Alternating the Non-Alternate: A Probabilistic Approach to Dative Alternation

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Hye-Won Choi. 2005. Alternating the Non-Alternate. *Language and Information 9.1*, 51-68. This paper proposes an informational approach to the dative alternation in English following up on the Stochastic Optimality-Theoretic (OT) model by Bresnan and Nikitina (2003). While Bresnan and Nikitina's stochastic OT model resolves the crucial problem of 'gradience' unavoidably implicated in variation phenomena by applying the notion of probability to linguistic problems, it fails to account for the details of the unusually alternating examples, which normally would not alternate. More importantly, it fails to capture the focus effect involved in the alternation. This paper has worked out all the problematic examples by modifying the Bresnan and Nikitina model. This new account captures not only the unusual behavior of the less-alternating verbs and idioms but also the special focus effect of the common alternating verbs. (**Ewha Womans University**)

Key words: dative alternation, monosemy approach, polysemy approach, information structure, focus, heaviness, definiteness, Stochastic Optimality Theory, probabilistic linguistics

1. Semantic Approaches to Dative Alternation

The question of what drives dative alternation has recently gained interest again, especially from the semantic camp (Gropen et al., 1989; Pinker, 1989; Harley, 1996; Harley, 2002; Krifka, 2001; Krifka, 2003) Semantic approaches, referred to as the 'polysemy approach' by Levin and Rappaport Hovav (2002) and Levin (2004), have attempted to explain the alternation on the assumption that dative verbs have two distinct meanings, each giving rise to its own syntactic realization. This contrasts with the 'monosemy approach,' which assumes that dative verbs have a single meaning, with the two variants not differing in (truth-conditional) meaning.

The semantic approaches have tried to map each of a number of fine-grained semantic classes of dative verbs onto a unique syntax (Gropen et al., 1989; Pinker, 1989; Goldberg, 1995; Harley, 1996; Harley, 2002; Krifka, 2001; Krifka, 2003) A shared idea among these approaches is that dative verbs that have possessive semantics as in (1a) are uniquely associated with the double object variant [V NP NP], while datives with allative semantics as in (1b) are associated with the *to*-variant [V NP PP].

(1) a. 'x cause y to have z' (possessive) $\Rightarrow$ NP_x V NP_y NP_z

b. 'x cause z to be at y' (allative) $\Rightarrow$ NP_x V NP_z $[to\ NP_y]_{PP}$

According to these approaches, the double object variant and the *to*-variant are not alternative expressions of the same meaning, but of different meanings. Hence, there is no true dative alternation on this view (Bresnan and Nikitina, 2003, 3).

It has been shown, however, that central arguments that have been used to support the semantic accounts for the choice of dative constructions are not well founded empirically (Levin and Rappaport Hovav, 2002; Levin, 2004; Bresnan and Nikitina, 2003); the frequently-reported intuitive contrasts between the two constructions do not actually hold. One of the much-discussed pieces of evidence is the difference in inference patterns; that is, the double object variant entails the 'successful transfer of possession,' while the *to*-variant does not.

(2) a. Mary taught John linguistics.

b. Mary taught linguistics to John. (Green, 1974, 157)

Green (1974, 157) first observed that sentence (2a) "implies or entails that John learned linguistics," while (2b) "merely states that he was a student of linguistics, and is neutral as to whether his teacher Mary had any success in her efforts." Yet, the inference of successful transfer for the double object variant in (2a) is easily canceled. See examples in (3).

(3) a. I taught them English for a year, but they don't seem to have learned a thing. (Levin, 2004, 50)

b. I threw John the ball, but it didn't reach him because of the strong wind. (Baker, 1997, 89)

c. I read him the figures, but when I looked up, he was gone. (Oehrle, 1977, 206)

Levin and Rappaport Hovav (2002) argue that the reported entailments of 'completion' or 'affectedness' accompanying the double object construction such as in (2a) are in fact defeasible implicatures, not entailments.

On the other hand, the successful transfer appears to be entailed for the following example.

(4) # She gave him the money, but he never got it. (contradiction)

Levin (2004, 50–52) notes that "the successful transfer is actually a property of an individual verb–specifically, its lexicalized meaning–and not of (a verb in) a variant." That is, verbs such as *give, lend, loan, rent, sell,* and *serve* do entail a successful transfer of possession, while activity verbs such as *read, throw,* and *teach* do not lexicalize a successful transfer in either variant. Therefore, the defeasible invited inference that accompanied the double object variant in (2a) is due to a Gricean implicature, rather than an entailment.

In addition to the inference pattern, idiom facts have also been used to support the idea that the distinct semantics of the variants dictate the different syntactic structures. For example, Harley (2002, 46) assumes that all fixed pieces of an idiom must form a syntactic constituent underlyingly: if an idiom has one fixed NP constituent, this NP must be the sister of the head of the decomposed predicate P' (i.e., 'have' in (1a) and 'be at' in (1b)). Therefore, she predicts the idiom asymmetries such that an idiom with a fixed theme (i.e. z in (1a)) should only appear in the double object variant, whereas an idiom with a fixed goal (i.e. y in (1b)) should only appear in the *to*-variant. Similarly, Krifka (2001) argues that the idiom *give x a headache,* for instance, occurs only in the double object variant because giving someone a headache is causing him or her to have a headache, not transferring the headache from one location to another.

