against a corpus of Hebrew texts, based on the Israblog Corpus (Linzen, 2009b), a 165-million-word corpus of blog posts from the Israblog website ([www.israblog.co.il](http://www.israblog.co.il)). While this is a written corpus, the register is typically quite informal. We show that different datives have reached argument status to varying degrees. Given that our data are synchronic, instead of addressing the grammaticization cline as chronologically ordered, we show that different datives occupy different positions on this cline at a single point in time.

We start off with some theoretical background (§1), followed by the mechanism we offer for the grammaticization of Hebrew datives into argument status (§2). Section §3 supports the first part of our argument, namely that different datives have reached argument status to varying degrees. Section §4 then supports our main claim about a correlation between argumenthood and lexical/pronoun ratios. We address potential objections to our analysis in §5, and conclude with §6.

## 1. Background

Section §1.1 introduces the Hebrew dative constructions analyzed in this paper. We briefly discuss definitions of arguments and adjuncts in §1.2, in order to go on to show that some adjuncts, specifically dative adjuncts, may evolve into full-fledged arguments (§1.3).

### 1.1 Hebrew datives

Consider the Hebrew datives in (2), which introduce an added human role:<sup>2</sup>

- (2) a. *ha-shana avra li be-tisa!*  
the-year go.by.PST.2SG.F to.me in-flight  
‘The year went by for me very fast.’ (israblog.nana10.co.il)
- b. *ha-shana avra li be-cead-ey cav.*  
the-year go.by.PST.3SG.F to.me by-step-PL turtle  
‘The year went by for me very slowly.’ (cafe.themarker.com/post)

The speakers in (2) refer to themselves with dative pronouns, although they do not take part objectively in the events described by the verbs. But they are verbally profiled as somehow involved in the events nonetheless. The same time period (a year)

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2. We do not limit ourselves to the Israblog Corpus in the nonstatistical parts of this paper. Rather, the examples were chosen according to how well they exemplify the relevant point.

is differently construed in (2a) and (2b), reflecting the subjective dative (Halevy, 2004). As we see below, not all Hebrew datives are so clearly nonarguments.

The term dative originally refers to a grammatical case which denotes a typically human entity affected or “passively implicated” by the verb’s state or action (Crystal, 1985: 85, 257). Hebrew does not have a case system, but following common practice, we treat as datives NPs marked by a prefixed preposition *le-* ‘to’ (ultimately derived from the allative *el* ‘to, towards’ Gesenius, 1846). While cross-linguistically, the prototypical role served by the dative concept is the recipient of a transfer verb (Haspelmath, 2010), datives are definitely not restricted to that role.<sup>3</sup> Hebrew makes an extensive use of datives, and datives fulfill all the functions outlined in Haspelmath’s (2003) dative semantic map (and more). In fact, the trigger for the evolution of all the Hebrew dative constructions is most likely not the recipient function, but rather the function of the dative as traditionally defined, namely as a human affectee, where the effect is not as direct as that on patient affectees (Croft, 1991). We treat the datives under consideration as constituting a set of polysemous dative constructions, rather than as a set of multiple functions associated with the dative, because the identification and interpretation of the specific function crucially relies on other elements in the utterance (most often the nature of the event denoted by the predicate).

(3)–(9) introduce the dative constructions here under discussion:

(3) **Governed**

*ani eezor                    lax                    maxar.*  
 I help.FUT.1SG to.you                    tomorrow.  
 ‘I will help **you** tomorrow.’

(www.tapuz.co.il/forums2008/viewmsg.aspx?forumid=1694)

(4) **Predicative Possessor**

*ze            ma    she-yesh            li.*  
 this (is) what that-there.(is) to.me  
 ‘That’s what I have.’

(E.L. Sept. 18, 2006)

(5) **Recipient** of a transfer verb:

*az natata                    la    et    ha-telefon            shel maya?*  
 so gave.PST.2SG.M to.her ACC the-telephone of Maya?  
 ‘So you gave **her** Maya’s phone number?’

3. In fact, it may very well be that recipient role is a narrowing of the more general benefactive role (Coleman, 2010). This is very clearly the case for the Hebrew External Possession Dative construction (Linzen, 2009a), and see Kittilä (2005) about “recipient-beneficiaries” in English.

(6) **External Possessor:**

*hi lo roca she-yexatetu la ba-xayim.*  
 she not want.PRS.F that-poke.FUT.3PL to.her in.the-life

(Reshet Bet, Jan 29, 2011).

‘She doesn’t want people to rummage around in **her life**.’

(7) **Affectee: Benefactive (a)/Malefactive (b):**

a. *hexlafti lax oto.*  
 change.PST.1SG to.you.SG.FEM him

(M.A. April 11, 2012)

‘I changed him (the baby) **for you**.’

b. *ze kara LA! asu LA!*<sup>4</sup>  
 It happen.PST.3SG.M to.her! did.PST.3SG to.her

(Documentary film, Israeli TV, Channel 8, April 8, 2012).

‘It (her<sub>i</sub> daughter<sub>j</sub>’s murder) happened **to HER<sub>i</sub>!**, They did it **to HER<sub>i</sub>!**’

(8) **Ethical:**

*taxziku li maamad sham!*  
 hold.IMP.2PL to.me on there!

(M.A. Feb. 14, 2012).

‘Hang in there (**for me**)!’

(9) **Coreferential:**

*ve-ata ka-ragil, roe lexa srat-im?*

and-you, as-usual, watch.PRS.M to.you movie-PL?

(M.A. Feb. 18, 2012)

‘And you, as usual, are (**leisurely**) watching movies?’

The interpretations associated with the various dative constructions are captured by the free glosses above. However, we should note that while both Ethical and Affectee datives present the entity they stand for as somehow affected by the state of affairs denoted by the verb, only in the Affectee cases is the event actually *intended* to affect the dative entity. In addition, whereas in Affectee cases the effect is objective, for the Ethical datives the effect is subjective (psychological). Note that the dative in (7b) could have been an Ethical dative, but the mother is presenting her daughter’s murder as having been perpetrated against her (the speaker is the murdered woman’s son, in fact complaining about his grandmother having appropriated his mother’s death). We do not here go into the question of how speakers identify which dative construction is intended (but see Dattner, 2015 for a detailed analysis of a number of dative constructions).<sup>5</sup> But just to show that the dative may receive multiple distinct interpretations, depending on which construction is assumed to have been intended, consider (10), which was intended as a Malefactive

4. Caps indicate prosodic accent.

5. See also Boneh and Bar-Asher Siegal (2014).

dative, but could be seen as an External Possession dative, especially in view of the body part involved (Linzen, 2014):

- (10) *tafsik kvar le-hoci li et ha-bakbuk me-ha-pe.*  
 stop.IMP.2SG already to-take.out to.me ACC the-bottle from-the-mouth  
 ‘Stop taking the bottle out of (your) mouth on me.’ (G.A.-K., Aug. 28, 2009)

The point is that, whereas many of the (less grammaticized) constructions are rather similar to each other in their interpretation, the interpretations are still different enough for us to treat the constructions as distinct. Readers should assume that whenever we exemplify a dative construction, it is at least possible to interpret it in that way, even if an analysis as another construction is also acceptable for the example.<sup>6</sup>

## 1.2 Adjuncts and arguments

Since the adjunct-to-argument grammaticization process is crucial to our argument we briefly define the two terms here, but actually opt for a continuum between them. This continuum can motivate the grammaticization process of datives into arguments (§1.3, §2.2), which results in differential grammaticization phases for the different dative constructions (§3).

An unequivocal argument “ideally” meets many conditions. Conceptually, it should stand for a logically necessary participant of the specific event depicted by the verb, in that the event cannot be complete without that participant. Argument participants are not only conceptually necessary, they are ones speakers routinely profile with respect to the event (as opposed to leaving them implicit). There is a

6. Note that Bosse et al. (2012) propose an analysis for Hebrew that recognizes fewer dative constructions than we find, and also classifies them differently. For lack of space we do not present arguments against their classification of dative constructions, but offer the following characterization for two constructions where our analyses differ. First, Bosse et al. claim that Hebrew lacks a Benefactive construction, although it certainly has sentences of the type they classify as Benefactive in other languages, such as the counterpart of *X installed to Y the program*. Next, the cases they classify as the Affected Experiencer construction we analyze as either External Possession (as in (5)) or Ethical datives (as in (6)), depending on whether the effect is mediated by an object (the External Possession dative) or not (the Ethical dative). The reason for this choice is that when the effect is mediated by an object there has to be an objective relation between the dative-marked entity and the object. Bosse et al. distinguish between cases where this relation is or is not, in addition, explicitly marked by a genitive. For them, if it is, it cannot be the External Possession construction, but has to be the affected experiencer construction. But this marking does not alter the participation of the entity in the event, nor does it alter the meaning, as can be seen by the two versions in (13), which are paraphrases of each other. Such cases are distinct from Ethical datives, which stand for entities that are specifically not part of the scene.

semantic dependence between the verb and its arguments (complements, especially — see Keenan, 1984). Syntactically, the verb is said to lexically sub-categorize for the complement, which is an NP prototypically (rather than an adverbial, Huddleston & Pullum, 2002: 224), and its occurrence should preferably be obligatory. Dryer (2011a, 2011b) finds that arguments, especially complements, tend to occur immediately adjacent to the verb (see also Company, 2001, Culicover & Jackendoff, 1997, Radford, 1988). If governed by a preposition, the preposition should preferably be an invariant one, its meaning often opaque (cf. *depend on* versus the locative for *put*, which can take different prepositions, Huddleston & Pullum, 2002).

Adjuncts are quite the opposite. “Ideally”, they denote non-intrinsic properties of events, only contributing peripheral information about them, and typically setting them in some context (locatives and time adverbials). They are always optional, subject only to semantic or pragmatic compatibility with the verb, depending on their specific (transparent) meaning. If they represent participating entities, these are external to the event. They do not bear a particular relation to the verb, and tend not to impact the event it denotes or be impacted by it. They also do not usually occur immediately adjacent to the verb. The interpretation of adjuncts is stable, being rather invariant across different verbs/event types.

Still, while the two categories are clearly distinct for textbook cases, the argument/adjunct distinction has proved hard to apply in specific cases (Thompson & Hopper, 2001). Languages differ as to how, and even whether, they mark the distinction (Thompson, 1997).<sup>7</sup> Thus, both syntactic and semantic tests for argumenthood/adjuncthood have been subject to criticism (e.g. Comrie, 1993, Culicover & Jackendoff, 2005, Dowty, 2003). While some adjuncts are clearly external to the event, in that they do not participate in defining its nature, some are definitely not external, as in (11a), where a different type of walking is involved once the hands are introduced as participants. Some adjuncts seem to be in-between (Bresnan, 1982), because it could be argued that the nature of the cleaning in (11b) is affected by the kind of instrument:

- (11) a. He walked *on his hands*  
(www.neatorama.com/.../climbing-mt-kilimanjaro)
 b. *You can clean it out with the — with the hoof knife?* (SBC: 001)

A richer set of categories, based on finer distinctions, have then been proposed in the literature. What is especially pertinent to the research reported here is the common view that datives specifically constitute an intermediate category

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7. Macushi (a Cariban language) employs an adjunct for what English treats as a logically necessary complement of *eat* (e.g. roughly ‘eat with reference to fish’) (Abbott, 1991).

between syntactic argument and adjunct (Company, 2001, Margetts & Austin, 2007). Huddleston & Pullum (2002) claim this for English benefactives. Another relevant proposal views construction-based arguments (Goldberg, 1995) (e.g. the recipient in the double object construction with a nontransfer verb, as in *She kicked him the ball*) as a category in between argument and adjunct (Kay, 2005). Whereas verbal arguments denote the prototypically central entities involved in the event as depicted by the verb, construction-based arguments denote entities which the speaker optionally chooses to profile as relevant to the specific event, although their relevance is restricted to the ad hoc event referred to. Thus, they are not selected for by the verb, but they do extend the semantics of the verb, and also manifest the syntactic behavior of an established core argument (as in passivization, e.g. *he was kicked the ball*). This also includes applicative constructions and valence-increasing operations on verbs, whereby nonselected arguments can be added onto the predication.

We take arguments and adjuncts to constitute a continuum, which is compatible with the grammaticization process of adjuncts turning into arguments. At the two extreme poles are what were described above as “ideal” arguments and “ideal” adjuncts. In between are various intermediate cases, where the phrase is governed by the specific construction it constitutes a part of. In the next section we argue that nonarguments can and do evolve into arguments.<sup>8</sup> This will then justify our classification of dative occurrences within various dative constructions as having acquired argument status to a greater or lesser extent (§3).

### 1.3 From adjunct to argument

One explanation for why the distinction between adjuncts and arguments can be so hard to draw is that arguments routinely evolve out of nonarguments, gradually acquiring properties that make them more argument-like. Of course, most adjuncts do not become arguments. But some do, and the first question is why speakers care enough about some adjuncts to let them cross the boundary into argument status. The idea is that there is a difference between an event that happens to have an additional participant and an event whose nature is modified or reconceived due to the added participant. Arguments achieve the latter effect better than adjuncts.

Consider the following innovative Hebrew dative examples:

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8. Givón's (1984) claim that the Hebrew dative cannot grammaticize into a Direct Object is not incompatible with our point that Hebrew datives may grammaticize into arguments, as we are not claiming an indirect to a direct object shift.



- (12) a. *ze betax nora kef li-hiyot xola le-ima kamo-x*  
 it surely awfully fun to-be sick.F to-mother like-you  
 (www.xnet.co.il/fashion/articles/0,14539,L-3092936,00)  
 ‘It must be awfully fun to be sick with a mother like you.’
- b. *hu cilcel li ba-telefon ve-amar...*  
 he call.PST.3SG.M to.me on.the-telephone and-say.PST.3SG.M...  
 ‘He called me on the phone and said.’  
 (www.falunnews.org.il/articles\_p/2007/08/c\_01/89035\_29.htm)

The two uses of the dative in (12) are not (yet) grammaticized. But they are certainly potentially grammaticizable. The more conventional way to convey the message in (12a) would be to encode the mother using a transparent prepositional adjunct (*im* ‘with’, *lecad* ‘near’, or *ecel* ‘at some person’s home’). Similarly, *cilcel* ‘call’ in (12b) typically takes the allative *el* ‘to, toward’, rather than the dative *le* ‘to’.

We suggest that (12) exemplify two different cases. (12a) is a good example for showing the initial motivation behind the profiling of an external participant as if it were internal to the state of affairs. Had an adjunct been used for the mother role instead, the event would have been ‘being sick’, except that an additional participant, the doting mother, is relevant to it. This is why a comma (an intonation break) could separate the adjunct from the verb in this case. This is not so once the dative is used. The event depicted by (12a) is a modified event: ‘being sick with a specific (doting) mother’. While a construction such as (12a) is not common, it nicely illustrates the motivation behind many of the dative constructions, namely the wish to present a central human entity as inherently, rather than peripherally, tied to the state of affairs depicted by the predicate. (12b), on the other hand, is not as rare, and exemplifies the already established Hebrew pattern of using a dative for verbs collocating with human adjuncts, especially if the original preposition is the allative *el* (Dattner, 2015).

These two innovative examples represent two phases on the grammaticization chain for dative arguments. The first reflects a very early stage where ad hoc circumstances call for the integration of an added human referent. The second reflects a rather advanced stage of grammaticization, where there already is a very salient discourse profile for *cilcel* ‘ring’ co-occurring with *el* ‘allative to’, referring to a human and receiving the idiomatic meaning of ‘telephone (v.)’. We propose that this is the source of Governed datives, where the human involved (originally as adjunct) is linked to a specialized interpretation for the verb, modifying the very event it denotes. Indeed, such humans, which contribute to a specialized meaning, often get marked by datives in Hebrew. Example (13) represents a more advanced case with a minimal pair illustrating the co-occurrence of adjunct and argument in the same text. Here, the original use (in the body of the text) encodes the added

human as a nonargument *bishvil* ‘for’ adjunct, while the later stage replaces it with a dative (as in the headline):

- (13) [HEADLINE]  
*ha-yehudim lo yacbiu li ki...*  
 the-Jews not vote.FUT.3PL to.me because...  
 ‘The Jews won’t vote for me because...’  
 [BODY]  
*hu lo xoshesh she-ha-yehudim lo yacbiu*  
 he not afraid.M that-the-Jews not vote.FUT.3PL  
*bishvilo mikevan she...*  
 for.him because (that)...  
 ‘He’s not afraid that the Jews will not vote for him because...’  
 (Haaretz, March 30, 2012).

