

The Dative Illusion as an Argument for Lexicalist Argument Structure

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1. Introduction: I provide evidence from two experiments for a new interpretive illusion that constitutes novel evidence for a lexicalist theory of argument structure. A lexicalist theory for my purposes is any theory where arguments’ syntactic and semantic properties are specified to any extent in a lexical entry.¹ In contrast, a purely neo-constructionist theory² would posit that DPs’ thematic roles are interpreted differently depending entirely on where they occur relative to functional heads in an extended *v*P. A constructionist theory³ would have DPs receive thematic roles based on where they occur in a construction, which is a non-compositional mapping between form and meaning.

2. Types of Dative Verbs: I examine these approaches to argument structure via dative verbs, which differ with regards to the goal arguments they can take in different syntactic frames:⁴

- (1) a. John sent a package to Bill (prepositional dative (PD))
- b. John sent Bill a package (double object (DO) dative)
- c. John sent a package to LA. / d. #John sent LA a package.
- e. #John gave a package to LA. / f. #John gave LA a package.

The contrast between (1a/b) and (1c/d) shows that the DO but not the PD construction requires that the recipient be a potential possessor of the theme—violated in (1d), but satisfied in (1b). In contrast to (1c/d)’s *send*, (1e/f) involve *give*, which is incompatible with non-possessor goals regardless of construction. *Give*-type verbs, then, only have caused possession meanings, while *send*-type verbs have a caused motion reading available in the PD frame, explaining (1c) vs. (1e).

3. Expt. 1: Verb type differences should affect ratings of canonical sentences with non-possessor goals (2). Expt. 1 examined whether they would also appear for sentences with goal extraction (3), as the complexity of processing these sentences⁵ might be enough to obscure the nuanced pattern of facts shown in (1).

(2) Jane { gave / sent } { the ornate room a dinner / a dinner to the ornate room }.

(3) The ornate room that Jane { gave / sent } a dinner { - / to } is on the top floor of the hotel.

48 MTurk subjects rated the plausibility of sentences like (2) and (3) from 1 (low) to 7 (high). The factors were verb-type (*give*-type/*send*-type), construction (DO/PD), and extraction (e.g., (2)/(3)).

3.1 Expt. 1 Results: There was a significant interaction between goal extraction, construction, and

	Goal Extracted		Goal Not Extracted		
	<i>Give</i> -type	<i>Send</i> -type	<i>Give</i> -type	<i>Send</i> -type	
DO	2.60	4.25	1.68	2.57	← Extr. > Not Extr.
PD	2.41	4.54	1.92	4.32	← Extr. = Not Extr.

Table 1: Expt. 1 Results

verb type ($F_1 = 7.62, p < 0.05; F_2 = 6.44, p < 0.05$): ratings for DO sentences with *send*-type verbs improved in goal extracted sentences compared to goal not extracted sentences, reliably more than for *give*-type verbs and PD *send*-type verbs. This is the Dative Illusion—when goals are extracted, subjects allow *send*-type verbs in the DO structure to license normally unlicensed non-possessor goals. (In goal not extracted cases, ratings for *send*-type verbs show large improvements from DO to PD sentences, reliably more than for *give*-type verbs ($F_1 = 25.23, p < 0.05; F_2 = 27.39, p < 0.05$), due to these cases licensing non-possessors.)

In principle, goal extracted sentences could be corrected by inserting *to* after the theme, leading to the PD frame and higher ratings; correcting goal not extracted cases would be harder, requiring inserting *to* and swapping the objects’ orders. Expt. 2 tested this correction-based approach to the Dative Illusion.

4. Expt. 2: In expt. 2, 64 MTurk subjects were either instructed to ignore missing words and typos in ratings (the “lenient” condition), or else to not do so (the “strict” condition). 10 control items (5 missing prepositions, 5 with typos) were added; ratings depending on instruction type would provide evidence of conscious correction of errors. (All verbs in expt. 2 were *send*-type.)

