

Lexical Syntax 25 Years Later

A Retrospective and Prospective Look at the Dative Alternation in LFG

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Outline

Early LFG: The lexicon drives the syntax

LMT: principles of function-argument correspondence exploit the semantics of lexical argument structures

OT-LFG: Anti-lexicalist problems

Stochastic OT-LFG: Toward quantitative syntax and usage studies of lexical relations, undermining some of the original motivations for lexically driven syntax

Early LFG: The lexicon drives the syntax

Oehrle (1976)^a: Different ‘success criteria’ for giving:

I gave you a book for your birthday. (You now own the book.)

I gave you my bicycle for the afternoon. (I left it unlocked, so you could use it, but I am still the owner. I just gave you custody.)

Besides transfer of ownership and transfer of custody, the verb *give* a **third reading** (causative):

Interviewing Nixon gave Mailer a book. (p. 44)

That movie gave me the creeps. (p. 66)

“A notable fact about what we have called the ‘third reading’ of sentences with *give* is that the prepositional dative construction is not available—or if so only in certain rather special cases.” (p. 67)

**Interviewing Nixon gave a book to Mailer.*

**That movie gave the creeps to me.*

‘...in all cases in which the third reading is available, the double object construction is base-generated ...’ p. 68

^abuilding on Green (1974)

The dative alternation as a lexical regularity

Fred handed a boy to the baby.

Fred handed the baby a toy.

“Both syntactic structures can be base-generated, and the seeming transformational relationship between them can be expressed instead as a relationship between the lexical forms for *hand*.”

Bresnan (1979) “Polyadicity” p. 313

Syntactic properties of the alternation—its being lexically governed, bounded, and structure preserving—follow from the fact that **the rules deriving the dative alternation are restricted to the information available in the lexical entries of verbs** (Bresnan 1978, 1982).

In subsequent work initiated by **Pinker (1983, 1989)**, each of a number of fine-grained semantic classes of dative verbs and idioms has been mapped onto a unique syntax:^a

‘x causes y to have z’ (possessive) ⇒ NP V NP NP

‘x causes z to go to/be at y’ (allative) ⇒ NP V NP [to NP]

^aGropen et al. 1989, Speas 1990, Levin 1993, Marantz 1993, Goldberg 1995, Pesetsky 1995, Davis 1997, Harley 1996, in press, Arad 1998, Kay 2000, Bruening 2001, Krifka 2001, ao

Supported by **semantic restrictions** on the dative alternation:

(1) a. I threw the box to John. ~ I threw John the box.

b. I lowered the box to John. $\not\sim$ *I lowered John the box.

(Pinker 1989: 110–111; Levin 1993: 46, 114)

(2) a. Ann faxed the news to Beth. ~ Ann faxed Beth the news

b. Ann yelled the news to Beth. $\not\sim$ *Ann yelled Beth the news.

(Krifka 2001)

(3) The lighting here gives me a headache. $\not\sim$ *The lighting here gives a headache to me.

(Marantz 1993; Bruening 2001: 261)

In sum ...

When the same verb appears with both dative NP and dative PP syntax on this account, the meanings of the two constructions differ. Either the verbs *throw*, *fax*, and the like are lexically **polysemous**, or polysemy is imposed by the differing constructional contexts they appear in.

Problem: Alternating dative syntax can be found in contexts of repetition:

“You don’t know how difficult it is to find something which will please everybody—especially the men.”

“Why not just **give them cheques?**” I asked.

“You can’t **give cheques to people.** It would be insulting.”^a

“You **carrying a doughnut to your aunt** again this morning?” J.C. sneered. Shelton nodded and turned his attention to a tiny TV where “Hawaii Five-O” flickered out into the darkness of the little booth. “Looks like you **carry her some breakfast** every morning.”^b

^aDavidse (1996a: 291), from Graham Green (1980) *Doctor Fischer of Geneva or the Bomb Party*. London: The Bodley Head)

^bwww.flagpole.com/Issues/12.23.98/shortstory.html

A proposed solution:

Pinker (1989: 83): “the meaning of *give* inherently specifies change of possession”. It cannot be used to specify a spatial motion: *I *gave/threw a book onto the table.*

Krifka (2001) on *give*:^a “every transfer of possession entails an abstract movement event in the dimension of possession spaces.”^{b,c}

By means of such meaning postulates, different semantic representations of *give* can be made truth-functionally equivalent.

^abuilding on Gropen et al. (1989) and Pinker (1989: 83)

^bThe Latinate verbs (*donate, contribute, etc.*) remain an exception to this generalization for morphophonological reasons.

^cThe *give a headache* idiom is not affected by this meaning postulate, according to Krifka (2001), because the theme does not just change possession but comes into existence.

Lexical Mapping Theory:

principles of function-argument correspondence

exploit the semantics of lexical argument structures

Semantic classification of a-structure roles for function:

patientlike roles (**including possessor**): θ
[$-r$]

secondary patientlike roles (**not including possessor**): θ
[$+o$]

other semantic roles: θ
[$-o$]

A-structure to f-structure mapping principles:

a. Subject roles:

(i) $\hat{\theta}$ is mapped onto SUBJ; otherwise:
[$-o$]

(ii) θ is mapped onto SUBJ.
[$-r$]

b. Other roles are mapped onto the lowest compatible syntactic function on the markedness hierarchy:
 $S \succ O, OBL_{\theta} \succ O_{\theta}$.