Frequently co-occurring allatives, which form specialized meanings with their verbs, may turn into datives as in (12b), (see Dattner, 2015), as may objectively external participants portrayed as internally involved via a relatively compact syntax, as in (12a).<sup>9</sup> Both processes are typical for humans and animates, and motivate the evolution of the various dative constructions addressed here.<sup>10</sup>

## 2. Grammaticizing datives

This section outlines the grammaticization pathway we propose for Hebrew datives. The picture is complex, with multiple ramifications. Some of these we express as predictions, to be tested in the rest of the paper. The grammaticization process begins with nominals which are clearly nonarguments and ends with them becoming, in certain constructions, clearly arguments. Grammaticization, we believe, is never guaranteed, because, as motivated as it might be, it is bound to clash with other competing motivations (Du Bois, 1985, 2014), which may stand in its way. As we see below, the use of pronouns plays a key role in resolving such conflicts. Crucially, we distinguish between discourse-time ad hoc processes leading to a salient discourse profile (§2.1) and grammar-time processes leading to grammaticization (§2.3).

9. Consider “Bike the bridge” (an ad for bike rental in San Francisco, spotted November 2012) instead of the conventional *bike on the bridge*. And see Borochofsky (1998) for many such promotions of adjuncts into arguments in Hebrew.

10. The similarity to applicative constructions with their strong preference for promoting humans (and topics) to argument status (Peterson, 2006: 123, Polinsky, 2011) is not surprising.

## 2.1 The discourse-time process: All roads lead to pronouns

Our story begins with forces of expressivity and cognitive salience, which prompt speakers to profile humans as centrally involved in events/states of affairs, even when these humans play neither an Actor (agentive) nor an Undergoer (patient) role in the event. Due to anthropocentrism, we tend to see (certain) humans as highly relevant to events, and we tend to view events as relevant to humans even when the humans concerned may not be directly and/or objectively involved in the events. Events are often evaluated with a degree of subjectivity by observers who have an interest in the event being described (Haspelmath, 2003). This discursal tendency is not easily served by core argument roles. These are often

**Table 1.** On-line utterance production process: Adding a nonparticipant

Goal	Implication	Conflicting force	Resolution
a. Include a <b>nonparticipant</b> as involved in the predication.	Adding a nominal lengthens the utterance, which could lead to either an unusually long IU or the splitting of the IU into two.	Avoid too long IUs; Avoid separation between the verb and its arguments.	The added nominal should be <b>short</b> (e.g. pronoun).
b. Add a <b>subjective</b> point of view: The added entity is near and dear to the speaker.	The added nominal likely stands for a human entity, which may be familiar.	Generalized Expressivity calls for allowing any kind of noun phrase.	The added nominal should be limited to a <b>high-accessibility</b> marker (e.g. pronoun).
c. Profile the added participant as <b>central</b> to the event.	The added nominal should be structurally integral to the clause, e.g. an argument.	Argument structures are fixed per verb.	The added nominal can begin as a <b>conceptual</b> , (rather than syntactic) <b>argument</b> .
	The added argument should at least function like an argument.	PAS Quantity Constraint: No more than one lexical noun per clause core (per argument structure).	The added nominal should be <b>cognitively light</b> (e.g. pronoun).
d. Profile the added participant as specifically <b>affected</b> by the event.	The added nominal should fill a role similar to that of direct object, i.e., occupy the direct object position (adjacent to the verb).	The position adjacent to the verb is already occupied by the direct object.	The inserted nominal should be <b>short</b> , so that the disruption between the verb and the direct object is minimal (e.g. pronoun).

viewed as specifying the realization of participants according to a thematic hierarchy (Dowty, 1991) of who does what to whom, based on some version of a causal chain hierarchy (Croft, 2012). But the goal of expressing an interested party (via a dative) often goes beyond objective causality.

Adding an ad hoc participant to a predication is no trivial matter, however. Table 1 juxtaposes the speakers' goal in introducing a nonparticipant with the competing forces it faces. We break the speaker's goal down into four aspects: (a) adding a **nonparticipant** to the predication, (b) adding a **subjective** aspect to the predication, (c) profiling the added participant as **central** (rather than peripheral) to the event, and (d) profiling the added participant as somehow **affected** by the event.

Let us briefly consider each of these motivations, along with its implication for the resulting utterance, the opposing forces it competes with, and most importantly, the resolution of the competing motivations. Taken together, the resolutions combine to motivate the selection of pronominal over lexical datives.

- (a) The expressive goal of adding a nonparticipant to the clause entails a longer utterance, which necessarily lengthens the intonation unit (IU) where the verb occurs, or else splits it in two. This clashes with the motivation behind IUs: IUs are cognitive processing units (Chafe, 1979, 1994), which is why they tend to be restricted in length, and why complements have a strong tendency to co-occur with their governing verb within the same intonation unit, as Croft argued based on Pear Film narratives in English (Croft, 1995). We conducted some additional informal counts (presented in Appendix A) to support this assumption for natural conversation data. Indeed, arguments rarely occur outside the intonation unit of their governing verb, while adjuncts often do, in our small sample of English conversation. To see that this is a real issue for the added Hebrew datives under discussion, consider (14), where the slightly longer direct object used by the moderator may have led him to divide up his utterance into two IUs, so that the complement is separated from its governing verb:

- (14) Lawyer: *hi lo roca she-yexatetu la ba-xayim.*  
 she not want.PRS.F that-poke.FUT.3PL to.her in.the-life.  
 Moderator: *hi lo roca she-yexatetu la, ba-xayim shel-a.*  
 she not want.PRS.F that-poke.FUT.3PL to.her, in.the-life of-her.  
 'She doesn't want people to rummage around in **her life**.'

(Voice of Israel, Jan. 29, 2011).

The clash between the speaker's wish to add a participant with the competing constraints on IU length and verb-complement adjacency can be resolved by a compromise, a length restriction placed on the added dative. Pronouns are indeed short nominals.

- (b) While extending the predication clashes with constraints on IUs, the speaker's wish to add a specifically subjective aspect to the predication clashes only with the broad principle of expressivity, which calls for allowing any relevant referent to be expressed. While this could in principle demand a full noun phrase, the expression of a subjective point of view is often linked to the speaker, hearer, or other salient human. Because these are highly accessible entities for the most part, they are naturally encoded by pronouns (Ariel, 1990, 2001).
- (c) Next, the speaker's goal is to profile the added entity as centrally involved in the predication. This calls for treating the inserted nominal as structurally integral to the clause, which motivates treating it as an argument. Oblique roles, which typically express peripheral participants, are therefore dispreferred. But this goal is countered by a competing normative force of grammar preservation: syntactic arguments cannot simply be added at will (motivating retention of the original argument structure). Resolving the competition, a compromise can be struck such that the dative can function as a conceptual, if not as a syntactic argument. At this point we encounter another potential competing force, the constraints of Preferred Argument Structure, which specify that a clause may contain no more than one lexical argument (see §2.2 for details). A compromise resolution may dictate that the added dative be expressed pronominally, based on its status as given information (as is often true of highly topical humans). Once again, it is pronouns, but not lexical nominals, that fit the bill.
- (d) Finally, it is the speaker's goal to profile the added participant as (subjectively) affected by the predication. This motivates placing the dative in the position that typically marks affectees, the (immediate) post-verb position, normally reserved for direct objects. This of course clashes with the competing force which calls for keeping direct objects in this position. Once again, a short form should be preferred, because it minimizes the disruption between the verb and the original direct object (should there be one).

Taken together, the four resolutions identified for these competing motivations point in a consistent direction: The added dative should preferably be encoded as a pronoun. This is why we claim that when speakers attempt to verbalize a higher semantic and syntactic complexity of event participants, pronouns are more easily added in argument roles than lexical NPs. Thus, a convergence of partly independent factors, all having to do with the nature of pronouns, enables speakers to insert certain nonargument nominals into positions normally reserved for complements. This is the first step, at the level of utterance production in discourse, leading to argument status. The next step in the grammaticization process will be taken up in §2.3, but first it is necessary to introduce some relevant theoretical background.

## 2.2 Preferred Argument Structure, constructions, and complexity

This section outlines the general implications of Preferred Argument Structure (PAS) for the functional motivation and grammaticization of argument structure constructions. We introduce some recent theoretical developments linking PAS to information structure, construction grammar, and complexity-building. Together these will provide a rationale for the special role of pronouns in the emergence of dative constructions in Hebrew (§2.3).

Preferred Argument Structure (Du Bois, 1987, Du Bois et al., 2003b) represents a general constraint on information structure, setting specific limits on the distribution of information in the clause. In its original formulation PAS was framed as a set of soft constraints limiting the Quantity and Role of lexical NPs and New referents within the core arguments of the clause. The Quantity constraint limits the clause to no more than one lexical argument (and, by the same token, no more than one New or low-accessible argument). For the one allowable lexical (or New) argument, the Role constraint specifies where in the clause it may appear. Lexical arguments are avoided in the transitive subject (A) role, while they may occur freely in the transitive object (O) and intransitive subject (S) roles. (They also occur freely in non-argument roles, i.e. adjuncts or Obliques, (Du Bois, 1987: 832–833).) Over the last two decades PAS has been successfully documented for numerous languages (2003a, Du Bois et al., 2003b). While not without controversy (Everett, 2009), the preponderance of cross-linguistic evidence suggests that PAS is a discourse universal.

With the advent of Construction Grammar, and especially of Goldberg's theory of argument structure constructions (Goldberg, 1995, 2004), the opportunity arises to reexamine PAS in a new light. Construction Grammar offers the flexibility and analytical subtlety to view grammar as a repertoire of constructions, each offering to the language user a distinctive combination of structural and functional resources (morphosyntax, prosody, semantics, pragmatics) for the implementation of communicative function. On one level, PAS seems to be "about" the syntactic roles A, S, and O. But viewed from a different angle, it can be reframed as a statement about constraints on argument structure constructions.

Following this line of thinking leads to a new, revised version of PAS called Constructional Preferred Argument Structure (cPAS). In cPAS, the Quantity and Role constraints take on clearly distinct roles. Quantity imposes a soft constraint on the amount of new information in argument positions of the clause core. Quantity is now recognized as taking precedence over Role, reflecting the fact that it is motivated at a more fundamental level, and is thus predicted to apply globally across all clause types. The presumed functional motivation is a general one: to avoid overloading limited cognitive resources during the processing of arguments

in a clause. Thus Quantity plays a dominant role in limiting the possible information structure of any construction. In cPAS, this is captured by placing Quantity at the apex of the constructional hierarchy, where it forms part of an information structure template that is inherited by all lower argument structure constructions. In contrast, the Role constraint is now seen as secondary, representing a local adaptive response to the more fundamental Quantity constraint. Indeed there is not just one Role constraint, but a family. Each argument structure construction (transitive, intransitive, ditransitive) has its own Role variant, representing a specific adaptation to that construction's functional niche. For any given construction, Role serves to specify which argument slot in the clause allows full lexical arguments, while the remaining argument slots are limited to reduced forms (pronouns, cross-referencing, agreement, or zero).

In cPAS, two kinds of argument slots are distinguished, based on their distinct contributions to the information structure of the clause. From a cognitive point of view, a *platform* is a structural position that provides interlocutors with the full scope of cognitive resources needed to carry out complex expressive tasks. This allows maximal freedom of verbalization, such as may be required, for example, when referring to a New or low-accessible referent. From a structural point of view, a platform allows interlocutors to use a diverse array of grammatical options, such as full lexical noun phrases. In contrast, a *pocket* provides limited cognitive resources, and offers few grammatical options. In cognitive terms, a pocket is a structural position that is adequate for minimally demanding information-processing tasks, reducing the need for cognitive resources. Linguistically, a pocket slot tends to be restricted to a small set of alternatives, such as a pronoun paradigm. Though restricted in capacity, the options available in the pocket slot are nevertheless sufficient to allow interlocutors to refer to highly accessible entities such as continuing topics — a frequent task. Thus pockets and platforms each offer different but valuable affordances for managing information.

In cPAS, each argument slot in a construction must be specified as either a pocket or a platform. While the Quantity constraint ensures that only one argument will be designated as platform, it is left to the Role constraint to determine which argument this will be. Specified on a construction-by-construction basis, the local adaptivity of the Role constraint allows it to optimize the distribution of pockets and platforms per construction, allocating cognitive resources where they are most needed, while conserving resources in contexts where processing costs are predicted to be low. According to Du Bois (2008), this motivates a Cognitive Containment Strategy, which assigns pockets and platforms based on predictions about which argument slots frequently require maximizing available cognitive-attentional resources, and which need only minimal resources. Based on the typical discourse profiles for A, S, and O, the cross-linguistic findings of PAS suggest that

for constructions with a single argument, the S is motivated as a platform, while for two-argument constructions, the A is motivated as a pocket and the O as a platform. The cPAS constraints entail that expanding the complexity of the clause from two arguments to three is possible only if a second pocket argument can be assigned in the clause. Based on a study of ditransitive constructions in English, Du Bois argued that the challenge is met by a Cognitive Containment Strategy which assigns pocket status to the Agent (A) and Recipient (R) argument slots, and platform status to the Theme (T) slot. For Hebrew, we predict that a similar discourse profile motivates the grammaticization of dative constructions with pocket status assigned to the Affectee (whose discourse profile is most Recipient-like) and platform status reserved for the (Patient-like) Theme.

The introduction of a dynamic interaction between Quantity and Role in cPAS means that information structure is variable not only on a construction-by-construction basis, but also diachronically. By effectively exploiting the Cognitive Containment Strategy, speakers can add a pocket to an existing construction, converting a transitive construction into a ditransitive or dative construction. While Quantity precludes adding a second platform to an argument structure construction, under special circumstances the platform can shift from one argument slot to another within the construction. Both pocket addition and platform shift depend on the presence of a viable discourse profile, with the appropriate distribution of pronouns (“pocketables”) and full lexical nouns (“platformables”) in the clause.

### 2.3 Grammar-time process: The role of Preferred Argument Structure in dative arguments

How do nonarguments acquire grammatical status such that they eventually count as semantic and possibly syntactic arguments? We assume that grammaticization is preceded by a period where a salient discourse profile has gradually emerged. In this discourse pattern, the dative doesn't just contribute an additional participant; rather, that participant is semantically integrated into the event structure as an affectee of some kind, rendering it a more complex event structure. Speakers routinely represent to themselves such recurrent discourse patterns, based on stored representations of actual utterances (e.g. Bod, 2006). But while we believe that the original interpretation of all the Hebrew dative constructions is of an added human affectee, current datives, as we have seen, are not restricted to this interpretation.<sup>11</sup> Some datives have undergone further semanticization processes, ac-

11. Note that by “original” and “new” we do not intend to claim that Biblical Hebrew, for instance, only had the original interpretation while Modern Hebrew only has the new ones. The original source may well predate Hebrew.



quiring new functions (e.g. possessor, recipient). We assume that the presence of a non-governed dative in certain distinct configurations created further discourse patterns where more specific interpretations were consistently assigned to the dative. We assume that such processes contributed to the evolution of the variety of dative constructions in Hebrew. We cannot here account for how each dative construction branched off diachronically from the super-construction (but see Givón 2013). What we are interested in is to show the crucial role of a synchronic pattern of pronominal datives in paving the way for the grammaticization of datives into arguments within specific constructions. Indeed, Dixon (2006) notes that it is typically datives that extend both intransitive and transitive clauses into two- and three-argument structures, respectively.