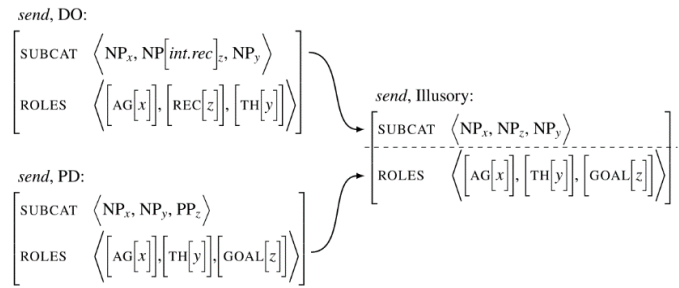
4.1 Expt. 2 Results: There was an interaction of construction and extraction on experimental items

	DO		PD		Missing Preposition	Typo
	Extr.	Not. Extr.	Extr.	Not Extr.		
Strict	4.23	2.71	4.81	4.65	4.47	4.94
Lenient	4.46	2.73	5.20	4.74	5.42	6.14

Table 2: Expt. 2 Results

($F_1 = 60.26, p < 0.05$; $F_2 = 27.36, p < 0.05$), but no effects of instruction type that would indicate a correction-based strategy. Ratings improved more with extraction in the DO than in the PD condition, which replicates the Dative Illusion. However, there was an effect of instruction type on the controls ($F_1 = 36.86, p < 0.05$; $F_2 = 28.61, p < 0.05$): subjects rated controls higher with lenient than with strict instructions.

5. Discussion: Controls but not dative verb sentences showed an effect of instruction type, supporting an explanation of the Dative Illusion based on argument structure rather than correction. In particular, the Dative Illusion occurs when the indirect object could be mapped to a plausible semantic role, which is only possible for *send*- but not *give*-type verbs. This is easily accounted for in a lexicalist model of argument structure, illustrated here with HPSG.⁶ Illusory *send* blends the syntactic selection properties of DO *send* and the thematic role selection properties of PD *send*; *give*-type verbs retain a RECIPIENT role in the PD form, so there is no source for an illusory GOAL role. Thus, the Dative Illusion is a case when syntax and semantics are independently well-formed, but the mapping between them is not. This shows us properties unique to the mapping between syntax and semantics that otherwise might be attributed to either syntax or semantics taken separately.



A constructionist theory has difficulty accounting for both the verb type differences and the illusion. Since verbs can have caused possession meanings in a caused motion construction, a constructionist approach posits a possible metaphorical mapping between the two: transfer of location as transfer of possession.³ *Give*-type verbs can occur in the caused motion construction, but only if they undergo this metaphorical mapping—we must force this mapping for *give*-type verbs (though not for *send*-type verbs) even in cases where a plausible caused motion meaning should be derivable (e.g., #*John handed a book to the table*). We must stipulate that some verbs must undergo this mapping, and some may or may not—appealing to the verbs’ lexical entries. An account of the illusion would stipulate not only this, but also that the caused possession construction can map to a caused motion meaning, but only in the goal extraction cases. Achieving this restriction is not straightforward.

Neo-constructionist theories, being more flexible, could explain the verb type facts and the Dative Illusion, though most easily with some appeal to lexicalism. One neo-constructionist account for the illusion occurring only with *send*- but not *give*-type verbs could involve saying that *give*-type verbs may only select a possessional *to*.⁶ Subjects could reinsert non-possessional *to* for *send*- but not *give*-type verbs. However, this fails to explain why reinserting prepositions is sensitive to instructions for controls but not experimental items, if both are repaired by the same process. A more promising neo-constructionist approach is to posit that the restriction is a presupposition of *give*-type verbs that *send*-type verbs do not share. However, this appeals to a presupposition in the lexical entry of *give*, giving us an at least partially lexicalist approach.

[1] Müller & Wechsler (2014). *Theoretical Linguistics* 40. [2] Harley (2011). In *Oxford Handbook of Linguistic Minimalism*. [3] Goldberg (1995). *Constructions*. [4] Rappaport Hovav & Levin (2007). *Journal of Linguistics* 44. [5] Lowder & Gordon (2016). *Language, Cognition and Neuroscience* 31. [6] Wechsler (1995). *The Semantic Basis of Argument Structure*.