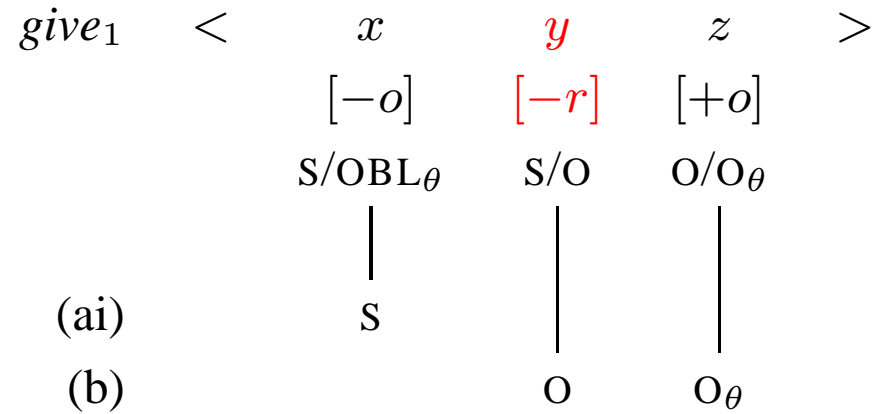
$y = \text{Recipient/possessor}; z = \text{Theme}$

$give_1 < x \quad y \quad z >$
 $[-o] \quad [-r] \quad [+o]$

$y = \text{Recipient/goal}; z = \text{Theme}$

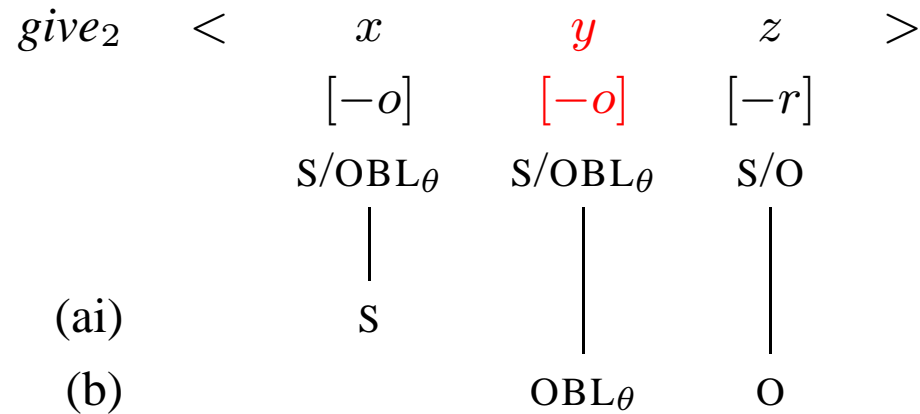
$give_2 < x \quad y \quad z >$
 $[-o] \quad [-o] \quad [-r]$

$y = \text{Recipient/possessor}; z = \text{Theme}$



*I gave **them** cheques.*

$y = \text{Recipient/goal}; z = \text{Theme}$



*I gave cheques **to them**.*

OT-LFG: Anti-lexicalist problems

Nick Evans (1997: 398): “... is only the role important, or does the choice of cast also influence the way an event is portrayed?”

The dative alternation (and the behavior of applicatives) depends not only on the semantics of the verb, which determines the roles, but also on the properties of the cast of referents that fill the roles: animacy, person, information status.

Witness Mayali (Evans 1997), Southern Tiwa (Rosen 1990), Shona (Hawkinson and Hyman 1974) and Sesotho (Morolong and Hyman 1977), among many others.

In Kanuri (Hutchison 1981, Nikitina 2003) there is a person-driven dative alternation.

With the Kanuri verb ‘give’ a third person recipient can be expressed only in a postpositional phrase:

shi-ro yikəna
him-to give-PRF
‘I gave (it) to him’

Note that it appears to be highly dispreferred to drop the third person recipient:^a

?*yikəna*
0-give-PRF
‘I give (it) to him’

However, if the recipient is second or first person, it is normally expressed as a direct object prefix on the verb:

nj-ikin
2SG.OBJ-give
‘I give (it) to you’

^a—suggesting the lack of a zero morph for 3rd person object on the verb

We could simply annotate person and other ‘cast’ properties onto the lexical argument structure (as both Evans 1997 and Bresnan and Moshi 1990 do):

$y = \text{Recipient/possessor}; z = \text{Theme}$

$give_1 < x \quad y \quad z >$
 $[-o] \quad [-r] \quad [+o]$
 [PERS 1,2]

$give_1 < x \quad y \quad z >$
 $[-o] \quad [-o] \quad [+o]$
 [PERS 3]

But there is no meaning difference in the giving verb when the person of the recipient changes. Here LMT has been tacitly augmented with a principle that intrinsically classifies the roles of lexical argument structures on the basis of properties far outside the lexical entry for a verb, deriving ultimately from the reference and information status of its arguments.

This looks like **an anti-lexical move** from the perspective of traditional LFG. Recall:

Syntactic properties of the alternation—its being lexically governed, bounded, and structure preserving—follow from the fact that **the rules deriving the dative alternation are restricted to the information available in the lexical entries of verbs** (Bresnan 1978, 1982).

On the other hand, why isn't this just **lexical idiosyncrasy**? The person constraint can simply be pre-specified in the lexicon for certain verbs independently of the general LMT principles of argument realization. After all, only the Kanuri verb 'give' shows this person split. All other dative verbs in Kanuri express the recipient with a postpositional phrase.

The problem is that the lexical idiosyncrasies of many languages all split in the same direction (for example French and other Romance languages, Bulgarian, Arabic, Georgian), while none are known to split in the opposite direction (3^{rd} person recipients = OBJ; 1^{st} , 2^{nd} recipients = OBL).

The OT framework allows one to derive such splits from general principles.

Nikitina (2003) proposes an OT analysis based on the universal harmonic alignment of informational properties (person, pronominality, and animacy) with Core and non-Core syntactic functions:^a

FAITH(R): Express the recipient role of a verb with distinct marking (case or adposition)

*STRUCT: Avoid syntactic structure (here: *PP)

HARMONY(1,2): Prominent (1st, 2nd) person harmonically aligns with prominent (Core) syntactic function. (here: *PP_{1,2 Person})

^aSubjects and objects, both O and O_θ are Core syntactic functions; obliques are non-Core syntactic functions, as in Bresnan (2001), ao.