Why are some word sequences more easily identified as part of a salient discourse pattern? The more repetitive these sequences are, the more likely they are to stand out. This is where the small size of the pronominal paradigm again plays a crucial role. There is evidence that humans are sensitive to the frequency of multi-word phrases (Arnon & Snider, 2010, Arnon & Clark, 2011). Holistic chunks of linguistic expressions have been implicated in many processes of grammaticization (Bybee, 2005). It also stands to reason that just as the IU is functional for online cognitive processing (Chafe, 1979, 1994), it is also relevant for storing utterance chunks in memory (Croft, 1995). Indeed, a recent study found that two-word sequences (bigrams) which are strongly associated with each other tend to occur within a single IU, rather than across two IUs (Wahl, 2012). IUs are then conducive to noticeable collocations. As was emphasized above, the added dative pronominal tends to fit within the IU containing the verb, thus facilitating a collocational association of the dative with certain verbs where the specific constructional meaning arises. Moreover, if it is predominantly pronouns, rather than lexical NPs of just any size or shape that are added on, then it is perceptually more salient to interlocutors that a specialized construction is shaping up here. This is so because restriction to a small number of variant forms facilitates the memorization, storage, and abstraction of a new construction — in our case, a construction whereby a dative pronoun, in verb-adjacent position, is interpreted as somehow affected by the predication. If discourse patterns evolve through the use and memorization of actual tokens, the repetitive use of dative pronominals will stand out more clearly than if lexical NPs, with their very rich variability, are the novel added noun phrases. This is how many Hebrew dative constructions came into being, we hypothesize, with pronouns pioneering the new argument structure.

But there is one more condition that constructions must meet in order to grammaticize. The cPAS constraints on the distribution of lexical arguments in argument structure constructions mean that to expand complexity from two arguments to three, it is necessary to adopt a viable Cognitive Containment Strategy.

Pronouns play an important role in realizing such a strategy by allowing interlocutors to introduce a low-cost pocket slot as the third argument (if the discourse profile is right). The fact that the Role constraint (which assigns pockets and platforms) is locally adaptive at the level of the individual construction helps to account for structural innovations in the grammaticization of more complex, specialized constructions, such as those considered here.

Note that in practically all the Hebrew dative constructions the dative is added onto an argument structure which is viable even without the dative. Even where it is currently obligatory (i.e. some Governed, Predicative Possessor, and Transfer ‘give’ datives), the dative can be seen as standing for an entity added to a construction that was previously acceptable without a dative. Blake (1994) treats the Greek and Latin counterparts of ‘help’, ‘obey’, ‘trust’, and ‘be angry with’, all taking dative complements, as intransitive verbs, and in fact, we can find intransitive uses of governed dative verbs in Hebrew to this day (see (15)). The Predicative Possessor dative (*yesh le-NP<sub>possessor</sub> NP<sub>possessum</sub>* ‘there is to the possessor a possessum’) builds on an existential construction (*yesh NP* ‘there is NP’),<sup>12</sup> and it can be argued that the three-argument Hebrew *natan* ‘give’ evolved out of a transitive ‘put’ verb, where the dative gradually became mandatory (Du Bois & Ariel, 2014). Be that as it may, all of the constructions have in common that the dative typically denotes an additional human, involved in the event to various degrees, but never as an initiator and hardly ever as a prototypical endpoint (an affected patient).<sup>13</sup>

Naturally, each source construction comes with its own designated platform argument role. But platform assignment may shift once a new argument is incorporated. Table 2 summarizes the processes of competing motivations and their resolutions, reflecting our predictions regarding how grammaticized datives should meet the cPAS constraints following grammaticization.

12. Indeed, one can find other adjuncts used with the existential *yesh* ‘there is’ construction in the Bible, such as *be-elohim* ‘in God’ (*Chronicles* II 25:8), *itanu* ‘with us’ (Genesis 44:26).

13. Haspelmath (2003) argues against positing a general meaning applicable to all datives, because there is in fact no single meaning which is true of all datives in all languages. Haspelmath then proposes a semantic map of meanings, which are associated by family resemblance. This typologically valid claim, however, is not incompatible with our attempt to show that all the Hebrew dative constructions involve an added human which is a nonmanipulating/nonmanipulated participant. (Very rarely the dative entity is manipulated, e.g. *hirbic* ‘hit’, but as is typical for human affectees, they are not totally affected, as inanimates often are.) At the same time, we agree with Haspelmath that we cannot be satisfied with simply attributing a general overarching function to the Hebrew dative. Whenever some cognitive concept is at work in natural language, its effect is mediated by the specific linguistic realization(s) it receives in the language. Indeed, the constructions examined here exemplify such effects.

**Table 2.** The grammaticization process: Adding a dative as argument

Salient discourse pattern	Conflicting force	Resolution
a. The dative is predominantly pronominal.	By structural analogy, lexical NPs have the “right” to occur in any NP slot.	Lexical datives gradually rise in frequency to the typical upper limit of PAS findings (around 10% of pockets are lexical).
b. Datives with <i>give</i> & Predicate Possessive are predominantly Given.	By structural analogy, lexical NPs have the “right” to occur in any NP slot.	Lexical datives gradually rise in frequency to the typical upper limit of PAS findings (around 10% of pockets are lexical).
c. S <sup>14</sup> is often topical, Given; the dative tends to be Given.	Governed datives are Direct Object-like, hence potentially New.	Every construction can (re-) define its own Role constraint. Hence, platform shift yields A=pocket, Dative=platform.

The relation between competing forces summarized in Table 2 can be explicated as follows:

- a. We identify a salient discourse pattern in which datives are consistently pronominal (especially at the beginning of the grammaticization process). But if the dative allowed only pronouns, this would clash with the syntactic generalization of what a noun phrase represents: qua NP, it should allow a lexical nominal in any slot where a pronoun is allowed. The resolution reflects the fact that cPAS is a matter of soft constraints. In a pocket role, lexical nouns are generally avoided, but are not strictly ruled out (i.e. not ungrammatical). The result is a discourse profile which has been observed in numerous studies of PAS (see Du Bois et al., 2003b), in which a pocket role (e.g. A, R, or dative) admits a limited proportion of lexical NPs, up to about 10% of mentions). Thus the argument structure expansion that begins with pronouns is extended, at least occasionally, to encompass full NPs.
- b. Similarly, this is what we predict for e.g., the datives for the Hebrew ‘give’ and for Predicative Possession cases. The inherited cPAS configuration (A role as pocket) remains in place, for the information structure of the relevant arguments is compatible with the original platform assignment (Theme as platform). The Themes in these evolved constructions remain potentially new, motivating the assignment of a platform role, whereas the dative arguments tend to stand for Given information, hence motivating a pocket role. Again,

14. Note that S’s are ripe for reanalysis as pockets because they are perfectly amenable to pronouns: While S and O both freely admit full lexical noun phrases, S is distinct from O in that it often exhibits a high proportion of pronouns as well.

via soft constraints and the structural analogy of the category NP, the newly grammaticized argument role (the dative) comes to accommodate a small proportion of lexical NPs.

- c. Where we predict a structural change in the locally defined Role constraint is for Governed datives. Given that these begin as intransitives, the subject is an S role, which by the cPAS inheritance hierarchy is specified as a platform. The newly added dative begins as pronominal, thus eligible for pocket status. However, on the one hand, S's are highly compatible with pronouns (the platform slot can, but crucially does not have to, accommodate New entities). On the other hand, since the governed datives function very much like endpoints/patients, they are at least sometimes New. We suggest that governed datives may undergo a platform shift, in which the cPAS Role constraint responds adaptively to the shifting discourse profile by reassigning the platform role to the dative, and making the subject (S) a pocket. We then predict a gradual weakening of the limits on lexical datives for Governed datives, reflecting the emerging platform status.

Having outlined our predictions as a guide to the direction we will pursue in this paper, we turn now to arguments for establishing a scale of the depth of grammaticization of the dative as an argument. For each of the seven dative constructions examined here, we provide tests based on syntactic, semantic, and/or pragmatic behavior. These tests support the placement of each dative role along what we call the Argument Grammaticization Scale, that is, a scale of depth of grammaticization as an argument. Once we establish the degree of argument status for the various datives on independent grounds (§3) we will be in a position to argue for a correlation between this gradation and the discourse profile of pronominal/lexical datives (§4).

### 3. Empirical support (I): Grammaticization depth of different datives

As noted earlier, a key objective of this paper is to show that one major pathway for the grammaticization of new arguments relies, especially in its initial phases, on the introduction of dative-marked pronominals. The Cognitive Containment Strategy requires that the encoding of the dative “newcomer” should be of a pocketable size, in other words, a pronoun. However, the more entrenched a construction becomes, the less strictly the cognitive constraint is imposed, because of the competing force of syntactic analogy which allows a structural slot interpretable as an NP to accommodate lexical NPs. In order to show a correlation between depth of grammaticization into an argument and occurrence of pronominal versus lexical

datives, we first need to argue for a scale of argumenthood for the various datives in the constructions under discussion. This is the goal of this section. We motivate such a scale here, based on criteria for the argument/adjunct distinction culled from the literature. The most entrenched datives are ones which are both syntactic complements and semantic arguments. Note that a construction's age or frequency (see §5) is not necessarily indicative of the degree to which its dative has acquired argument status. It may indeed be the case that the Ethical Dative has evolved out of the Reflexive-Benefactive (Givón, 2013), despite the fact that the former is less grammaticized. This is why our classification is based on behavioral patterns of the various constructions. We will suggest the following Argument Grammaticization Scale for the seven dative constructions.<sup>15</sup> (In this paper we treat Benefactive datives as representative of the broader category of Affectee Datives.)

**The Argument Grammaticization Scale<sup>16</sup>**

Coref < Ethic < Benefac < Poss < Transfer < Pred Poss < Gov



Least grammaticized

Most grammaticized

As we shall see, although they are not all independent of each other, the various adjunct/argument tests do not all converge on a single cut-off point between purely adjunct datives on the one hand and purely argument datives on the other. But crucially, for the most part, each criterion splits up the scale into two or more sections of the nonargument-to-argument continuum, each comprising only contiguous members on the proposed scale. Taken together, the criteria suggest that we have a continuum of grammaticization depth for the various datives. We should emphasize, however, that what we are looking for are signs of grammaticization *into an argument*. Coreferential datives, most likely the oldest of the Hebrew dative constructions (Berman, 1982), are certainly grammaticized, but, as we shall see, the nature of their grammaticization is not in the direction of an argument. While they do modify the event described, they do not do it by adding another event participant.

15. Borer & Grodzinsky (1986) address three of the dative constructions: Coreferential, Ethical, and External Possession datives. According to their analysis, the first two are not arguments, but the latter is a full-fledged argument, despite the fact that it is not subcategorized for by the verb. We opt for a more fine-tuned gradation of argumenthood as a continuous scale.

16. For convenience we introduce the following abbreviations for the dative constructions under investigation: Coreferential datives=Coref; Ethical datives=Ethic; Benefactive datives=Benefac; External Possession datives=Poss; Predicative Possessive datives=Pred Poss; Three-Argument 'give' datives=Transfer; Governed Datives=Gov. The sign < means the term to the left is less grammaticized (as an argument) with respect to the specific criterion. A slash (/) means no behavioral difference with respect to the specific criterion.

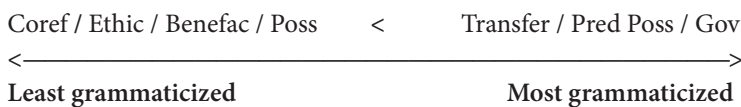
We start with syntactic criteria for argument status (§3.1), followed by discourse prominence criteria (§3.2), and semantic criteria (§3.3).

### 3.1 Syntactic criteria

In establishing the Argument Grammaticization Scale for the dative in the various constructions we consider three syntactic criteria: obligatoriness (§3.1.1), reflexivization (§3.1.2), and *do so* anaphora (§3.1.3). Syntactic arguments are expected to be obligatory, to trigger reflexivization, and to fall under the scope of *do so* anaphora.

#### 3.1.1 *Obligatoriness*

The most basic argument/adjunct distinction classifies as syntactic arguments phrases that are obligatorily selected for by the predicate. In contrast, adjuncts are only optionally added. Based on this criterion, Governed datives, Predicative Possessive datives, and Transfer ‘give’ datives are all arguments, whereas all the other datives are adjuncts (Al-Zahre & Boneh, 2010). The Obligatoriness test thus defines the following Argument Grammaticization Scale:



Note that if an obligatory dative is missing, the sentence is ungrammatical. Alternatively, it has a different meaning. (This is the case for Predicative Possessive datives, the removal of which does not create ungrammaticality, because a different, existential construction results). The flip side of this phenomenon is that since the would-be dative marked entities are implied by the predicate, sentences lacking them may be grammatical after all in the right context, but only if those missing entities are taken to be generic entities. This is true for Governed and Transfer datives, but not for the rest:

(15) a. **Governed Dative**<sup>17</sup>

*adonai tamid ozer*                      0                      *kshe-hu*

God always help.PRS.SG.M (people) when-he

*roe she-menasim ve-mashkiim*

see.PRS.3SG.M that-try.PRS.PL.M and-invest.PRS.PL.M

‘God always helps when he sees that one makes an effort and invests.’

([www.stips.co.il/singleask.asp?stipid=283397](http://www.stips.co.il/singleask.asp?stipid=283397))

17. Note that unlike English, Hebrew *azar* ‘help’ is a Governed dative verb.

b. **Transfer Dative**

*ani meunyan la-daat im hu noten*

I interested.M to-know whether he give.PRS.3SG.M

*matan-ot 0*

present-PL (to people)

‘I would like to know if he gives presents.’

([www.harrypotternet.co.il/interviews\\_Rowling.htm](http://www.harrypotternet.co.il/interviews_Rowling.htm))

Naturally, this is not the case when the phrases are not obligatory. We exemplify it here with an External Possession Dative example, where the missing dative ‘to children’ cannot be retrieved:

 (16) **External Possession Dative**<sup>18</sup>

*~??noflot ha-shina-im 0 be-gil shesh*

fall.PRS.PL.F the-tooth-PL (to.children) at-age six

‘Teeth fall off (??to children) at age six.’

The same is true for the rest of the constructions.

It may be objected that the three obligatory-dative constructions should have been excluded from our study, because they are fully grammaticized as arguments. But this would be valid only if the argument-adjunct distinction was a dichotomy. Our point is that argumenthood is a matter of degree. Indeed, the differential results of many of the tests below show that we cannot rely on syntactic selection by the predicate as the single criterion for grammatical argument status. Governed, Predicate Possessive, and Transfer datives are not always uniformly classified by the criteria below. They too exhibit a graded depth of grammaticization.

### 3.1.2 *Reflexive relations*

Reinhart & Reuland’s (1993) reformulation of the binding conditions, specifically, the generalization concerning the use of reflexive pronouns, offers in effect a criterion for syntactic co-arguments. Antecedents and their coreferent anaphors must be co-arguments, which means that both are syntactic arguments. If so, we can examine whether the dative NP participates in a reflexive relation, whether as antecedent or as anaphor. As we see below, this criterion does not create a dichotomy between arguments and nonarguments, but rather a continuum, whereby some datives necessarily participate in a reflexive relation, others necessarily do not participate in such relations, and yet others can go either way. For Reinhart & Reuland the latter category would point to adjunct status, but we take the fact that some adjuncts can take reflexive pronouns, while others cannot, as evidence for the gradience of grammaticization from adjuncts to arguments.

18. ~ indicates an invented example.

Here are the distributional facts. Governed datives that are coreferent with the subject are obligatorily reflexivized. A regular pronoun cannot substitute for the reflexive pronoun in (17):

(17) **Governed Verbs**

*ha-im yahadut eropa azra le-acma?*

Question.particle Jewry (of) Europe help.PST.3SG.F to-itself?

‘Did European Jewry help itself?’ ([www.news1.co.il/showTalkBack.aspx?docId](http://www.news1.co.il/showTalkBack.aspx?docId))

In Predicative Possession constructions, the dative, which is the more topical of the two arguments, functions as the antecedent for a reflexive pronoun in the direct object position:

(18) **Predicative Possession**

*amir benayun lo zakuk le-xaver-im. yesh lo et acmo.*

Amir Benayoun not need.M to-friend-PL. there.is to.him ACC himself

([www.10gag.co.il/gag/29258](http://www.10gag.co.il/gag/29258)).

‘Amir Benayoun doesn’t need friends. He has himself.’

Transfer and External Possession datives are also reflexivized in:

(19) a. **Transfer Dative**

*ha-bitelz be-aitunz: ha-matana she-jobz natan le-acmo.*

the-Beatles on-iTunes: the-gift that-Jobs give.PST.3SG.M to-himself

‘The Beatles on iTunes: The gift that Jobs gave himself.’

([www.ispot.co.il/?p=891](http://www.ispot.co.il/?p=891))

b. **External Possession**

*hi shavra le-acma et ha-yad.*

she break.PST.3SG.F to-herself ACC the-hand

‘She broke her hand.’ ([news.walla.co.il/?w=/90/1510076/@@/talkbacks](http://news.walla.co.il/?w=/90/1510076/@@/talkbacks))

But, unlike Governed datives, where a reflexive form is obligatory for all persons, Predicative Possessives, ‘give’ and External Possessive datives do not make reflexive pronouns obligatory for first and second persons:

(20) a. *tamid yesh li oti.*

always there.is to.me me.

‘I always have me.’ ([www.4girls.co.il/newsite/article.asp?catID=105](http://www.4girls.co.il/newsite/article.asp?catID=105))

b. *natati li raayon le-hagdara.*

give.PST.1SG to.me idea for-definition

‘I gave myself an idea for a definition.’

([demo.ort.org.il/ortforums/.../forum\\_msg.asp?pc](http://demo.ort.org.il/ortforums/.../forum_msg.asp?pc))

c. *etmol shavarti li ta-pelefon.*

yesterday break.PST.1SG to.me ACC.the-cell.phone



‘Yesterday I broke my cell phone.’

([www.fxp.co.il/showthread.php?t=3676660](http://www.fxp.co.il/showthread.php?t=3676660))

Benefactive datives can rather freely be either reflexive or regular pronouns (3rd persons included):

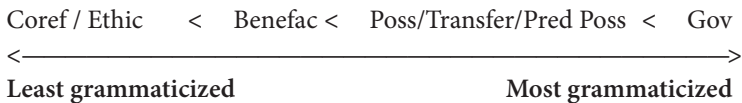
- (21) a. *hu kana lo olar xad.*  
 he buy.PST.3SG.M to.him pocket.knife sharp.M  
 ‘He bought himself a sharp pocket knife.’

([www.tidhar.tourolib.org/tidhar/view/2/616](http://www.tidhar.tourolib.org/tidhar/view/2/616))

- b. *hu kana le-acmo mexonit dey yeshana.*  
 he buy.PST.3SG.M to-himself car rather old.F  
 ‘He bought himself a rather old car.’ (www.the-secret.co.il)

Ethical and Coreferential datives cannot be reflexivized at all: We cannot replace the regular dative pronouns with reflexive ones in (8) and (9) above.

So, a reflexive pronoun must be used for all persons with the Governed Datives. It is obligatory for 3rd person Predicative Possession, Transfer, and External Possession Datives, but either a reflexive or a regular pronoun can be used for 1st and 2nd persons. This person split is quite compatible with the well-known fact that historically reflexive pronouns first grammaticize for 3rd persons and only later for 1st and 2nd persons (Keenan, 2003). Next, the dative can be either a reflexive or a regular pronoun for Benefactive datives (all three persons). Finally, a reflexive pronoun is banned for Ethical and Coreferential dative coreference. The Reflexivization criterion thus divides up the Argument Grammaticization Scale four ways, as follows:



Such a scale of argumenthood justifies our claim that the grammaticization of Hebrew datives into arguments is not an “all or none” phenomenon. The following sections corroborate this point.

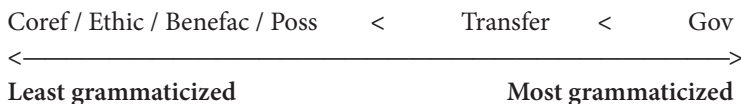
### 3.1.3 Do so *anaphora*

Huddleston (2002) offers the *do so* anaphora test for determining whether some phrase is an adjunct or a complement. Unlike complements, adjuncts do not fall under the scope of a *do so* anaphora, and can therefore co-occur with the *do so* phrase. Indeed, while *do so* cannot combine with the complement *in the road* in (31a), it can combine with it in (31b), where it is an adjunct:

- (30) a. \**Jill keeps her car in the garage but Pam does so in the road.*

- b. *Jill washes her car in the garage but Pam does so in the road*  
(Huddleston 2002: 223, ex. 19).

We apply this diagnostic to Hebrew in Appendix B; for convenience, we summarize the bottom line here. For Hebrew the *do so* test defines the following Argument Grammaticization Scale:



### 3.2 The prominence of the dative-marked entity

We turn now to an examination of how prominent the dative-marked entity is, considering how central it is to the event (§3.2.1) and how referential it is (§3.2.2). The prediction is that the more grammaticized the dative is as an argument in the construction, the more prominent and the more referential the entity it stands for.

#### 3.2.1 Centrality and paraphrasability

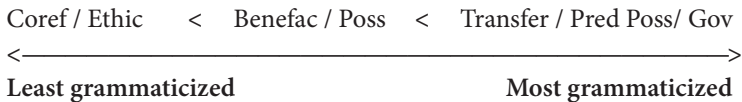
Consider the following examples from English, each of which contains an adjunct *for me*:

- (22) a. BEN: *Wait for me on the blue couches on the balcony please.* (SBC: 038)  
 b. *I asked him to wait for him for me so I could try to take a little nap.*  
 (livingono2forlife.bravejournal.com)  
 c. OFFICER: *Could you wait right there, for me?* (Nov. 18, 2012).

*Wait* is an intransitive verb, which takes a *for* adjunct in roughly 11.5% of its occurrences (12/103 in SBC). While an adjunct in all three examples, the ‘me’ entity plays a more central role in (22a) than in (b), and more so in (b) than in (c). The event denoted by (a) is ‘waiting for me’, where the arrival on the scene of the ‘me’ entity will mark the end the event. The event denoted by (b) is ‘wait for him’, which is quite independent of the ‘me’ entity, although its goal is to benefit ‘me’. Finally, the ‘me’ in (c) is the least objectively involved. The speaker in (c) is a security person checking people’s IDs at the San Francisco airport, and her goal was for the addressees to wait their turn behind a certain line. Note that unlike in (a), the addressees are not at all waiting for the speaker, but rather for the people in front of them to be cleared. And unlike in (b), the speaker in (c) will not really benefit from the addressee’s waiting. While it is difficult to pinpoint the function of such external *for me* occurrences, the official’s “polite benefactive” *for* PPs seems to be motivated by sociolinguistic factors, rather than by objective considerations. Most

likely the speaker is trying to soften her directive, presenting it as if it were a favor to her.

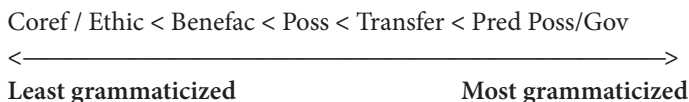
The point of the examples in (22) is to show that the same adjunct co-occurring with the same verb may be more and may be less inherent to the event depicted by the verb. Both Coreferential and Ethical datives do not stand for event participants. They do not profile a participant role in the event itself. Benefactive and External Possessor datives are peripheral participants with respect to the causal chain of the event (Croft, 2012). The Benefactive specifies who the action (independently performed) is performed for and the External Possessor specifies who the object affected by the event belongs to (and is therefore somehow indirectly affected by the event).<sup>19</sup> Transfer, Predicative Possessive, and Governed datives all encode core participants which define the very nature of the event. The feature “Event Centrality” thus defines the following Argument Grammaticization Scale:



Note that the paraphrasing options for the three *for me* occurrences in (22) are quite different. The governed (a) case cannot easily be paraphrased by some other formulation (cf. *await my arrival*), but (b) can be naturally paraphrased by another adjunct, such as *for my sake* or *instead of me*. The (c) case would require a separate, additional metalinguistic predication. We argue that we can learn about how central the various dative-marked entities are to the event by examining alternative paraphrases that can express those entities. Verbal arguments constitute the clause core. Next come complements of verbal arguments, and then adjuncts. Other participant roles cannot even be expressed as adjuncts and require an additional, separate predication. Naturally, these are the most peripheral. Different languages draw the line at different cut-off points. For example, languages that do not have three-argument verbs may require a separate predicate for such additional participants (Margetts & Austin, 2007). The more compact the packaging of a participant, the more inherent to the event we consider it to be. We can therefore look at alternative (paraphrastic) ways to express the dative-marked entities in Hebrew as an indicator of how inherent the entity is to the predication, so we can offer a scale of core versus peripheral event role participation. We here summarize the results of the Paraphrasability test, which motivates the following Argument

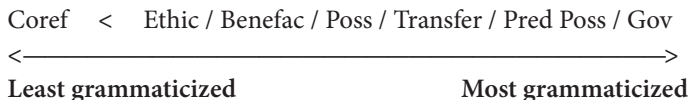
19. In other words, the event is complete even without the dative participant. For example in Benefactive *She ran to the supermarket for me* there is a well-defined event with a full causal chain, even in the absence of the benefactor (although the fact that the running to the supermarket was for the benefactor may have affected the activity, what she bought there, for example).

Grammaticization Scale; see Appendix C for details regarding the application of this test to Hebrew datives:



### 3.2.2 Referentiality

Referential NPs encode discourse-trackable entities, and manifest a different behavior from nonreferential NPs (Du Bois, 2010). For example, they can be conjoined with another NP, and they can receive focal accent. The datives concerned here start out as referential NPs, so we expect them to remain referential en route to becoming full-fledged arguments. But this is not invariably so. The reader is referred to Appendix D for results of the Referentiality test, which motivate the following Argument Grammaticization Scale:



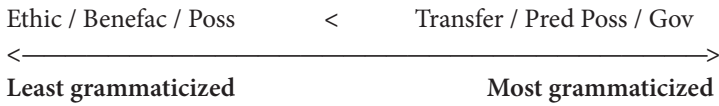
## 3.3 Semantic tests

Grammaticization is often accompanied by semantic change which may or may not include preservation of the original function as well (Hopper & Traugott, 1993/2003). The further the meaning of a dative construction is from the original meaning of the dative, and the more it contributes truth-conditional aspects to the proposition expressed, the more grammaticized we consider the dative to be. We recognize four aspects of meaning that have distinguishable effects on grammaticization. These are whether the original ‘added affectee’ meaning has survived or was bleached (§3.3.1), whether the dative has acquired a new constructional meaning instead of or in addition to the original meaning (§3.3.2), how subjective the dative interpretation is in the various constructions (§3.3.3), and whether the dative constructional meaning(s) contribute to the truth-conditional content of the proposition (§3.3.4). As we see below, the semantic parameters considered here confirm our Argument Grammaticization Scale.

### 3.3.1 Functional conservation

We assume that the original meaning at the basis of all the dative constructions is that of a participant added to an otherwise coherent event. Despite the fact that it is added on as an extra participant, the original motivation was to profile this participant as somehow affected by the event (although typically not as manipulated

by an agent). We can therefore determine the degree of emergence of a new dative construction by assessing whether this meaning is still conserved. Details of the evidence for the Functional Conservation test are given in Appendix E. This test motivates the following Argument Grammaticalization Scale:



### 3.3.2 Innovative meanings

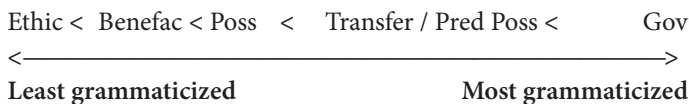
Expressions frequently used together often gradually come to influence each other semantically (Sinclair, 1991) so that their meanings are modified. In fact, this is why the most grammaticized dative construction, that of Governed datives, could not and did not gain any new unified meaning as a category. Since the large variety of participant roles for the Governed depends on the specific verb, the original semantic generalization of the dative had to be abandoned. The set of new meanings that evolved was too heterogeneous for these meanings to converge on any uniform constructional semantics, with verbs such as *xika* ‘wait’, *hirbic* ‘hit’, and *azar* ‘help’ pulling in multiple incompatible directions. The Governed dative is therefore very much like grammatical subjects and objects. It is so semantically “promiscuous” in its combinatory diversity that no specific semantic function can be attributed to it. Although it is still predominantly associated with affected humans, this is more of a residue generalization, rather than an active online interpretation. This is in clear contrast with adjuncts, which tend to have relatively faithful and transparent thematic roles associated with them.

Such transparent roles are indeed associated with the next group of dative constructions, the Predicative Possession, Transfer, and External Possessor datives. The frequent co-occurrence of the dative with *yesh* ‘there is’ must have entrenched the dative in this context as a possessor. Similarly, the frequent co-occurrence of the dative with *natan* ‘give’ (originally meaning ‘put’), where transferred ownership was inferred, must have gradually constrained the interpretation of such datives to recipients. Finally, the frequent cases where the effect on the dative-marked participant was mediated by an object belonging to that participant must have paved the way for the semanticization of the dative in such constructions into possessor role.

Both Benefactive and Ethical datives maintain the original affectedness meaning of an added affected participant, but the Affectee dative is more “affected” in that the event was typically intended to affect that participant. This is not true for Ethical datives, where the participants they stand for are absolutely external to the predication, even if they are (subjectively) profiled as unintentionally affected

by it. Finally, the Coreferential dative has acquired a host of aspectual senses (see Appendix E).

All in all, Governed datives are the most grammaticized as arguments because their combination with the verb becomes opaque, so they do not indicate any consistent semantic relation at all. Predicative Possessive and Transfer datives are each associated with a new transparent meaning (Possessor and Recipient respectively). Next, unlike the dative constructions so far, External Possession datives mostly combine the conserved affectedness interpretation with the newly evolved possession meaning. The Affectee dative typically adds an intention to affect the dative-marked participant, and the Ethical dative has not evolved any innovative meaning. If so, the function of Governed datives is the most distant from the original function we attribute to datives in Hebrew, and Ethical datives are the closest to it. As already mentioned, the semantic change associated with Coreferential datives is not relevant here, for while it is certainly quite advanced, it manifests a clear distancing from argument status. Hence, the Argument Grammaticization Scale motivated by Innovative Meanings is:



### 3.3.3 Subjectivity

The original introduction of dative-marked participants must have contributed to a more subjective construal of the event (as witnessed by currently innovative uses, see again (12a), (22c)). Since the original argument structure of the verb did not specify the involvement of the dative-marked participant, its addition marks a subjective construal of the event whereby the added participant is nonetheless affected by it in some way. However, the more grammaticized as an argument some dative is, the less subjective and more objective the construal.

Coreferential, as well as Ethical datives, often express a stance on the event (Al-Zahre & Boneh, 2010, Halevy, 2004). In the Coreferential dative example in (9) the addressee is not just watching movies in the prototypical way that one watches movies. Rather the event is individually customized to the movie watcher here, who is taking his time watching movies. Ethical datives are very clearly subjective in that the dative-marked participant is construed as involved in an event in which s/he is very definitely not participating (see example (8)) by virtue of having some stance on the event (often, a critical stance). At the other end of the scale, Transfer, Predicative Possessive, and Governed datives do not depart from a (putatively) objective construal of the events in terms of a manifest causal chain.

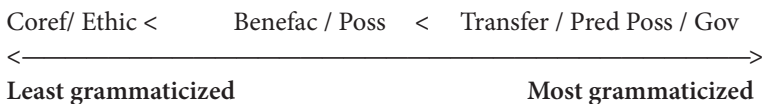
No subjective adjustments are made to the interpretation of the events and no stance is implied.

Affectee and External Possession datives are intermediate on the subjectivity scale. Consider the Benefactive dative in (23a), in comparison it to the dativeless (b):

- (23) a. *ba-herayon ha-sheni shar-ti la kol ha-zman.*  
 in.the-pregnancy the-second sing-PST.1SG to.her all the-time.  
 ‘During the second pregnancy I sang to her (the baby) all the time.’  
[www.kipa.co.il/community/show/7328834](http://www.kipa.co.il/community/show/7328834)
- b. *etmol shar-ti harbe harbe kedey le-shaper et*  
 yesterday sing-PST.1SG a.lot a.lot in.order to-improve ACC  
*ha-kol ba-shira.*  
 the-voice in.the-singing.  
 ‘I sang a lot yesterday in order to improve my singing voice.’  
[www.stips.co.il/singleask.asp?stipid=996270](http://www.stips.co.il/singleask.asp?stipid=996270)

The dative-marked (23a) marks the subjective nature of the singing, as opposed to the objective causal construal of the singing in (b). In (a) the singing is specifically geared towards the unborn baby and is therefore possibly modified especially to serve the specific addressee. The singing in (b) is construed as tailored for its causal consequences for the voice (practice makes perfect). The subjective nature of External Possession datives stems from the fact that a participant that is not objectively affected is profiled as affected, just because some other object that is somehow related to them (usually their possession) is affected. This is why not every affected possession justifies the use of the construction (Linzen, 2009a).