Kanuri rankings:

	<i>FAITH_{other}(R)</i>	<i>HARMONY(1,2)</i>	<i>FAITH_{give}(R)</i>	<i>*STRUCT</i>
input: /I gave it to you/				
☞ 'I gave you it'			*	
'I gave it to you'		*!		*

	<i>FAITH_{other}(R)</i>	<i>HARMONY(1,2)</i>	<i>FAITH_{give}(R)</i>	<i>*STRUCT</i>
input: /I gave it to him/				
'I gave him it'			*!	
☞ 'I gave it to him'				*

Kanuri rankings continued:

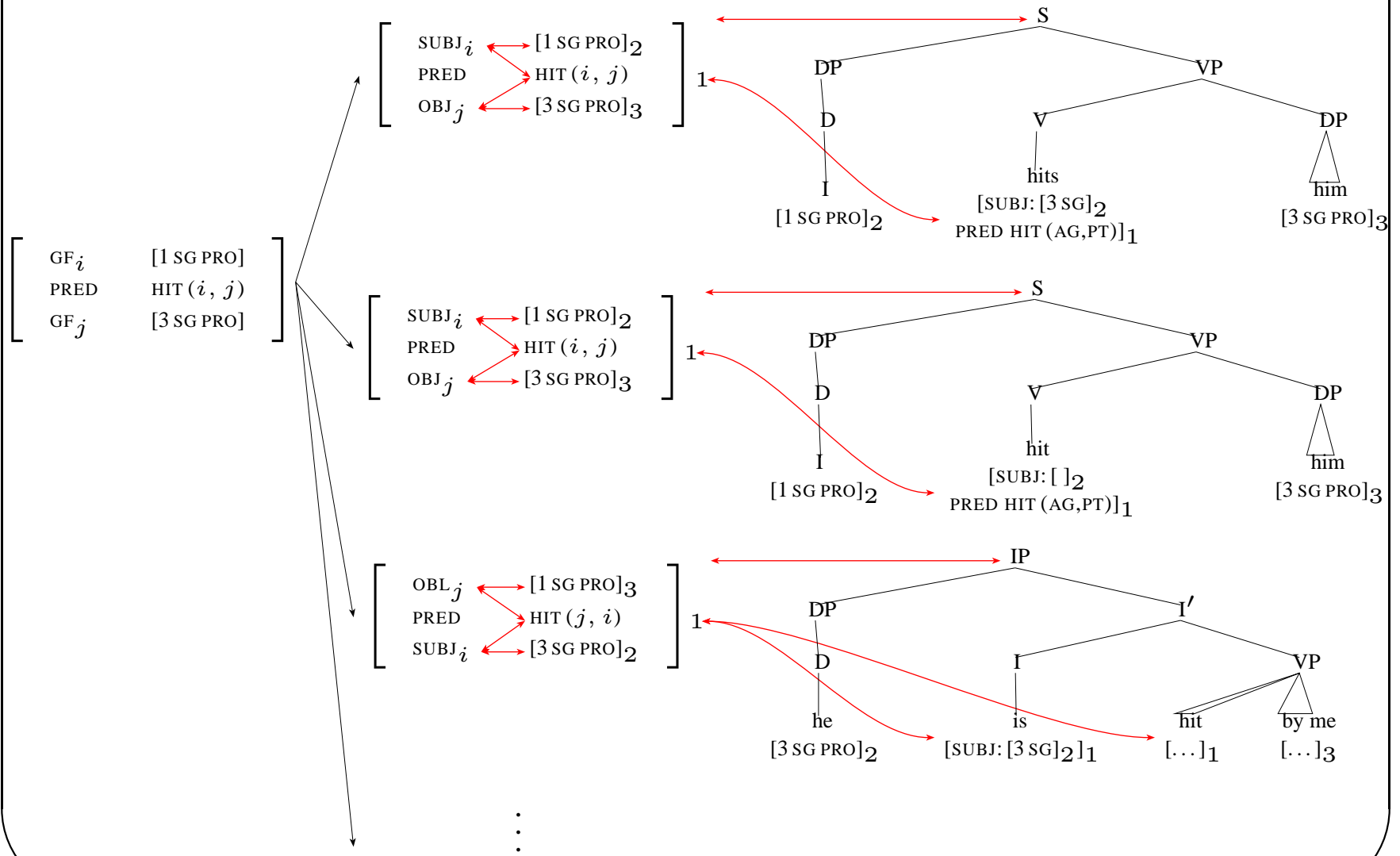
	<i>FAITH_{other}(R)</i>	<i>HARMONY(1,2)</i>	<i>FAITH_{give}(R)</i>	<i>*STRUCT</i>
input: /I sent it to you/				
‘I sent you it’	*!			
☞ ‘I sent it to you’		*		*

	<i>FAITH_{other}(R)</i>	<i>HARMONY(1,2)</i>	<i>FAITH_{give}(R)</i>	<i>*STRUCT</i>
input: /I sent it to him/				
‘I sent him it’	*!			
☞ ‘I sent it to him’				*

OT assumes that syntactic choices are not lexically pre-determined. Alternative syntactic expressions of the same semantic content are universally available as candidates for optimization.

In this way, paradoxically, OT undermines the original lexicalist motivations for LFG (and other lexical syntactic theories).