We propose that the Subjectivity test of the dative constructions supports the following Argument Grammaticization Scale:



### 3.3.4 Truth-conditionality

Truth-conditionality is considered a major criterion for distinguishing grammar from pragmatics. Still, not all that is non-truth-conditional is extragrammatical (Ariel, 2010). For example, the content of appositives (Dascal & Katriel, 1977, Potts, 2005) and the contrast interpretation of *but* (Bach, 1999, Grice, 1989) are linguistically encoded, yet are considered irrelevant for the truth conditions of the proposition they are part of (such are Grice’s conventional implicatures). At the same time, (non-)truth-conditionality is not necessarily static. While non-truth-conditional aspects may remain so for a long time, semanticization may very well involve the crossing over of pragmatic inferences into semantic and possibly also

truth-conditional status (Bybee et al., 1994, Traugott & Dasher, 2002). For example, *since* now semantically encodes a reason, such that if the state of affairs it modifies does not provide a reason for the state of affairs in the main clause, the proposition is false. But, historically, this is a case of a non-truth-conditional conversational implicature turned into a truth-conditional semantic meaning (Traugott & König, 1991). The same is true for a verb of desire, such as *will* turning into a future tense marker, starting with an inference that if one wants to do something they intend to do it and they are likely to actually do it. At some point these inferences became propositional and uncancelable (Bybee et al., 1994: §7.3.1.1).

No doubt the same is true for constructional shifts from an initially inferred interpretation to an ultimately semantic function. Constructional semantics is on the move, according to Coleman & De Clerck (2011), who find that the English Double Object construction has in time narrowed its meaning to the one proposed by Goldberg, namely ‘Agent successfully causes recipient to receive patient’ (1995: 38). Attested uses from the 18th and 19th century include *open him the door* and *spoiled me a complete set of... ruffles* (Coleman & De Clerck’s exx. 10a and 11). Note that *kicked me the ball* is necessarily interpreted as ‘transferred the ball to me by kicking’, rather than possibly as ‘kicked the ball for me’ (a benefactive meaning, similar to the one in *opened him the door*). Although Coleman & De Clerck do not describe the change in our terms, one can argue that the evidence shows that the transfer interpretation, one of a few possible inferred interpretations in the past, has semanticized to the point that it determines the propositional content of the utterance, and hence affects the truth value of the proposition expressed. Thus, if the situation is that the ball was kicked for me (say, instead of by me), and not to me as recipient, the sentence expresses a falsehood.

If so, another criterion to measure depth of grammaticization is to check whether the interpretations associated with the various dative constructions are “deeply” semanticized, such that they are truth-conditional and not just conversationally or even conventionally implicated. Now, truth-conditionally relevant aspects of meaning are uncancelable, that is, they cannot be denied by the same speaker without causing a contradiction. We can then check the cancelability of the meanings associated with the various dative constructions. As we see below, we can identify a gradation whereby ungrammaticalized meanings are cancelable so that an incompatibility between the interpretation and reality causes neither anomaly nor falsehood. For early grammaticization phases we expect discrepancies with reality to cause anomaly but not falsehood, because the interpretation is most likely not truth-conditional. And even if it is truth-conditional, since it is not a primary interpretation, it has no effect on truth judgments. Finally, a complete semanticization entails a judgment of falsity if reality is incompatible with the innovative interpretation. In this vein, Horn (2008) proposes a conventional



implicature status for English nonargument datives, which is why they do not make a truth-conditional contribution.

In order to assess the nature of the contribution of each of the dative constructions under discussion, we must distinguish between the contribution of the presence versus absence of the dative-marked entity in the discourse world, on the one hand, and the extra interpretations we have mentioned above (Recipient, Affectee, etc.), on the other. This is because the truth-conditional status of these two may be different.

### 3.3.4.1 *Truth conditionality 1: Participant inclusion*

Starting with the first test regarding the status of participant inclusion, phrases standing for arguments are expected to contribute to the truth conditions of the proposition so that if the entities they stand for are not involved, at whatever level, the proposition is expected to be judged false. In contrast, phrases standing for nonarguments may not participate in the truth-conditional content of the proposition.

Indeed, the nonargument Coreferential dative clearly does not contribute an additional event participant, but it is hard to put such sentences to the test, for the subject of the sentences necessarily refers to a relevant entity. It is not so easy to test Ethical datives either. Our aim here is to show that while the absence in reality of the entity for which the Ethical dative stands renders the utterance less than perfectly acceptable, it does not render the proposition false. This is why B's response in (24) can be prefaced with the truth confirming *right* while proceeding to deny the involvement of the dative-marked entity:

(24) ~A: *ani zoxer-et she-hi xal-ta le-moshe*  
 I remember-PRS.SG.F that-she get.sick-PST.3SG.F to-Moshe  
*be-abaabuot ruax ve-neelacnu le-ashpez ota.*  
 with-chicken.pox and-have.PST.1PL to-hospitalize her  
*le-xodsh-aim.*  
 for-month-DU.

B: *naxon, aval moshe kvar lo haya ba-xayim az.*  
 right, but Moshe already not be.PST.SG.M in.the-living then.

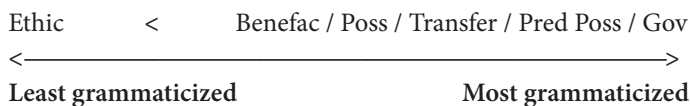
‘A: I remember that she got sick with chicken pox on Moshe and we had to hospitalize her for two months.

B: Right, but Moshe was no longer alive by then.’

Now, all the other dative-marked entities are far more inherent to the propositional content, enough to render the proposition false should they not be involved in reality. The following External Possession (a) and Governed (b) datives are therefore not as acceptable as (24):

- (25) a. ~A: *hi shavra le-dan et ha-shinaim lifnei*  
 she break.PST.3SG.F to-Dan ACC the-teeth before  
*xodesh.*  
 month  
 B: ??*naxon, aval ze haya le-mixael.*  
 right, but it be.PST.SG.M to-michael.  
 'A: She broke Dan's teeth a month ago.  
 B: ??Right, but it was Michael's teeth (she broke)'  
 b. ~A: *hi azra le-dan harbe lifnei xodesh.*  
 she help.PST.3SG.F to-Dan a.lot before month.  
 B: ??*naxon, aval ze haya le-mixael.*  
 right, but it be.PST.SG.M to-Michael.  
 'A: She helped Dan a lot a month ago.  
 B: ??Right, but it was Michael (she helped)'

In sum, the Ethical dative stands apart from all the rest in this Truth-conditionality Test 1, motivating the following Argument Grammaticization Scale:



### 3.3.4.2 Truth-conditionality 2: Additional meanings

Given that most dative constructions have additional meanings associated with them, let us now examine their status. (Note that Governed datives have no general interpretation associated with them, so they cannot be tested.) The interpretation associated with Predicative Possessive and Transfer datives must be taken into account when the proposition is assessed for a truth value, which is why B's responses declaring A's utterances as true are unacceptable:

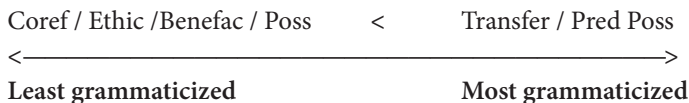
- (26) a. ~A: *yesh lo harbe xaver-im.*  
 there.is to.him many friend-PL  
 'He has many friends.'  
 B: ??*naxon, aval hem sheli.*  
 right, but they mine.  
 'Right, but they are mine.'  
 b. ~A: *hi natna lo et ha-bait.*  
 she give.PST.3SG.F him ACC the-house.  
 B: ??*naxon, aval ha-bait shela.*  
 right, but the-house hers.  
 'A: She gave him the house  
 B: Right, but the house is hers.'

Unlike Predicative Possessive and Transfer datives, the interpretations associated with the other constructions cause an anomaly rather than a judgment of falsity if incompatible with reality. But crucially, they may be ignored when truth-conditionality is computed, so that A's propositions below may be confirmed as true by B, despite the mistaken or contested attribution encoded in the dative (see Horn, 2008 for English nonargument datives). We exemplify the point for External Possession (a) and for Benefactive (b) datives here:<sup>20</sup>

- (27) a. A: *rai-ta ex hu shifshef le-acmo et*  
 see-PST.2SG.M how he scrape.PST.3SG.M to-himself ACC  
*ha-oto?*  
 the-car? (March, 29, 2012)
- B: *naxon, aval ze ha-oto shel ha-shaxen sheli.*  
 right, but this the-car of the-neighbor my.
- 'A: Did you see how he scratched his car?  
 B: Right, but it was my neighbor's car.'
- b. A: *hexlafti lax oto.* (7)  
 change.PST.1SG to.you him
- B: *naxon, aval asit et ze bishvil ha-kef shelax!*  
 right, but do.PST.2SG.F ACC this for the-fun your.SG.FEM
- 'A: I changed him (the baby) for you.'  
 B: Right, but you did it for fun for yourself.'

As can be seen here, the Possession and Benefactive interpretations in (27a) and (b) (respectively) can be rejected while confirming the truth of speaker A's propositions as a whole, which means that while propositional, they do not necessarily affect truth judgments.

In sum, this aspect of truth-conditionality, based on additional dative meanings, motivates a slightly different partitioning of the dative constructions on the Argument Grammaticization Scale, as follows:



20. Bosse et al. (2012) classify Benefactive datives (our Affectee category) as datives contributing truth-conditional meanings (at least for Micmac, an Algonquian language they mention). In Hebrew, once we consider examples such as *baxar* 'pick' or *kana* 'buy', where the verbs by themselves do not encode benefaction, the benefactive aspect can be denied without falsifying the whole proposition.

### 3.4 Argument Grammaticicization Scale: Conclusions

In §3.1-§3.3 we subjected the seven dative constructions under investigation to numerous tests, each aimed at pointing to how grammaticized as an argument the dative is within the construction. The first striking finding is that the various criteria, taken as a whole, do not yield a dichotomous division between absolutely grammaticized and absolutely nongrammaticized dative arguments. We present this as specific evidence in support of general claims in the literature that the argument/adjunct distinction is not as clear-cut as many linguists would like to assume. At the same time, a second striking finding is that, despite the very many different cut-off points on the scales above, the order of the constructions on the grammaticization scales is consistent. Thus, while adjacent datives on the scale may pattern together on one parameter but not on another, we found no cases where a dative manifests a more grammaticized behavior as an argument than its right-hand neighbor(s). Taken together, the tests allow the dative construction types to be differentiated as a seven-point scale:

#### The Argument Grammaticicization Scale

Coref < Ethic < Benefac < Poss < Transfer < Pred Poss < Gov

<----->

Least grammaticized

Most grammaticized

Table 3 is our attempt to summarize in further detail how the Argument Grammaticicization Scale represents the differential grammaticization of the dative as argument in each of the constructions, with respect to each of the diagnostic tests. A zero for a given test means the dative in the specific construction does not pattern as a grammatical argument. Any positive integer indicates some grammaticization, with higher numbers pointing to higher degrees of grammaticization along the scale of the specific diagnostic.<sup>21</sup> For example, the Coreferential dative construction does not pass any of the grammaticization tests, so the result of each test, wherever applicable, is 0. We therefore take the Coreferential construction as the baseline, and each construction that differs from it with respect to a test is indicated in the table by incrementing the value by 1.<sup>22</sup>

21. We should emphasize, however, that numbers on different rows cannot be compared. A single step on the truth-conditionality scale, for example, may be more diagnostic of grammaticization than several steps on one of the other scales (or vice versa). Moreover, we do not even assume that the scales are linear: the difference between a score of 0 and a score of 1 is not necessarily identical to the difference between 1 and 2 etc. along the same parameter.

22. But note that Coreferential dative does manifest a first step towards grammaticization in that, like all the other datives, it occurs immediately adjacent to the verb, thereby ousting the complement from its verb-adjacent position.

**Table 3.** Grammaticization diagnostics by dative construction

Construction		Coreferential	Ethical	Benefactive	External Poss.	Transfer	Predicate Poss.	Governed
Section	Diagnostic							
§3.1.1	Obligatoriness	0	0	0	0	1	1	1
§3.1.2	Reflexive relations	0	0	1	2	2	3	4
§3.1.3	<i>do so</i> -anaphora	0	0	0	0	1	N/A	2
§3.2.1	Centrality	0	0	1	1	2	2	2
§App. C	Paraphrasability	0	0	1	2	3	4	4
§3.2.2	Referentiality	0	1	1	1	1	1	1
§3.3.1	Functional conservation	N/A	0	0	0	1	1	1
§3.3.2	Innovative meanings	N/A	0	1	2	3	3	4
§3.3.3	Subjectivity	0	0	1	1	2	2	2
§3.3.4.1	Truth-conditionality (1)	N/A	0	1	1	1	1	1
§3.3.4.2	Truth-conditionality (2)	0	0	0	0	1	1	N/A
	Total Differences <sup>23</sup>	–	1	6	3	8	2	3

For example, the Obligatoriness test, when applied to the Ethical dative construction, produces the same zero result for it as for the Coreferential dative. The zero for the Ethical dative then represents not only nongrammaticization but also an absence of difference between the two constructions. The next column of numbers represents the presence/absence of difference between Ethical and Benefactive datives with respect to the same test. The result is again 0. Once we get to the Transfer ('give') construction there is a difference in degree of grammaticization, so the value is incremented by 1. Since there are no differences between the final three constructions, the value remains 1 in this row. In the next diagnostic, the values vary between 0 and 4 for Reflexive relations, reflecting a richer gradation in grammaticization and a greater differentiation between the various constructions. So, the five constructions on the right each test positive for grammaticization, but to different degrees. For example, compared to the Ethical dative (0), the Benefactive dative is more grammaticized (1), the External Possession and Transfer datives are still more grammaticized (2) than the Benefactive, and so on for the Predicative Possession (3) and Governed datives (4). Note that while

23. The "Total Differences" value for each column represents the number of diagnostic tests that exhibit a different value from that for the dative construction to its immediate left (i.e. total of differences from the previous column).

some tests are dichotomous (e.g. Obligatoriness, Referentiality, and the two Truth-Conditionality tests), others create a more graded picture (e.g. Reflexive Relations, Paraphrasability, etc.). (Where a test could not be applied to a construction, this is indicated by N/A).

The bottom row of numbers tallies the difference in the number of positive diagnostic test results relative to their left-hand neighbors. A higher value in this column reflects a more robust grammaticization differential between neighboring constructions. We can see that the Coreferential dative construction has no positive integers and the Ethical dative is mostly similar to it, except for the referentiality criterion, on which the Ethical dative comes out grammaticized. Hence, the bottom number for the differential between them is 1. Between the Ethical and Benefactive constructions the gap is much greater, with six additional tests testifying to the latter's increased grammaticization (shown by the fact that six of the numbers for External Possession are higher than their Benefactive counterparts). Between the Benefactive and the External Possession dative construction only three additional tests define a difference in degree of grammaticization. Next, eight grammaticization tests separate Transfer from the External Possession dative construction. Then, only two tests distinguish Transfer from Predicative Possession datives, and two again separate Predicative Possession from the Governed dative construction. While each of the constructions is distinct from the constructions adjacent to it, a broader perspective shows that the grammaticization tests roughly distinguish three main groups of dative constructions. The least grammaticized group is the Coreferential and Ethical dative constructions. An intermediate group is comprised by the Benefactive and External Possession dative constructions. The most highly grammaticized group contains the Transfer, Predicate Possession, and Governed dative constructions.

#### 4. Empirical support (II): Converging evidence for pronominal datives and grammaticization depth

Having argued for the Argument Grammaticization Scale with a qualitative analytical methodology using sentence-based diagnostics, we turn now to a quantitative corpus-based methodology. We seek independent converging evidence for a graded degree of grammaticization for datives as arguments. In the next section we present our corpus findings regarding the discourse profile of each of the seven dative constructions, involving the distribution of lexical versus pronominal datives in the various constructions. We will show that there is a positive correlation between the frequency of lexical nominals and the depth of grammaticization for a given construction. We believe that the discourse profile

data not only mirror the specific Argument Grammaticization Scale argued for on independent grounds in §3, but also support our claim that Constructional Preferred Argument Structure is instrumental in the grammaticization of adjuncts into arguments.

In this section we present quantitative corpus evidence supporting our main claim that the lexical/pronoun ratios for Hebrew datives are correlated with the degree to which the specific dative is grammaticized as an argument. Section §4.1 outlines the predictions we make for these correlations, §4.2 describes the methodology we adopted, and §4.3 presents the results as they apply to our claim.

#### 4.1 Predicting lexical ratios

Section §3 presented qualitative, judgment-based arguments for the first claim of this paper, namely, that the dative phrases in the different Hebrew constructions are grammaticized as arguments to varying degrees. We now build on the Argument Grammaticization Scale established above to provide quantitative corpus evidence supporting our second claim, that pronominal datives pave the way for grammaticization of the dative as an argument (see again §2 about how all roads lead to the pronoun). We expect all datives which are grammaticized as arguments to some degree to manifest a significantly higher ratio of pronouns to lexical NPs in comparison to adjuncts. Within datives showing some degree of grammaticization we expect the relatively less grammaticized datives to manifest a higher ratio of pronouns to lexical NPs compared to more highly grammaticized datives.<sup>24</sup> We summarize our predictions in Table 4.

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24. The grammaticization of Coreferential datives is more complicated, however. We assume that like all the datives here discussed, they began as pronouns standing for a participant role not lexically specified for by the verb. However, unlike the other datives, which have acquired at least some argument status, Coreferential datives in fact lost their referentiality and with it any claim to argument status. There was then no motivation to change their pronominal form, which is why they did not turn into reflexive pronouns, despite the fact that they are anaphoric with the subject.

**Table 4.** Predicted frequency of lexical NPs based on depth of grammaticization

Argument status of dative construction	cPAS prediction	Frequency of lexical NPs
a. None ( <i>bishvil</i> 'for') <sup>25</sup>	Platform	Many
b. Low	Pocket	None
c. Intermediate	Pocket	Very few
d. High	Pocket	A few (~ 10%)
e. High + platform shift	Platform	Many

Our first prediction (a) is that adjuncts may contain a relatively high proportion of lexical NPs, because cPAS does not constrain adjuncts (Du Bois, 1987:832). Second, a dative construction is more likely to contain a lexical (non-pronominal) dative the more deeply grammaticized the dative is as an argument. We then predict what we call a lazy V-shaped curve for Lexical NP occurrence: A high ratio for adjuncts, virtually no lexical nominals for early phases of grammaticizing datives (b) and gradually rising for intermediate phases (c) and even more so for highly grammaticized datives (d). Still, we predict that even the most highly grammaticized datives will not show as high a lexical NP ratio as the adjuncts. Previous research (Du Bois et al., 2003b) found a ceiling of about 10% lexical nominals in designated pocket positions. We add a fifth prediction with respect to Governed datives (e). Although Table 3 shows the dative here as only slightly more deeply grammaticized as an argument than its left-hand neighbor (Predicate Possession), as mentioned in §2.2, once grammaticized, Governed datives may manifest a platform shift, such that the dative argument is designated the platform of the construction. If platform shift occurs, we predict a relatively high lexical NP ratio.

We test these predictions against a corpus of Hebrew texts, based on the 165-million-word Israblog Corpus (Linzen, 2009b). In order to check our hypothesis that just because they are grammaticized (to varying degrees), datives (as a group) manifest a relatively low proportion of lexical nominals, we needed to compare the pronoun/lexical NP ratios of our datives to some adjunct. We picked *bishvil* 'for' PPs as the most appropriate counterpart adjunct, because, as exemplified in (13), *bishvil* 'for' adjuncts are semantically rather close to Benefactive datives (Berman, 1982 suggests that Benefactive datives are replaceable by *bishvil* adjuncts). No wonder we can find cases where English 'for you' Benefactives are translated into Hebrew datives, rather than into *bishvil* 'for' PPs:

25. Note that *bishvil* 'for' is not an argument nor a dative, it is included here as reference point for comparison only.



(28) Source: 'I can sketch him for you'

Translation: *ani yaxol le-cayer lexa oto.*

I can.M.SG to-draw to.you.M.SG him (The movie *To take a life*).

Still, while semantically similar to *bishvil* PPs, dative-marked Benefactives must be distinguished from adjunct *bishvil* PPs, as can be seen in (29):

(29) *ma lo asiti bishvil-a, ha-kol, pashut ha-kol.*

what not do.PST.1SG for-her, everything, simply everything.

(*hitxal-ti le-hagia le-bet sefer bishvil-a...*)

(begin.PST.1SG to-arrive at-school for-her...)

([www.elsf.net/showthread.php?t=451583](http://www.elsf.net/showthread.php?t=451583))

'What didn't I do for her, everything, simply everything. (I started attending school for her...)

Substituting *la* 'dative to.her' for the Benefactive marked *bishvila* 'for her' here will either be inappropriate or change the meaning of (29). The more grammaticized dative requires a more intimate (argument-like) relation between the dative participant and the event (Berman, 1982), but here the boy, in love with some girl at his school, starts attending school in her honor. She is not an internal participant in the events, so while the Benefactive role is appropriate, a dative is not. Similarly, *shar le* 'sang to' versus *shar bishvil* 'sang for' are distinct in that the dative one probably has the dative-marked entity present on the scene, but this is not necessarily so for the latter case. So *bishvil* PPs are just the right adjuncts to be compared to the various dative constructions. They are added participants, but they are not profiled as inherent to the event.

## 4.2 Methodology

Due to the large differences in frequency between the constructions, it was not possible to compare the constructions using a random sample of dative sentences: This would have required manually annotating many thousands of sentences to get a meaningful sample of noun phrases for each of the constructions. Targeted searches for each individual construction are complicated by the fact that a number of the constructions can only be identified as some construction rather than another by reference to their contextual interpretation (see (10) above), making

it difficult to construct a search string that would single out only one of them. To obtain a sample of tokens of each of the constructions, we therefore limited our searches to verbs that are likely to be used with only one of the constructions:<sup>26</sup>

**Table 5.** Verbs used for corpus searches for four of the dative constructions

Benefactive	External Possession	Transfer	Governed
<i>irgen</i> 'organize'	<i>haras</i> 'destroy'	<i>natan</i> 'give' <sup>27</sup>	<i>shiker</i> 'lie'
<i>ciyer</i> 'draw'	<i>baat</i> 'kick'		<i>la'ag</i> 'mock'
<i>hexin</i> 'prepare'	<i>nika</i> 'clean'		<i>ya'ac</i> 'advise'
<i>afa</i> 'bake'	<i>risek</i> 'smash'		<i>da'ag</i> 'worry, take care'
<i>bishel</i> 'cook'	<i>shavar</i> 'break'		<i>azar</i> 'help'

The search was restricted to sentences in which the dative noun phrase appeared immediately adjacent to the verb. This is by far the most common word order in Hebrew for both pronouns and lexical nouns, except perhaps when the dative argument is focused (I baked a cake *for John*, not *for Mary*).<sup>28</sup> We took advantage of the fact that the corpus is morphologically analyzed to search for all inflected forms of a given verb lemma simultaneously. Search engine errors were dealt with as follows. For each verb, we randomly sampled 100 sentences with a pronominal dative argument and 100 sentences with a lexical dative argument. We then manually verified that the dative construction used in the sentence was indeed the one we had expected.<sup>29</sup> We discarded sentences that contained search errors and irrelevant constructions. Since our interest is in the proportion of pronouns in sentences *within* each construction, excluding sentences with irrelevant constructions does not bias our results against or in favor of our hypothesis. We then extrapolated the proportion of true tokens of each type to the entire result set. For example, if the automatic search query for a given verb turned up 5000 results with

26. While this approach exploits an association between verbs and constructions, similar to what has been termed 'collostructions' by Gries & Stefanowitsch (2004), note that our goals differ from theirs, as does our treatment of the verb-construction correlation.

27. We chose only *natan* 'give' because we were interested in a deeply grammaticized dative here. Other transfer verbs, such as *heevir* 'transfer', can occur without a recipient.

28. This was done for two reasons: first, to put the constructions on an equal footing in case some constructions are more likely than others to allow the dative argument to be extraposed to later positions in the sentence; and second, the lack of a syntactically parsed corpus makes the identification of a dative argument at an arbitrary location technically unfeasible. In future work, once better technical tools are available, potential differences in word order flexibility among the constructions should be explored.

29. The first and second authors separately classified each of the sampled utterances. The few differences were discussed and resolved.

lexical dative NPs, but only 50% of the hand-annotated sample of 100 sentences turned out to be real dative NPs in the intended construction, we estimated the number of true lexical dative NPs for that verb to be 2500.

Two other constructions, Predicate Possession and the adjunct *bishvil* ‘for (the sake of)’, do not involve verbs and are formally distinct from the previous three constructions, so it was easier to search for them separately. Our Predicate Possession searches were for both positive and negative Predicate Possession in the present tense (*yesh le-* ‘have’, *ein le-* ‘not have’). Since the search queries for Predicate Possession and *bishvil* adjuncts turned up a very large number of results, we restricted these queries to the subset of the corpus comprised of texts by authors between the ages of 30 and 40. This age group was chosen arbitrarily, simply because it had a relatively smaller number of authors overall compared to other age groups.

According to the original PAS Quantity constraint, we would ideally have had to consider dative constructions containing predicates with an equal number of arguments/participants, because the more participants there are, the less likely it is for the speaker to encode the dative using a lexical nominal (because of the Quantity constraint). But had we restricted ourselves to two-argument predicates we would have had to exclude the Transfer dative, and moreover, it would have been quite difficult to automatically identify two-argument Benefactive and External Possession dative constructions, which typically include three participants. Had we chosen to restrict ourselves to three-argument predicates, on the other hand, we would have had to exclude the Governed and the Predicative Possession datives. Fortunately, these differences are less crucial within the recent cPAS definition, where each argument structure construction is allowed a single designated platform. In this respect, the difference between two- and three-participant predicates is at least reduced, because in all of our constructions it is a nondative argument that represents the original designated platform slot.

For reasons of practicality, we did not search for two of our constructions: Coreferential and Ethical datives. Coreferential datives are by definition pronominal, so there was no point in searching for them in a corpus. For the Ethical dative we were not able to find a verb that consistently co-occurred with it. Based on our judgments, lexical NPs are very unusual as Ethical datives anyway.<sup>30</sup> So we tentatively assume that both constructions appear with lexical NPs zero times in the sample, though for different reasons: the Coreferential dative because it is by definition incompatible with lexical NPs, and the Ethical dative because it is extremely infrequent with them.

30. In fact, Hebrew scholars assume that they are obligatorily pronominal (Borer & Grodzinsky, 1986).

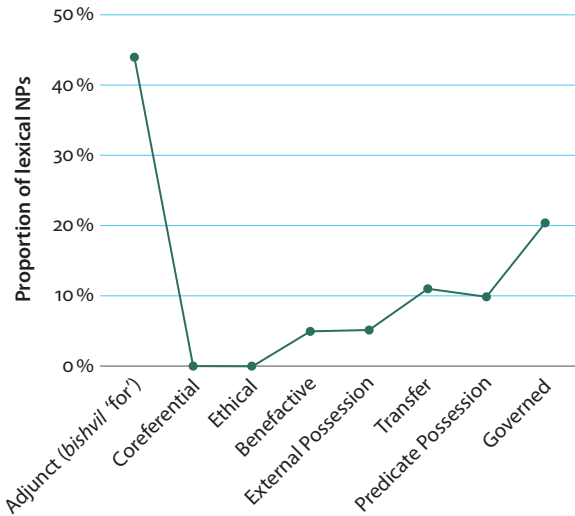
We used Fisher's exact test to evaluate the statistical significance of the difference between each pair of consecutive constructions on the Argument Grammaticization Scale. Tests of the statistical significance of the difference between two ratios, such as Fisher's exact test, crucially depend on the number of tokens in each sample: a lexical NP proportion of 20% in one construction is not significantly different from a 30% proportion in another construction when the sample size is 100 sentences per construction ( $p=0.14$ , Fisher's exact test), but becomes significant when the sample size is increased to 170 sentences ( $p=0.03$ ). In fact, any difference, no matter how small and devoid of practical significance, will be statistically significant if the sample is large enough. This concern applies to research on large corpora in general, and to our data in particular, since some of our searches yielded tens of thousands of matches.

To address this issue, we normalized the counts for each of the dative constructions, such that the total number of sentences for each construction (lexical + pronominal) was fixed at 500. For the constructions for which we used representative verbs (see Table 5), we further normalized the counts for each of the five verbs in each construction, such that they summed up to 100. This procedure was employed to prevent frequent verbs from influencing the results more strongly than infrequent verbs. While arbitrary, the relatively small fixed caps that we imposed on the number of tokens of each verb and construction ensure that statistically significant results reflect differences that are theoretically meaningful. Note that the sampling and normalization procedures we used do not bias the results in favor of or against our hypothesis — we did not use the lexicality of the dative argument as a criterion for sampling.

### 4.3 Findings

The lexical/pronoun ratios found in the data support our claim about their correlation with degree of argumenthood. A quick look at Figure 1 shows that our prediction for a lazy V-shaped curve (where the left prong of the V is dramatically steeper and taller than the right one) is fulfilled (see again Table 4). Lexical dative ratios are clearly correlated with their degree of argumenthood. Coreferential and Ethical datives were of course not significantly different from each other, since we fixed both of them to have exactly 0 lexical NPs. The difference between Ethical and Benefactive datives was significant ( $p < 0.001$ ; Fisher's exact test, here and in what follows), but the difference between Benefactives and External Possession was not ( $p > 0.5$ ). Next, Transfer datives had a significantly higher proportion of lexical NPs than External Possession datives ( $p = 0.001$ ). Predicate Possession and Transfer datives were not significantly different from each other ( $p > 0.5$ ). Finally,

the proportion of lexical NPs in Governed datives was significantly higher than in Predicate Possession and transfer datives ( $p < 0.001$ ).



**Figure 1.** Lexical NPs in adjunct bishvil 'for' PPs and in seven dative constructions

Note that PAS, and specifically the revised cPAS, predicts many of our findings. First and foremost, the dramatic difference in the ratio of lexical nominals between the adjunct *bishvil* 'for' and all of the datives: cPAS constraints apply to arguments, but not to adjuncts. Second, cPAS predicts the low lexical ratios (under or at 10%) of all datives designated as pockets: the low grammaticization datives (Coreferential and Ethical), as well as the intermediate and high grammaticization datives (Benefactives, External Possession, Transfer, and Predicate Possession). Next, the fact that Predicate Possession datives are not proportionally more lexical than Transfer datives is due to the fact that both ratios are at the "ceiling" for cPAS violations. Finally, the fact that cPAS enables a platform shift, whereby the dative argument becomes the new platform, displacing the prior platform argument from this status, explains the significantly above-ceiling (20%) lexical ratio for the Governed datives.

Note, however, that cPAS by itself cannot explain the differences between different pocket-designated datives, specifically, between Ethical (and Coreferential) datives and Benefactive (and External Possession) datives, as well as between Benefactive (and External Possession) datives and Transfer (and Predicate Possession) datives. This is where our proposal for a gradual increase of lexical nominals as a function of degree of argumenthood complements cPAS. Pronouns, which pave the way for would be arguments, gradually give way to lexical nominals as the datives become more entrenched as arguments. Especially interesting

are the steeper slopes between Ethical and Benefactive datives, where six criteria show the latter to be more grammaticized than the former, and between External Possession and Transfer, where eight criteria show the latter to be more grammaticized than the former.

But neither cPAS nor our theory, as stated so far, can account for the lack of difference between Benefactive and External Possession datives, where three criteria determine that the latter dative is more of an argument than the former dative. We tentatively propose that this may actually be on the verge of changing. We base this conjecture on a comparison between the variability of results for individual verbs within these dative categories, as well as Governed dative, as shown in Figure 2.