OT-LFG (Kuhn 2001)



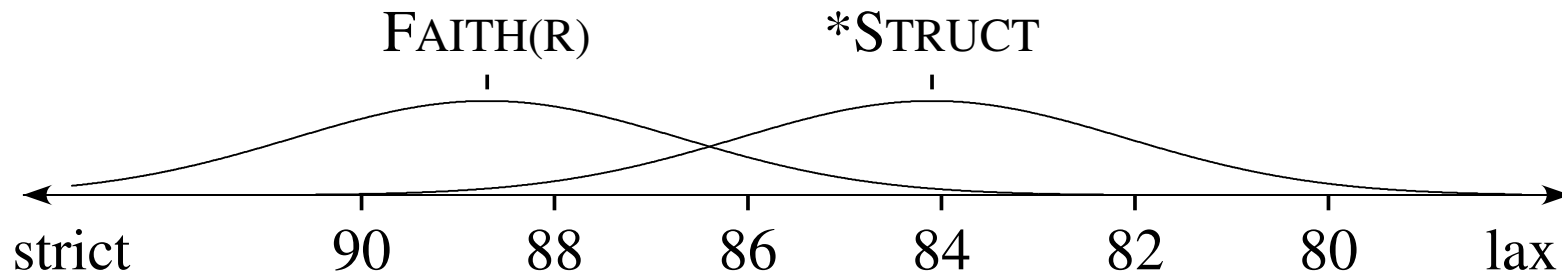
Stochastic OT-LFG: Toward quantitative syntax
and usage studies of lexical relations

“Hard constraints mirror soft constraints”

At Lfg01 (Hong Kong), Bresnan, Dingare, and Manning argued that phenomena that appear to be categorical in some languages, where they are attributed to hard grammatical constraints, continue to show up as statistical preferences in other languages, motivating a grammatical model that can account for soft constraints (Bresnan, Dingare, and Manning 2001, Dingare 2001).

These results fall beyond the classical generative methods of LFG/LMT and require a probabilistic model of grammar, such as stochastic OT (Manning 2003).

Constraint ranking on a continuous scale with stochastic evaluation:



	*STRUCT	FAITH(R)
☞ give them cheques		*
give cheques to them	*!	

	FAITH(R)	*STRUCT
give them cheques	*!	
☞ give cheques to them		*

In OT with stochastic evaluation the variable rankings of *STRUCT and FAITH(R) produced by noisy evaluation will lead to constraint reversals at a frequency which is a function of the distance between the constraints on the continuous ranking scale. Given variable ranking normally distributed around a mean, the closer together the constraints are, the more the reversals, and the more variable the outputs.

An OT grammar with stochastic evaluation can generate both categorical and variable outputs.

Categorical outputs arise when crucially ranked constraints are distant. As the distance between constraints increases, interactions become vanishingly rare. (A distance of five standard deviations ensures an error rate of less than 0.02%.)^a

^aSee Boersma and Hayes (2001: 50). Units of measurement are arbitrary. With standard deviation = 2.0, a ranking distance of 10 units between constraints is taken to be effectively categorical.

The person alignment hypothesis for dative verbs

Previous corpus studies of the dative alternation have found evidence of a skewing of animate, definite, short, pronominal, and given recipient arguments toward the dative NP position and away from the dative PP position (Givón 1984; Thompson 1990, 1995; Collins 1995). Givón (1984) characterizes the dative NP as a grammaticalized “secondary topic” and Thompson (1990: 241, 1995: 158) interprets the findings as evidence that the dative NP argument has more subject-like informational properties (‘topicworthiness’) than the dative PP argument.^a

^aSubject-like syntax for the NP-dative is embodied in some syntactic derivations of datives as well (Larson 1988; cf. Jackendoff 1990, Larson 1990).

In corpus studies of the choice between active and passive, the distribution of first and second person pronouns ('local' persons or speech act participants) has been found to be skewed toward the subject argument and away from nonsubject arguments in English (Estival and Myhill 1988, Bresnan, Dingare, and Manning 2001, Dingare 2001). If the dative NP shares informational properties with subjects, as has previously been hypothesized, then **we would expect to find local persons harmonically aligned with the core dative NP argument and nonlocal persons with the noncore dative PP argument.**

Bresnan and Nikitina (2003) investigated this hypothesis in the parsed SWITCHBOARD corpus.^a

^aThe SWITCHBOARD corpus is a database of spontaneous telephone conversations spoken by over 500 American English speakers, both male and female, from a great variety of speech communities (Godfrey et al. 1992). The conversations average 6 minutes in length, collectively amounting to 3 million words. We used the parsed portion of this corpus (released as part of the Penn Treebank, Marcus et al. 1993), which contains 1 million words.

The corpus study:

In the SWITCHBOARD corpus, dative NPs of all types (pronominal and nominal) are more frequent than dative PPs of all types: 83% ($n = 517$) of all the dative arguments collected are expressed as dative NPs, and only 17% ($n = 104$) as dative PPs.

If we split up these dative arguments by person, we find that **the distribution of local (first and second) persons is skewed toward dative NPs while the distribution of nonlocal (third) persons is skewed toward dative PPs:**

Table 1: Person by Dative Argument Type in SWITCHBOARD

	dative NP	dative PP
1^{st} , 2^{nd} person	296	20
3^{rd} person	220	83

All alternating dative verbs, pronominal and nominal 3^{rd} persons

Fisher's exact test, $p(O \geq E) < 0.000$

However, person is highly correlated with many other properties: for example, pronouns are short, definite, and tend to be given, and local person pronouns are in addition animate and seem nearly always given in conversations.

Given an effect of weight (correlated with word-length) on the dative alternation (Thompson 1990, 1995; Hawkins 1994: 212–213, 311–313; Collins 1995; Wasow 1997, 2002), then:

Since local person pronouns are all short while nonlocal person NPs are longer on average, the weight or length effect would be in the same direction as the person effect: the shorter would tend to precede the longer. That would bias local-person Recipients toward dative NP position adjacent to the verb and away from dative PP position following the often heavier or longer Themes. Hawkins (1994) argues that apparent effects of topicality or givenness can be better explained in terms of syntactic weight and processing.^a **Would weight be sufficient to explain the apparent harmonic alignment effects we observed?**

^aArnold et al. (2000) and Wasow (2002) argue that weight and informational status have distinct effects on ordering.

There are sufficient corpus data to...

- control for length by excluding examples which could be independently explained by the principle of end weight: restrict the theme in ditransitives to one lexical word (allowing for nonlexical elements such as determiners)
- control for pronominality by restricting the search to personal and demonstrative pronouns
- discount any effect of *NP PRON (**give Mary it*) by excluding examples with personal pronoun themes
- eliminate all non-alternating verbs and expressions^a
- eliminate all (=12) occurrences of the sentential adverbial *to tell you the truth*

^aThis includes all concealed question uses of *tell* and 17 occurrences of *tell you what* as well as ditransitives that do not alternate with *to* datives, such as benefactives.