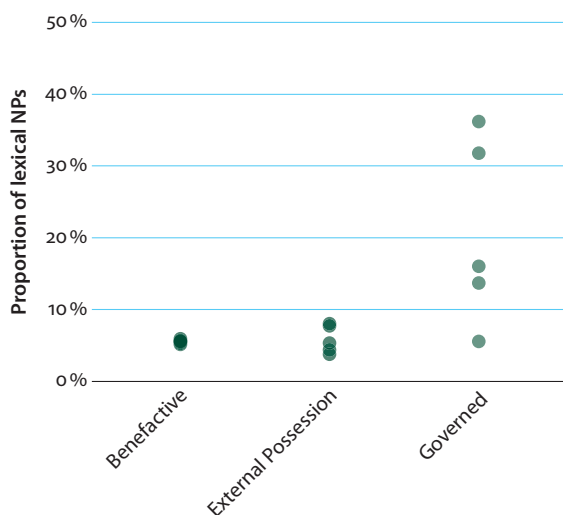


Figure 2. Variability in lexical NP ratio across verbs, by selected dative constructions

Note that the most grammaticized dative type, the Governed dative, shows an extremely wide range of lexical ratios for different verbs (5.5%-36.1%). This is in sharp contrast with the least grammaticized dative Benefactive, which shows a very narrow range of variation between verbs (5%-5.9%). It is well known that grammaticization of arguments, even of constructional arguments, often proceeds verb by verb. For example, Gries & Stefanowitsch (2004) find different ratios of double object (core argument) as opposed to prepositional object (non-core) Benefactives for different English verbs. Indeed, such motivated differences are to be expected once we assume that pronouns lead the grammaticization of adjuncts into arguments. Support for this assumption comes from Dattner (2015), where as many as 85% of the verb + dative combinations carry only a single discourse function each. It may then be the case that the gradual consolidation of grammaticization,

and with it the partial relaxing of the need for cognitive containment, proceeds verb by verb. Note also that, at least impressionistically, the verbs occurring with External Possession datives are not as unified as the Benefactive dative verbs (the lexical NP ratio of the former ranges between 3.7% and 7.9%). It may be that this spread is indicative of the beginning of a differential grammaticization rate for different verbs within the construction, which may ultimately lead to a differential rise in the use of lexical NPs, with the more grammaticized External Possession dative verbs leading the way. Needless to say, this proposal is highly speculative at this stage, and must be left for future research. The high lexical ratios for some Governed verbs may reflect platform shift, with a well-established dative argument reanalyzed as the platform for its argument structure.

The difference between the set of two-argument predicates (Governed and Predicative Possession) and the set of three-argument predicates we examined (Transfer, External Possession, and Benefactive) in Figure 1 is noteworthy. The two-argument predicates might be expected to accommodate more lexical NPs than the three-argument predicates, given that they have fewer arguments offering the opportunity for a lexical nominal. Indeed, they do: Governed and Predicative Possession datives have the most lexical datives. However, the very marked difference within the three-argument constructions, while not violating the Quantity Constraint, cannot be accounted for by it either. Only degree of grammaticization as argument can explain the difference between the lexical ratios of External Possession (and Benefactive) datives and the Transfer 'give' in Figure 1.

All in all, the data fully confirm our hypotheses. First, whereas adjuncts are free positions (platforms), some arguments are constrained (pockets). Indeed, the ratio of lexical nominals is far greater for adjuncts than for any of the arguments. Next, we saw significant differences between the ratios of pronouns for the different dative constructions. Crucially, these differences correlate with the degree to which the datives are grammaticized as arguments (as independently established by the criteria in §3). Incipient grammaticizations are correlated with very few lexical datives; in contrast, more grammaticized argument datives accommodate more and more lexical NPs, while still complying with cPAS. This means that pocket datives can get up to around 10% lexical nominals. In contrast, the platform dative created by platform shift is free to introduce any number of lexical nominals. The fact that incipient grammaticization phases do not realize the 10% "quota" testifies to the important role pronouns have in pioneering extra argument slots. As was argued in §2.1, pronouns are short, stand for highly accessible entities, and are cognitively light. As such, they are ideal candidates for when speakers attempt to portray a complex event with an ad hoc construction that increases valency. Interestingly, the same characteristics of pronouns also make

them proper candidates for triggering a potential grammaticization process en route to becoming full-fledged arguments (see again §2.3).

Note that our point about a special role for pronominal datives bears some resemblance to a recent proposal by Bosse et al. (2012) for a cross-linguistic generalization, whereby non-selected arguments that are entirely non-truth-conditional can **only** be weak pronouns. Bosse et al. assume a parametric variation between languages that have purely non-truth-conditional affected experiencers and ones which have (partly) truth-conditional nonselected arguments. They classify Hebrew as a non-truth-conditional affected dative language, which, following their generalization, only allows clitic pronouns for the nonselected datives. Indeed, this is true for Coreferential datives, and virtually always true for Ethical datives. But it is not absolutely so. Lexical NPs are not entirely blocked for Ethical datives. Example (30a) is such an attested example. In (b) we replaced the original pronoun with a lexical NP referring to the entities referred to by that pronoun, and the result is entirely acceptable:

- (30) a. *kvar paam axat kimat hitalafti la-mora*  
 already once almost faint.PST.1SG to.the-teacher.F  
*ha-zu me-rov ayefut.*  
 this from-much tiredness.  
 'I almost fainted already once on this teacher out of great fatigue.'  
 ([www.thecage.co.il/blog/userblog.php?postid=67621&blog\\_id...](http://www.thecage.co.il/blog/userblog.php?postid=67621&blog_id...))
- b. *~ani mekava she-yael lo teled le-shauli*  
 I hope.PRS.F that-Yael not give.birth.FUT.3SG.F to-Shauli  
*ve-roxale bidiyuk ha-shavua.*  
 and-Rochale precisely this-week.  
 'I hope Yael will not give birth on Shauli and Rochale (Yael's parents)  
 precisely this week' (when they are abroad).  
 (Original example, M.A., Jan. 15, 2011).

Still, we think that there is something to the constraint offered by Bosse et al., if it is reformulated as a functionally motivated tendency, rather than as an absolute formal constraint. In fact, we believe that the tendency they observed is a natural consequence of the very claim we make in this paper. Note that Bosse et al. admit that they have no explanation for the correlation they find between non-truth-conditional datives and pronouns. We are suggesting that the correlation is indirect. It is not between non-truth-conditionality and pronouns per se, but rather, between early phases of grammaticization as an argument and pronominality. Of course, as we have seen above (see again §3.3.4) there is correlation between a meaning being innovative and non-truth-conditional. Under the commonly accepted assumption that semantic meanings often arise out of pragmatic



inferences, a pre-semanticized stage for some interpretation would naturally involve a non-truth-conditional status for the interpretation, for such is the nature of contextually-induced inferences. If we are correct, then the correlation pointed to by Bosse et al. is but one of a host of correlations between pronominal datives and other features characteristic of a low degree of grammaticization for the construction, as pointed out above.

In fact, the rationale for including Coreferential and Ethical datives in our study was to make sure that we can account for this virtually grammatical fact. Of course, we knew ahead of time that these datives hardly ever introduce lexical nominals. But we had to make sure that the two constructions do not manifest some significant degree of argumenthood according to our criteria in §3, or they would constitute a counterexample to our theory. The finding that these two dative types are the least grammaticized as arguments then naturally accounts for why Hebrew imposes the pronominal restriction. All other theories must stipulate it.

Further support for the association between degree of argumenthood and pronoun/lexical ratios comes from a recent paper by Boneh & Bar-Asher Siegal (2014), in which they split up what we consider Ethical datives into counter-expectation Ethical datives and Affectee datives (in general).<sup>31</sup> Interestingly, this subset of Ethical datives, restricted to first and second persons, cannot be lexical, as they note. Indeed, the Ethical datives we find that can incorporate lexical nominals (e.g. (30)) are not of that type. The counter-expectation Ethical datives are similar to Coreferential datives in that both have evolved innovative meanings which mark a shift away from affectedness and from argumenthood.<sup>32</sup> Such datives, which do not follow a path of grammaticization towards argumenthood, we predict, do not face the pressure to incorporate lexical nominals.

Under our analysis, then, the pronominal restriction discussed by Bosse et al. (and others) receives a motivated explanation: The cognitively light pronouns are a means to add participants onto an existing argument structure. If the dative is nonreferential, it is not en route to full argumenthood, and so does not gradually introduce lexical NPs. In addition, the nonabsolute nature of the restriction (namely, the fact that it is only statistically true for the most part) is no obstacle to our generalization, because our account takes into account the dynamic nature of

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31. While we see the rationale for distinguishing between the two Ethical cases, we would still wish to distinguish between our Affectee cases (as in (6)) and the cases they include under “affectee” cases (as in (7)), with respect to how inherent to the event the dative participant is (more so in (6) than in (7)).

32. As Boneh & Bar-Asher Siegal point out, such Ethical datives, just like Coreferential ones, may precede (rather than follow) the main verb when an auxiliary verb precedes the main verb. In other words, these datives do not necessarily occupy the post-verbal Affectee position.

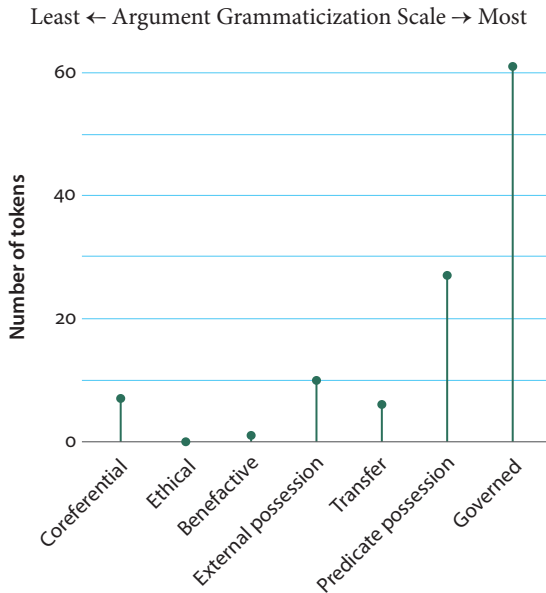
language, where degree of argumenthood may increase over time, in which case, we expect lexical NPs to gradually come to fill more of these dative slots.

## 5. Potential objections

The dative constructions we have considered vary widely in their frequency. One objection to our analysis might therefore be that grammaticization is associated with frequency, so the more frequent constructions are more grammaticized. As Du Bois' Functional Frequency Principle has it, 'Grammars code best what speakers do most' (Du Bois, 1985: 363, 2014: 273–276). To evaluate this possibility, we selected a random sample of 200 sentences from the corpus which contained the dative preposition *le*. We excluded search errors, as well as allative, experiencer, and purpose constructions, which are not discussed in this paper, leaving 112 tokens analyzed here. The distribution of the tokens is shown in Figure 3, ordered according to the Argument Grammaticization Scale. As can be seen from Figure 3, there is a significant correlation between frequency and degree of grammaticization as an argument (Pearson's  $r = 0.78$ ,  $p = 0.03$ ). This correlation is not perfect, however. The two most grammaticized constructions are indeed the most frequent ones, and the least frequent Ethical dative is quite ungrammaticized; at the same time, the frequency of the other datives does not correlate with their degree of grammaticization as argument. So frequency alone cannot account for all the data.

Next, our account for the gradual grammaticization of Hebrew datives relies heavily on cPAS constraints. But not everyone has endorsed Du Bois' PAS constraints. Haspelmath (2006) and Everett (2009) have in fact proposed to eliminate PAS constraints (see also Dahl, 2000). According to these proposals, we need not appeal to the Role constraint of "Avoid lexical A's" in order to explain why these positions are so often filled by pronominal NPs (nor, presumably, to the similar cPAS Role constraints "avoid lexical Recipients" and "avoid lexical Benefactives"). Since such participants are predominantly human, and humans tend to be topical and Given, they say, they are naturally encoded as pronouns. Once humans are predicted to be pronominal, there is in fact no justification for the Quantity constraint either, according to these proposals. If human actors (including Agents, Recipients, and Benefactives) are pronominal because they are human, only Objects, which tend not to be human, are free to be lexical.

Everett goes on to provide counts for the strong statistical correlation between agents and pronouns from English and Spanish. We have no quibble with these data, and have ourselves relied on such observations to motivate the dative grammaticization process (see again §2). In fact, precisely such discourse factors were originally presented by Du Bois (1987: 839–843) to motivate the first PAS



**Figure 3.** Frequency of dative constructions by depth of grammaticization

constraints. It would hardly make sense for a language to evolve a linguistically defined constraint that was incompatible with a motivated discourse profile. Instead, the grammaticization process merely reifies naturally motivated and highly salient discourse profiles, which is why human actors (benefactors, experiencers, and recipients) are often designated pocket roles within argument structure constructions, and why intransitive subjects and direct objects are often designated as platform roles. It would be a mistake, however, to treat humans as *inherently*, rather than probabilistically, Given information and/or pronominal. While the tendency for humans to be Given represents a statistical trend in some (but not all) discourse contexts, it cannot be taken as a logical equivalence. Equating human with Given information, without regard to discourse variability, invokes an essentialist logic which is inimical to discourse-functional explanation. In contrast, explanations based on cPAS are grounded in the observable variability of discourse profiles for argument and adjunct roles in different constructions. The variability generated by discourse plasticity is a necessary part of the adaptive processes that lead to grammaticization (Du Bois, 2014).

To support our claims, we examined the ratio of human referents in Benefactive datives and in *bishvil* ‘for’ adjuncts. At first blush, the results seem to support Everett’s position. While 97% of the dative Benefactives are human, only 64% of the *bishvil* ‘for’ NPs are human. However, contra Everett’s and Haspelmath’s assumptions, humanness is not enough to explain pronominality. Only 5% of the

dative-marked humans were expressed lexically rather than pronominally, but 23% of *bishvil*-marked humans were lexical, more than four times as many. In other words, the difference between *bishvil* and Benefactive dative NPs cannot be attributed to humanness. Rather, it is degree of accessibility that matters most. The *bishvil*-marked humans are simply not as consistently highly accessible as the dative-marked humans. And what is crucial for grammaticization is a low lexical ratio, not humanness per se. It is pronouns that most directly index the enactment of the Cognitive Containment Strategy, not NPs that denote humans.

Moreover, note that all the dative roles are predominantly filled by human participants. Thus, the reductionist proposals of Haspelmath, Everett, and Dahl should predict a similar lexical NP ratio for all the datives concerned. Figure 1 shows that this is clearly not the case. Our point is that while semantic and discursive tendencies may be contributing factors in the emergence of a complex linguistically defined constraint like PAS or cPAS, they do not make it superfluous. The large gap in the number of lexical NPs between the adjunct and all the (partially) grammaticized datives attests to the specifically linguistic nature of PAS/cPAS, which applies to arguments, and not to adjuncts, even if it is only a soft constraint. The PAS/cPAS Quantity constraint is then not redundant, although it is certainly motivated by the discourse profiles originally noted by Du Bois (1987), with additional evidence recently supplied by Everett.

Another claim which may seem in conflict with our analysis is Traugott's (1982 and onwards) observation that historical change typically proceeds from the objective (referential) to the subjective. The present study suggests that the original introduction of dative-marked participants must have contributed to a more subjective construal of the event. In fact, this is still true for datives in early-grammaticization phases (see especially example (2) above). But the ultimate consolidation of this dative into a more grammaticized argument within a well-established dative construction suggests that speakers later defined a new construal of the event, which now routinely and "objectively" includes within it an additional participant. This is clearly so for the three most grammaticized dative constructions in this study. This consolidation of a new standard event conceptualization suggests that grammaticization can move from ad hoc subjectivity to sedimented objectivity, not just the other way around. One incidental finding from our study, then, is that while an objective to subjective direction of change may be more common, the opposite change is also attested and indeed motivated.

## 6. Conclusions

Our claims in this paper are twofold. First, we propose that Hebrew datives manifest different degrees of argumenthood, which in turn supports recent claims that the borderline between adjuncts and arguments is neither rigid nor dichotomous. We argue for this claim based on a qualitative, sentence-based methodology involving eleven tests for argument status. The results support a cline of grammaticization for the Hebrew dative constructions.

Second, we argue that it is specifically datives that can readily grammaticize into argument status. Support for this claim rests mainly on two converging facts: (1) Datives typically stand for participants that speakers choose to construe as involved in events which do not necessarily inherently involve them (e.g. as part of the causal chain of the event). These added humans are highly accessible, which therefore allows them to be pronominal; and (2) processing pronouns requires a relatively minimal cognitive effort. Pronominal datives can be more easily added onto pre-existing argument structures/constructions, which already have a designated platform slot, because as pockets they do not violate the Quantity constraint.

We supported our claim by comparing the lexical NP ratios for a relevant adjunct (*bishvil* 'for') and for seven constructions representing varying degrees of grammaticization of the dative as argument. Our corpus counts confirmed that all seven dative types were realized by pronouns far more often than was the adjunct *bishvil* 'for'. Moreover, the lexical NP ratios for the different dative constructions correlated with the position of the dative on the Argument Grammaticization Scale. The differential behavior of *bishvil* 'for' and the datives reflects the observation that the Quantity constraint applies to arguments but not to adjuncts. Taken together, the picture we have developed shows how the grammaticization of new argument roles can be facilitated via the introduction of pronominal datives.