Under these stringent conditions the verb *give* shows a total absence of pronominal PP recipients for cases with non-pronominal themes, so that any effect of person alignment with Core (NP) or non-Core (PP) cannot be seen. *Give* was therefore eliminated from the count.

For the remaining verbs, first and second persons are still skewed toward the dative NP position compared to the third person:

Person by Dative Argument Type in SWITCHBOARD

	dative NP	dative PP
<hr/> 1 st , 2 nd pronoun	41	5
3 rd pronoun	19	8
<hr/>		

Alternating dative verbs other than *give* with personal and demonstrative pronoun Recipients, less personal pronoun Themes and controlling for end weight.

Fisher's exact test, $p(O \geq E) < 0.05$

Bresnan and Nikitina (2003) conclude that there is indeed an effect of harmonic alignment of person with the syntactic argument type (Core = NP or Noncore = PP) of the recipient. This gradient alignment in English softly reflects the (near-)categorical constraint in Kanuri.

The Verb *Give*

The verb *give* is often taken to be the prototypical dative verb; it is the highest-frequency dative verb in the parsed SWITCHBOARD corpus, constituting 42% of all alternating dative verbs. Yet it does not have the same distribution of syntactic argument types as the pool of other dative verbs: *give* is used with dative NP syntax in 87% of its occurrences in the parsed SWITCHBOARD corpus, compared to 81% for the pool of other dative verbs.

The verb *give* also differs in having a higher percentage of third persons among its pronominal dative arguments:

All pronominal recipients
(animate and inanimate, reflexive and nonreflexive)

	<i>give</i>		other verbs	
1 st , 2 nd person	153		148	
3 rd person	102	(40%)	63	(30%)
totals:	255		211	

This difference is particularly striking with the pronoun *it*: where 95% (n=21) of dative NP occurrences of *it* occur with *give*:

Distribution of recipient *it* for *give* and other verbs

Other verbs	<i>give</i>	Total
1 (5%)	21 (95%)	22 (100%)

For inanimate recipients in general, *give* diverges significantly from other dative verbs:

Distribution of inanimate dative arguments (pronominal and nominal) for *give* and other verbs

	Other verbs	<i>give</i>	Total
Dative NP:	2	25	27
Dative PP:	9	1	10

Fisher's exact test, $p(O \geq E \mid O \leq E) < 0.001$

These differences undoubtedly reflect the greater abstractness of the meaning of *give*, illustrated in examples like these:

- (4) Um, but still, it gives **it** some variety.
but I'm going to give **it** thumbs down.
you know, give **it** a great deal of thought,
and you can add hamburger if you want to give **it** a little more body

All of these examples are paraphrasable with dative PPs (*give some variety to it, give thumbs down to that, give a great deal of thought to it, give a little more body to it*), suggesting that *give* here is not strictly polysemous, but generic or abstract in meaning.

This reflects a parallel to the well-known generalization that high frequency verbs tend to be more polysemous (Kohler 1986, cited in Baayen and Tweedie 1998); here, the highest frequency verb has greater semantic range.

English (stochastic) rankings:^a

FAITH_{other}(R) \gg *STRUCT \gg HARMONY(1,2) \gg FAITH_{give}(R)

The constraints are bunched closely enough together that ranking reversals are frequent under stochastic evaluation. Nevertheless, the mean rank of HARMONY(1,2) dominates that of FAITH_{give}(R), and is dominated by that of FAITH_{other}(R). These relations imply that *give* is more affected by person harmony than is the pool of other dative verbs. Therefore (i) the bias to express 1st, 2nd person recipients as objects should be stronger for *give* than for other alternating verbs.

Similarly, the mean rank of *STRUCT dominates that of FAITH_{give}(R), and is dominated by that of FAITH_{other}(R). This means that *give* is also more affected by economy than is the pool of other dative verbs. Therefore (ii) 3rd recipients should be more often expressed as dative NPs with *give* than with other verbs.

^aThese constraint rankings were derived in preliminary learning simulations with Praat (Boersma and Weenink 2002) from the corpus distributions found by Bresnan and Nikitina (2003). Actual distances between mean rankings are all within one standard deviation.

Both true. (i) the bias to express 1st, 2nd person recipients as objects is stronger for *give* than for other alternating verbs:

1st, 2nd person pronoun recipients:

	<i>give</i>	other verbs
NP	40	41
PP	0	5

Fisher's exact test, $p(O \geq E) < 0.04$

(ii) 3rd person recipients are more often expressed as dative NPs with *give* than with other verbs:

3rd person pronoun recipients:

	<i>give</i>	other verbs
NP	25	19
PP	0	8

Fisher's exact test, $p(O \geq E) < 0.03$

What are we counting? Eliminating non-alternating verbs

Since we are interested in the probability distributions of alternative syntactic expressions of the same content, we must eliminate from our counts all nonalternating examples, which allow only one type of syntactic expression, either NP NP or NP PP in this case.

This turned out to be one of the most interesting parts of the project...

Our criterion of alternation was to look for an alternative expression of a dative construction on any English-speaking site on the WWW, eliminating any that sounded like mistakes or seemed unnatural in their given context.

Case 1: ‘verbs of imparting of force’

“Verbs of instantaneous imparting of force in some manner causing ballistic motion” occur with both dative NP and PP syntax:

(5) Lafleur throws/tosses/flips/slaps/kicks/pokes/flings/blasts him the puck; he shoots, he scores!

In contrast, according to Pinker (1989: 110–111) and Krifka (2001) ao, “verbs of continuous imparting of force in some manner causing accompanied motion” occur only in the dative PP construction:

(6)*I carried/pulled/pushed/schlepped/lifted/lowered/hailed John the box.

Of verbs of continuous imparting of force (*carry, pull, push, schlep*), Pinker (1989: 103) writes:

Though they are *cognitively* construable as resulting in a change of possession (if the object is pushed over to a person with the intent of giving it to him), they are not *linguistically* construable as such because the licensing linguistic rule is not stated broadly enough to apply to them.

Yet we find from an examination of WWW documents that verbs of continuous imparting of force are linguistically construable as depicting changes of possession, and are in current use. The following examples are a selection of our findings.

VERBS OF CONTINUOUS IMPARTING OF FORCE

Karen spoke with Gretchen about the procedure for registering a complaint, and **hand-carried her a form**, but Gretchen never completed it.

2 June 1999, Nampa Controversy Summary — Idaho Library Association,
www.idaholibraries.org/nampa.controversy.summary.htm

As Player A **pushed him the chips**, all hell broke loose at the table.

www.cardplayer.com/?sec=afeature&art_id=165

Nothing like heart burn food. “I have the tums.” Nick joked. He **pulled himself a steaming piece of the pie**. “Thanks for being here.”

www.realityfanfiction.addr.com/storm3.html

“Well...it started like this...” Shinbo explained while Sumomo **dragged him a can of beer** and opened it for him, “We were having dinner together and...”

www.angelfire.com/wa2/bozyby/hold1.html

Therefore, when he got to purgatory, Buddha **lowered him the silver thread of a spider** as his last chance for salvation.

www.inch.com/fujimura/ImofGrmain.htm

Notes.

The context of the **pushed him the chips** example is a tournament poker game: the card players are seated together at a card table and have bet varying amounts by putting poker chips into the pot; this is done by placing some of one's own poker chips onto a common area of the table for the chips of betting players. Whoever wins the pot receives all of the chips, which can be pushed across the table to the winner.

The **dragged him a can of beer** example is from a Chobits fanfiction piece: Shinbo the visitor is sitting on a tatami mat with his host (Hideki). Sumomo is a very small servant robot, small enough to dance on a table, climb up his master's leg and perch on his shoulder. Sumomo serves the visitor beer by dragging a can to him.

Case 2: Verbs of communication

“Verbs of instrument of communication” have uses with both dative NP and PP syntax:

(7) Susan cabled/mailed/faxed/phoned/telegraphed/... Rachel the news

In contrast, “verbs of manner of speaking” are marked as ungrammatical with dative NP syntax (Pinker 1989, Levin 1993, Krifka 2001 ao):

(8)* Susan whispered/yelled/mumbled/barked/muttered... Rachel the news.

Despite the reported ungrammaticality of verbs of manner of speaking with dative NP syntax, we again find representatives of the starred types of examples in current use.

MANNER OF SPEAKING VERBS

Shooting the Urasian a surprised look, she **muttered him a hurried apology** as well before skirting down the hall.

www.geocities.com/cassiopeia_sc/fanfiction/findthemselves.html

“Hi baby.” Wade says as he stretches. You just **mumble him an answer**. You were comfy on that soft leather couch. Besides . . .

www.nsyncbitches.com/thunder/fic/break.htm

The shepherd-dogs, guardians of the flocks, **barked him a welcome**, and the sheep bleated and the lambs pattered round him.

www.litrix.com/raintr/raint009.htm

I think he was poking fun at the charges that Blackmore has been making that he chronically forgets words — he went over to Jon Lord during ‘Smoke’ and seemed to be getting Jon to **yell him the words!!**

www.thehighwaystar.com/reviews/namerica/asbuandr.htm

I still can’t forget their mockery and laughter when they heard my question. Finally a kind few (three to be exact) came forward and **whispered me the answer**.

www.bangla2000.com/mboard/vbulletin.asp?ID=1462

Case 3: *give* NP NP idioms

Davis (1997: 41), among many others, writes of idioms like *give me a headache* and *give him a punch*:

These sentence[s] denote situations in which a participant acquires a headache or receives a punch, but the headache and the punch cannot be said to be transferred from one location to another. Accordingly, the ditransitive one is the only appropriate one in these instances.

Yet these idioms are in fact used with dative PP syntax, as are all possibly idiomatic *give* NP NP collocations we found in the SWITCHBOARD corpus. The following is a representative selection.

GIVE A HEADACHE TO

She found it hard to look at the Sage's form for long. The spells that protected her identity also **gave a headache to anyone trying to determine even her size**, the constant bulging and rippling of her form gave Sarah vertigo.

<http://lair.echidnoyle.org/rpg/log/27.html>

sending a copy to every elector is a nice gesture, but futile, because it is unreadable, guaranteed to **give a headache to anyone who looks hard at the small print**.

(The Guardian (London), September 17, 1992, p. 23; Nexis) [from Levin and Rappaport Hovav 2002]

From the heads, offal and the accumulation of fishy, slimy matter, a stench or smell is diffused over the ship that would **give a headache to the most athletic constitution**.

www.downhomer.com/Webmag/2000/0007/page36.html

Design? Well, unless you take pride in **giving a headache to your visitors** with a flashing background?no.

<http://members.tripod.com/~SailorMoonWorstOfWeb/archive/RunJan01.html>

GIVE A PUNCH TO

When the corpse was bloodless, he got up and grinned to Ethan-vampire, oh so happy. “Oh yesssss!” He **gave a punch to his old mate**. “Let’s find a bar, Ethan.”
vampirecows.com/odd/authors/anne/draculaannebg01.html

“Well, mate, you asked for it.”- And he **gave a punch to the guy** in the middle of his face, splotching ...
www.fortunecity.com/tattooine/tolkien/176/tekrats.htm

All three headed toward Mulan. She dropped kicked the first. Next she **gave a punch to the second man**. He blocked so she grabbed his arm and flipped him.
members.tripod.com/Xi_Xiao/family002.html

She **gave a punch to the evil reporter that had asked the dumb ass question**.
<http://pub56.ezboard.com/ffoxprintsfrm5.showMessage?topicID=10.topic>

GIVE A BREAK TO

PUC gives a break to big users of energy.