We hope that future research will corroborate our findings for Hebrew, based on a larger set of verbs. More ambitiously, we would like to encourage linguists to distinguish between preliminary and advanced phases of grammaticization of NP arguments, and test our hypothesis that early grammaticization phases, where existing argument structures or constructions are extended to accommodate additional arguments, favor pronouns, whereas later grammaticization phases are less restricted, and are subject to a potentially different cPAS assignment of pockets and platforms (including possible platform shift). In fact, something fundamental seems to be missing from the extremely large literature on the English dative alternation (Bresnan et al., 2007, Gries, 2003 *inter alia*) according to Du Bois (2008). Linguists typically take for granted the existence of two distinct, roughly paraphrastic constructions — the prepositional phrase and double object constructions — and see their goal as accounting for the differences between them in structure and use. But

from an explanatory point of view, we need to account for the typological existence of these two constructions (especially the double object construction) in the first place.<sup>33</sup> The well-known observation that double-object recipients are overwhelmingly pronominal, animate, and in general highly accessible, can then be seen in a new light. Researchers have often explained the higher accessibility of double object recipients as compared with their prepositional counterparts by reference to the Praguean principle of Given before New (i.e. recipient before theme) (Arnold et al., 2000). Since the recipient in the double object construction precedes the theme, but the recipient in the prepositional phrase follows it, speakers choose a double object construction for accessible recipients. But looked at from the typological-functional perspective of cPAS, the more fundamental difference between the double object and the prepositional phrase recipients is that the former exhibits the grammatical properties of a core argument, as well as its discourse profile. From this perspective, the prevalence of pronominals in the recipient role of the double object construction reflects a likely application of the Cognitive Containment Strategy, whereby “pocketing” the accessible recipient allows the emergence of the double object construction as a grammaticized core argument structure. If this proves correct, it would be a further instance in which pronominal datives pave the royal road to argument status.

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33. See Malchukov & Comrie (2010) for a typological classification of grammatical alignments of themes and recipients.

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## Appendix A. IU-external adjuncts and arguments

There is a dramatic difference between adjuncts and arguments: Arguments very rarely occur outside the intonation unit of their governing verb, while adjuncts often do. Figure 4 represents the proportion of English arguments and adjuncts that did not occur in the same intonation unit with their governing category (a verb for the most part). We checked the first 70 *in the* NP cases in Santa Barbara Corpus of Spoken American English (Du Bois et al., 2000–2005), where 14 were verbal arguments and 43 were adjuncts (the rest were sentential adjuncts and one repeated PP). The difference between the behavior of argument and adjunct *in the* NPs is highly significant ( $p < 0.001$ , Fisher's exact test). Another count was made for the first 200 *for* adjuncts in SBC and the first 100 direct objects in SBC: 001. The difference between these two is again highly significant ( $p < 0.001$ , Fisher's exact test). These prosodic findings confirm that arguments are more tightly integrated into the clause than are adjuncts.

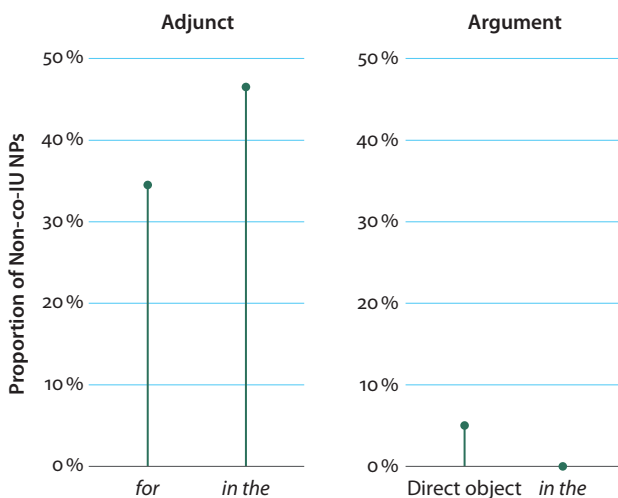


Figure 4. Proportion of noun phrases occurring in a different intonation unit from their governing category.

## Appendix B. *Do so* anaphora

Huddleston (2002) offers the *do so* anaphora test for determining whether a given phrase is an adjunct or a complement (a nonsubject argument). As mentioned in Section 3.1.3, adjuncts do not fall under the scope of a *do so* anaphora, and can therefore co-occur with the *do so* phrase. Indeed, (31) shows that the deeply grammaticized datives behave like complements and cannot co-occur with a *do so*, the less grammaticized datives behave like adjuncts, freely co-occurring with the *do so*, and the Transfer dative shows an in-between patterning.<sup>34</sup> The tests are based on attested examples, or minimally modified versions thereof:<sup>35</sup>

- (31) a. **Governed dative:**  
 ~\**ani azkir le-dan ve dana taase*  
 I remind.FUT.1SG to-Dan and Dana do.FUT.3SG.F  
*oto davar le-ran.*  
 the.same thing to-Ran.  
 'I will remind Dan and Dana will do so to Ran.'
- b. **Transfer dative**  
 ~?*ata natata le-dan et ha-telefon ve-ani*  
 you give.PST.2SG.M to-Dan ACC the-telephone and-I  
*asiti oto davar le-ran.*  
 do.PST.1SG the.same thing to-Ran  
 'You gave Dan the telephone and I did so to Ran.'
- c. **External Possession dative**  
 ~*hi xiteta le-dan ba-xayim ve-dana*  
 She poke.PST.3SG.F to-Dan in.the-life and-Dana  
*asta oto davar le-ran.*  
 did.PST.3SG.F the.same thing to-Ran  
 'She rummaged around in Dan's life and Dana did so to Ran.'
- d. **Benefactive**  
 ~*ani hexlafti le-dan et ha-tinok ve-dana*  
 I change.PST.1SG to Dan ACC the-baby and-Dana  
*asta oto davar le-ran.*  
 did.PST.3SG.F the.same thing to-Ran  
 'I changed the baby for Dan and Dana did so for Ran.'
- e. **Ethical Dative**  
 ~*rina hitalfa li be-emca ha-rikud ve-dana*  
 Rina faint.PST.3SG.F to.me in-middle the dance and-Dana  
*asta oto davar le-ran.*  
 did.PST.3SG.F the.same thing to-Ran  
 'Rina fainted on me in the middle of the dance and Dana did so on Ran.'
- f. **Coreferential dative**<sup>36</sup>  
 ~*ani racti li sovelet kol rega*

34. Note that the Predicative Possession dative does not function like a complement, but rather, like a subject. Hence, the *do so* test cannot be applied to it.

35. We note that Reviewer 2 finds 31(a&b) acceptable; we do not.

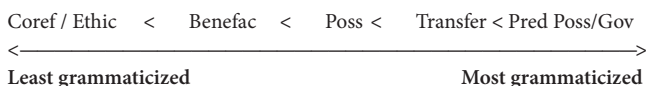
36. Note that the Coreferential dative must be adjacent to the verb, and hence, must occur following *asta* 'did', rather than following *asta oto davar* 'did the same'.



in fact, which modifies the predicate that denotes the event.<sup>37</sup> For the Ethical dative in (8), the extra predication would be something like ‘I’m empathizing with your hardships’. While the Coreferential dative in (9) can be rendered by an adverb, such as *leisurely*, this is not always the case. In (34), it would take an extra predication to specify that the surge of nationalism the speaker felt was something not under his control, an autonomous activity:

- (34) *me-ein leumiyut she-meolam lo zihiti be-kirbi*  
 some.kind.of nationalism that-never not identify.PST.1SG in-me  
*caca la lefeta...*  
 pop.up.PST.3SG.F to.it suddenly...  
 ‘A kind of nationalism that I had never identified in myself popped up suddenly...’ (Haaretz, May 20, 2011).

Assuming that the grammaticization status of paraphrases for our dative constructions is a rough indication of the centrality of the participant role, this motivates the following version of the Argument Grammaticization Scale:



## Appendix D. Referentiality

The datives concerned here start out as referential NPs, so we expect them to remain referential en route to becoming full-fledged arguments. As we see below, however, Coreferential datives are not referential, and hence make unlikely semantic arguments.

Here is a typical conjoined Predicate Possession dative:

- (35) *yesh li ve-lax xazara hayom.*  
 there.is to.me and-to.you rehearsal today  
 ‘I and you have a rehearsal today.’ (www.kipa.co.il/community/show/3476811).

Most of the datives can be part of a conjoined NP. Even some Ethical datives can be marginally conjoined NPs, as in (36), where we added a conjoined NP to the example in (8):<sup>38</sup>

- (36) *~taxziku li ve-le-aba maamad sham!*  
 hold.IMP.2PL to.me and-to-dad on there!  
 ‘Hang in there (for me and for dad)!’

The only construction where the dative absolutely cannot be conjoined to another NP is Coreferential Dative (Borer & Grodzinsky, 1986):

- (37) *\*~ata ve-dan roim lexa ve-lo srat-im?*

37. Indeed, in their free glosses of what we call Ethical datives Bosse et al. (2012) introduce an additional clause, such as ‘and it matters to X’. Al-Zahre & Boneh (2010) do the same for Coreferential datives.

38. But we should add that we have not encountered any such cases. In fact, note that the above conjoined NP most likely refers to ‘mom and dad’, who can be taken as a single referent, ‘parents’.

you and-Dan watch.PRS.PL.M to.you and-to.him movie-PL?  
 'Are you and Dan watching movies?'

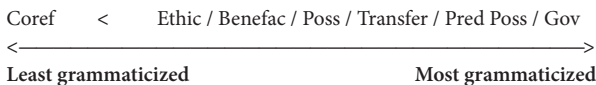
The same pattern emerges for contrastive accent: All but Coreferential datives can receive contrastive accent. Example (7b) shows a contrastively accented Malefactive dative, and we can contrastively accent the other datives in examples (3) through (8), given an appropriate context. It is not so easy to put accent on the Ethical dative in (8), so here is a more natural example (based on an attested example):

- (38) *~she-lo texle LI, texle la-METAPELET!*  
 that-not get.sick.FUT.2SG.M TO.ME, get.sick.FUT.2SG.M to.the-NANNY!  
 'Don't you get sick on ME, get sick on the NANNY!'

A third test which gives the exact same result is topicalization, which moves the dative away from post-verbal position. Once again, Coreferential datives do not allow such a shift (Al-Zahre & Boneh, 2010) (a), but the rest do (we use Benefactive (b) and External Possessive (c) datives as examples):

- (39) a. Coreferential  
*~\*LI ani menagenet be-meshex sha-ot.*  
 to.me I play.music.PRS.SG.F for hour-PL  
 'ME I play music for hours.'
- b. Benefactive  
*gam LI hu hitkin azaka.*  
 also to.me he install.PST.3SG.M alarm  
 'For ME too he installed an alarm.'  
 (www.fullgaz.co.il/forums/archive/.../t-63922.htm)
- c. External Possessor  
*gam LO shavru et ha-lev.*  
 also to.him break.PST.3PL ACC the-heart  
 'They also broke HIS heart.'  
 (www.spirala.org.il/2011/04/9618)

Conjoinability, contrastive accent and topicality all support the following dichotomous division of the Argument Grammaticization Scale:<sup>39</sup>



## Appendix E. Functional conservation

We assume that the original meaning at the basis of all the dative constructions is that of a participant added to an otherwise coherent event. Despite the fact that it is added on as an extra participant, the original motivation was to profile this participant as somehow affected by the

39. Borer & Grodzinsky (1986) use ability to question, conjoin, and put accent on the dative as tests for syntactic argumenthood, reaching the conclusion that External Possession datives are arguments, while Coreferential and Ethical datives are not. The more extensive set of tests proposed in this paper yields slightly different results.

event (although not as manipulated by an agent). This was essentially Berman's (1982) insight. If the original meaning is conserved, we take this as evidence for a lesser degree of grammaticization of a given dative construction.

The profiling of the dative-marked entity as an added participant is totally missing for Governed, Predicative Possession, and Transfer datives. The dative-marked participant in these constructions is no longer profiled as an **added** Affectee participant to an event that is otherwise established and coherent as an event lacking the dative participant. Rather, the event denoted crucially depends on the dative-marked participant. All the other constructions mostly do profile the dative-marked participant as an added affectee. In fact, Berman (1982) analyzes all datives along a scale of affectedness. Most External Possession datives are unacceptable if affectedness is missing. Here is a minimal pair:

- (40) a. *ad axshav lo raiti lo et ha-cla-ot.*  
 up.to now not see.PST.1SG to.him ACC the-rib-PL (www.agenda.co.il, May 26, 2010)  
 b. *~??ad axshav lo raiti lo et ha-calax-ot.*  
 up.to now not see.PST.1SG to.him ACC the-plate-PL  
 'Up to now I haven't seen his ribs/??plates.'<sup>40</sup>

A participant is most likely to be (indirectly) affected when objects are affected that form part of their personal sphere (Dąbrowska, 1997). Hence the acceptability of (40a) but not of (b), which then testifies to the survival of the affectedness meaning in External Possession datives.

Note that some External Possession dative constructions seemingly show no affectedness:

- (41) *ata nire tov. arax lexa ha-sear, kmo*  
 you look.PRS.SG.M good. get.longer.PST.3SG to.you the-hair, as  
*she-ani ohevet. gadal lexa kcat safam*  
 that-I like.PRS.SG.F grow.PST.3SG.M to.you a.bit moustache  
 'You look good. Your hair got longer, just as I like it. You have a bit of a moustache.'  
 (israblog.nana10.co.il/blogread.asp?blog=573408&blogcode)

Objectively, there may seem to be no tangible effect on the addressee by his hair and moustache growing. But in fact, it is the point of utterances such as (41) to profile an effect of the event described (the lengthened hair and moustache) on the dative marked entity (the addressee). This is what accounts (at least partly) for the change noted in the addressee, for why "he looks good".<sup>41</sup>

Affectee and Ethical datives clearly profile the dative-marked participant as an affectee (see again (7) and (8)). Coreferential datives, however, no longer profile affectedness, or at least not directly so, although all the modern aspectual interpretations they carry are derivative of the idea that the subject participants focus the effect of their action on themselves. Consider the following, rather typical example:

- (42) *halaxti li ba-rexov ve-pitom bli*

40. Reviewer 2 accepts the sentence we mark unacceptable, but see Pykkänen (2008) for native Hebrew speakers' judgments similar to ours.

41. There is ample evidence that speakers prefer to use the External Possession dative over other possessive construction when the possessor is perceived as affected. However, this preference is weaker than in similar constructions in other languages, and appears to be diminishing with time (Linzen, 2014). This suggests that affectedness may be losing its status as a necessary condition for using the External Possession dative.



walk.PST.1SG to.me on.the-street and-suddenly without

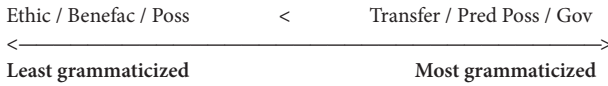
*she-samti lev nafalti le-bor.*

that-pay.PST.1SG attention fall.PST.1SG into-hole

'I was (leisurely) walking on the street and suddenly without paying attention I fell into a hole in the ground.'

([www.tipo.co.il/zone/page.asp?zone=61906075858539](http://www.tipo.co.il/zone/page.asp?zone=61906075858539)).

It is quite possible that to this day self-affectedness acts as an overarching constraint on the possible uses of Coreferential datives, even though affectedness is no longer a directly profiled meaning of the construction. In this respect, Coreferential datives manifest a deeper degree of semanticization than External Possession, Affectee, and Ethical datives. But crucially, the semanticization here does not show increased argumenthood. Quite the contrary, in fact. The dative functions as an aspect marker modifying the verb, which means it has lost any claim to argumenthood. We therefore exclude Coreferential datives from the following two-way Argument Grammaticization Scale, since our focus is on the grammaticization of datives as arguments:



### *Corresponding author's address*

Mira Ariel

Tel Aviv University

Department of Linguistics

Ramat Aviv

Tel Aviv 69978, Israel

[mariel@post.tau.ac.il](mailto:mariel@post.tau.ac.il)