www.sacbee.com/content/politics/story/5114554p6120694c.html

“Why can’t we give a break to the people who organise them [the matches]?”

www.rediff.com/cricket/2002/mar/22kapil.htm

Give a break to the overburdened who have no place to rest.

www.csmonitor.com/durable/1999/11/03/p15s1.htm

That’s been the fairest way I can think of to protect the people who do register, and still **give a break to the people who have contributed to the project. . .**

www.qflux.net/wwwboard/messages/1057.html

They wonder what citizenship means if you **give a break to people who are here illegally.**

www.usbc.org/profiles/0202citizenshipmatter.htm

GIVE A HARD TIME TO

The Necromancer has a wide area of spells he can use to either stay out of trouble or **give a hard time to his opponents.**

www.ultimategamers.com/diablo/necromancer/necromancer.html

The silly clowns sometimes **give a hard time to the emperor.**

www.math.ohio-state.edu/~econrad/lang/ln.html

Those who have come before traditionally **give a hard time to those who have just come**

www.mcnny.org/byron/GCAintro.htm

GIVE GRIEF TO

Still, I took it back today and **gave some grief to the assistant** and came out with a better scanner than I had paid for on Tuesday
scribblepad.co.uk/archive/april2002.html

He **gave grief to those taking their time near the rear**, I remember watching him from outside the bus while we stood on the yellow footprints.
pages.sbcglobal.net/e8usmcdi/1stday.html

For further discussion of idioms and usage, see Snyder (2001), Davidse (1998b), and especially Levin and Rappaport Hovav (2002).

Case 4: Verbs of prevention of possession

Even the verbs *cost* and *deny*, which are widely described as occurring only with dative NP syntax, we found to alternate. Contrast these examples from Krifka (2001) and many others ...

- (9) a. The car cost Beth \$5000. $\not\sim$ *The car cost \$5000 to Beth.
b. Ann denied Beth the ice cream. $\not\sim$ *Ann denied the ice cream to Beth.

with ...

COST ... TO

The IRS is unionized, and the union apparently has the fear that outsourcing will **cost jobs to their members.**

www.collectionindustry.com/agencyNews/feedback.cfm?issue=4

Any reduced rate, however, will still **cost jobs to Californians in the teleservices profession**, drive up costs, increase inefficiency, and place an undue restraint on technology.

FIGHT AGAINST PROPOSED PREDICTIVE DIALER BAN IN CALIFORNIA CONTINUES, http://www.ataconnect.org/htdocs/govtrel/news/2000/aug/08-18/ca_ab2721update.htm

He did so thinking it would **cost nothing to the government.**

www.stuttgart.army.mil/community/Citizen/2000/0926/cheapcall.htm

DENY ... TO

Most grievances will involve only a dispute between the grievor and the employer. The employer has underpaid, or disciplined, or **denied a leave to a teacher**; resolution of the grievance does not impact directly on others.

www.bctf.ca/bargain/grievances/background.html

definition of 'abnegate'. *The American Heritage Dictionary of the English Language*, 4th Edition:

1. To give up (rights or a claim, for example); renounce. 2. **To deny (something) to oneself**: The minister abnegated the luxuries of life.

www.bartleby.com/61/83/A0018300.html

After all, who could **deny something to someone so dedicated to the causes of international friendship and collaboration?**

www.eawc.org/7forum/loula_greece.html

Observation: Almost everything alternates!

We observe that *give a headache*, *give a punch*, *give a break*, *give a hard time*, and *give grief* have fixed meanings which are self-evidently constant across the dative NP and dative PP contexts. Likewise, the verbs of deprivation of possession *cost* and *deny* mean the same in the dative PP constructions. The verbs of continuous imparting of force *drag*, *carry*, *push*, *pull*, and *lower* still specify the same distinguishing manners of motion in the dative NP contexts cited as they do in the dative PP context. Likewise, the manner of speaking verbs *mutter*, *mumble*, *bark*, *yell*, *whisper* continue to specify the same characteristic emissions of sound continuously accompanying the speech acts in the dative NP contexts cited as in the dative PP contexts.

The imagined inability of these verbs, idioms, and constructions to be used in one of the two dative constructions has provided central evidential paradigms for the original lexicalist idea that differing lexical semantics dictates the differing syntactic expressions of the dative.^a

Note that none of the starred example types are found in the parsed SWITCHBOARD corpus, but all of them occur in the much larger corpus of web documents.^b *They are not grammatically impossible, just improbable.*

^aOther non-alternating examples proffered by linguists, including some of Oehrle's original examples (*Interviewing Nixon gave Mailer a book, That movie gave me the creeps*) have been overturned by Levin and Rappaport Hovav (2002) and by Snyder (2001).

^bThe WWW is estimated to contain 47,000,000,000 words of English as of February 2000 (Baayen 2003, citing Grefenstette 2000).

What do our linguistic intuitions correspond to?

Our own linguistic intuitions agree with those of the linguists cited (Oehrle, Pinker, Krifka, Levin, et al.), in that we perceive the contrasts in the constructed examples. At the same time we judge the web examples given above to be grammatically possible.^a *What then do our intuitions correspond to?*

^aThus we do not classify our usage data given above with the sporadic adult errors of the types recorded by Gropen et al. (1989: 251).

Although both dative NP and dative PP constructions can be used to express transfers of possession, there is a strong skewing of the syntax of alternating dative verbs toward the dative NP construction in conversational English usage.

Alternating dative verbs in the parsed SWITCHBOARD corpus

	NP NP	NP PP _{to}	total:	
<i>give</i>	226	35	261	<i>give</i> : NP NP = 87%
other verbs	291	69	360	other v's: NP NP = 81%
total:	517	104	621	

give = 42%

of all instances

of dative verbs

If we take *give* to be prototypical of the class of transfer of possession verbs, then dative NP syntax is by far the preferred syntactic expression for this class of verbs.

Common sense:

Now transfers of possession may occur in many ways. In sports like hockey, possession of the puck can take place by means of a number of sudden actions in play, and there is much varied discourse about it.

In the world more generally, or at least in present-day American life, if a person accompanies and holds, clings to, or otherwise stays in contact with a possession, it seems to us less likely that a transfer of possession is going on, and in many cases there is probably much less talk about it than about possession of the ball or puck or missile of choice in sports.

Carrying people things as a transfer of possession is surely more common in situations where walking is a major mode of transportation. The previously given web examples are from present-day English, but many examples of *carry* with dative NP can be found on the web in depictions of life in rural areas, often predating the rise of the automobile.

Pre-automotive uses of ditransitive *carry*

Aurie and Pearl went to Humboldt that afternoon. I went back to Mrs. Kate's to **carry her some mustard salad.**

(www.rootsweb.com/~tngibson/Bios/mayfield1894.htm
[from Fidelia Mayfield Diary 1892])

“This evening she was late starting dinner because her second granddaughter has a cold, and she had to **carry her some pepper sauce for her cough.**”

(www.fictionwise.com/ebooks/eBook842.htm
[from a novel set in the Civil War period])

Polly had been sick and Sara wanted to **carry her some food.**

(www.lrwma.com/happenings/HAPPENINGS1.htm
[from Happenings around Leatherwood Mountain in the Early 1900s])

“Go, my dear, and see how thy grandmamma does, for I hear she has been very ill; **carry her a custard and this little pot of butter.**”

(www.azstarnet.com/reading/reading22.html
[Little Red Riding Hood])

For the same reasons, pushing is probably less likely to be thought of as a mode of transferring possession than carrying, with pulling perhaps less so, and lowering and dragging the least. *Perhaps our grammaticality judgments of the contrasting pairs of examples are being systematically biased by the probability of similar descriptions of the event types depicted by the examples.*

In summary, our hypothesis is this. We can use both dative NP and dative PP syntax to express transfers of possession, but the prototypical uses of giving are heavily biased toward the dative NP construction. Now transfers of possession are more likely to be described in the discourse of sports where motional verbs of instantaneous imparting of force (*throw, toss, kick, flip, slap, fling, ...*) are heavily used than in discourse about dragging, lowering, pushing, pulling, and even carrying these days. Hence, we are more likely to judge verbs in the *throw* class as acceptable with dative NP syntax than verbs in the *drag* class.

We can pursue a similar line of thinking about the verbs of communication.

Both types of communication verbs ('verbs of means of communication' and 'verbs of manner of speaking') are grammatically possible with alternative dative syntax, yet with the first type dative NP syntax seems to be preferred in grammaticality judgments. *Again we may ask, what do these intuitions correspond to?*

More common sense:

Notice that activities of cabling, emailing, faxing, phoning, telegraphing, and the like almost always involve communication—that is transfers of the possession of information. In contrast, the activities of whispering, yelling, mumbling, barking, muttering, and the like are more often, to varying degrees, noncommunicative. When used intransitively and with certain directional phrases, the manner-of-speaking verbs “describe the physical characteristics of a sound” rather than “an intended act of communication by speech” (Zwicky 1971: 225, 226):

- (10) a. He whispered/yelled/mumbled/barked/muttered (but he wasn't saying anything).
- b. He whispered/yelled/mumbled/barked/muttered at us/in our direction.

In fact, a `tgrep` query of the SWITCHBOARD corpus yields 17 occurrences of these five manner of speaking verbs, of which 12 are noncommunicative, 3 are semi-communicative (like “yelling for help”, which may not successfully communicate because an interlocutor or even an audience is not necessarily present), and only 2 have complements which denote “the products of a speech act”.

Granted that the uses of manner of speaking verbs are probably disproportionately describing noncommunicative activities, why should their communicative uses favor the dative PP over the dative NP? Zwicky (1971: 226) observes that the directional *at*, *toward* phrases that modify manner of speaking verbs are in complementary distribution with the *to* PPs.

(11) He whispered/yelled/mumbled/barked/muttered at us/in our direction (*to John).

This fact suggests that **these verbs have a variant of the allative type lexical semantics**; here the PP denotes the orientation of the actor toward the goal rather than a path of movement. With these verbs the theme argument is usually a noncommunicative sound and less often the product of a speech act. The same PP syntax expresses both situations.

These observations are only suggestive, but they motivate our conjecture that *grammaticality judgments of contrasting pairs of examples may be systematically biased by the probability of similar descriptions of the event types depicted by the examples.*

Note that it is the probability of the *descriptions* of event types, not the events themselves, that we conjecture to be important in judging grammaticality. We have no idea whether yelling or muttering events are more or less probable than emailing or faxing events, but the proportions of yellings or mutterings that are described as communicative transfers of possession of information are much smaller, we suspect, than the proportions of emailings or faxings.

Thus, for communication verbs our hypothesis can be summarized in this way. We can use both dative NP and dative PP syntax to express communications, viewed as transfers of possession of information, but the prototypical dative verb of communication, *tell*, is heavily biased toward the dative NP construction. Now communication is more likely to be described in discourse about faxing, emailing, and other events involving means of communication than in discourse about whispering, yelling, mumbling, barking, and muttering. Hence, we are more likely to judge verbs in the *mutter* class as unacceptable with dative NP syntax than verbs in the *fax* class simply because there are far fewer instances of mutterings, mumblings, and yellings that are likely to be described as instances of tellings.

Conclusion and Prospects

We have seen that a lexicalist theory of generative syntax like LFG in its pure, ‘classical’ form has begun to show wear and tear in the face of new data from typology and quantitative studies of usage. This I believe to be true for all current generative theories of grammar in their ‘pure’ forms.

But LFG is also extraordinarily flexible and provides a useful and productive representational basis for the newer probabilistic theories.

One open problem for our future research is to discover how lexical variation in harmony profiles and other probability distributions be learned or derived from independent properties of the input.

Another problem is to explain theoretically why and how grammaticality judgments diverge from actual usage patterns, in terms of the varying constraints mobilized, for example.