(5)   Idioms with Fixed Theme (Levin, 2004, (13))

       read x the riot act; lend x an ear; show x the ropes; promise x the moon; give x the cold shoulder; give x the creeps; give x the boot; give x a headache

(6)   Idioms with Fixed Goal (Levin, 2004, (14))

       send x to the showers; take x to the cleaners; push x to the edge; carry x to extremes; send x to the devil; throw x to the wolves

As pointed out by Levin (2004, 58) and Bresnan and Nikitina (2003), however, the idiom argument is problematic too. First, idioms with fixed theme are found in the *to*-variant, as shown in (7). Take (7b) as an example. According to Harley (2002) *give x a headache* is an idiom with a fixed theme (i.e. a headache), and therefore it is supposed to appear only in the double object construction. Yet, it does appear in the *to*-variant.

(7) a. Even the Argentine president, known for his weakness for women, was **giving the cold shoulder to the flamboyant American singer.** (Levin, 2004, 16, COBUILD)

    b. 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/pages36.html> (Bresnan and Nikitina, 2003, 8–9)

Furthermore, there are fixed theme idioms found only in the *to*-variant too, which are shown in (8).

(8)   Idioms with Fixed Theme found only in *to*-variant (Richards, 2001)

give rise to x; give way to x; give birth to x; give voice to x; bring word to x

Again, Harley would predict these idioms, having fixed theme, would appear only in the double object construction; on the contrary, the idioms in (8) appear exclusively in the *to*-variant. Therefore, the idiom facts do not really support the semantics-based approach, either.

Another kind of evidence in favor of the meaning-form isomorphism for each variant comes from the semantic restrictions, which allow verbs such as *throw* and *fax* in (9) to alternate, while prohibiting the verbs in (10) and (11) from alternating. See examples below (Pinker, 1989; Levin, 1993; Krifka, 2001; Bresnan and Nikitina, 2003)

(9) a. I threw the box to John. ∼ I threw John the box.

b. Ann faxed the news to Beth. ∼ Ann faxed Beth the news.

It has been widely accepted that the verbs like *lower* and *yell* in (10) cannot be used in the double object variant, and the ones like *deny* and *cost* in (11), not in the *to*-variant.

(10) a. I lowered the box to John. ∼ *I lowered John the box.

b. Ann yelled the news to Beth. ∼ *Ann yelled Beth the news.

(11) a. *Ann denied the icecream to Beth. ∼ Ann denied Beth the icecream.

b. *The car cost five thousand dollars to Beth. ∼ The car cost Beth five thousand dollars.

Krifka (2001, 2003) tries to explain the differences in alternatability in terms of semantic distinctions of the verbs. He argues that the meaning of *throw* or of *fax* specifies only the causing event or the initial stage of transfer, and thus it is compatible with either construction, as illustrated in (9). In contrast, the meaning of *lower* or of *yell* specifies both the causing event and the movement event due to a "homomorphism" between the two events, and therefore only the PP construction fits, as in (10), since it guarantees the movement action as well. Finally, verbs of prevention of possession such as *deny* and *cost* shown in (11) do not correspond to any movement even in possession space and thus cannot be used in the prepositional construction.

Contrary to the above observation, the verbs described as warranting the *to*-variant only, e.g., *lower* and *yell*, are in fact used in the double object construction; the ones that are supposed to require the double object variant only, e.g., *deny* and *cost*, are also used in the *to*-variant. See examples in (12) and (13) (Bresnan and Nikitina, 2003).

(12) a. 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> (Bresnan and Nikitina, 2003, 6)

   b. Karen spoke with Gretchen about the procedure for registering a complaint, and **hand-carried her a form**, but Gretchen never completed it. <www.idaholibraries.org/nampa.controversy.summary.htm> (Bresnan and Nikitina, 2003, 6)

   c. 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> (Bresnan and Nikitina, 2003, 8)

   d. 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> (Bresnan and Nikitina, 2003, 7)

(13) a. 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> (Bresnan and Nikitina, 2003, 11)

   b. 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.betf.ca/bargain/grievances/backgrounder.html> (Bresnan and Nikitina, 2003, 11)

Bresnan and Nikitina (2003, 12) note that a closer inspection rejects "[t]he imagined inability of these verbs . . . to be used in one of the two dative constructions" and that dative alternation exists for a wider range of verbs and idioms than previously recognized. Yet, it is true that people seem to share the intuitive contrast between the variants such that the double object construction is for transfer of possession while the PP construction is for movement or change of location. Bresnan and Nikitina suggest that the intuitive judgments are biased by the probability of similar descriptions of the event types depicted by the examples. For example, transfer of possession is more likely to be described in the discourse of sports where 'verbs of instantaneous imparting of force' such as *throw, toss, kick, flip, slap, fling,* etc. are mostly used than in the discourse of lowering, dragging, pushing, pulling, etc. Likewise, transfer of possession (of information) is more likely to be delivered by verbs of communication (*fax, email, cable, phone*) than by manner of communication verbs (*yell, mumble, whisper, bark*). They argue that the reason that such

examples as (12) are rare is not because they are grammatically impossible, but because they are just "pragmatically improbable."

To summarize, the core arguments that are used to support the semantic polysemous approaches have been shown not to hold. In other words, each variant of the dative construction is not a unique syntactic realization of a distinct semantic meaning. Then, given that there are two realizations available for the same proposition, what would be the reason for choosing one over the other? In fact, dative alternation has been attributed to contextual or processing factors such as information structure, animacy, definiteness, and heaviness (Givón, 1984; Thompson, 1990; Thompson, 1995; Hawkins, 1994; Collins, 1995; Arnold et al., 2000; Levin and Rappaport Hovav, 2002; Wasow, 2002; Bresnan and Nikitina, 2003).[1] Given that the arguments for semantic approaches are not really valid, I will pursue an informational approach while trying to incorporate the intuition from the semantic approach. In particular, I will use the framework of Optimality Theory, especially its probabilistic variant, Stochastic Optimality Theory (Boersma and Hayes, 2001). In what follows, I will first review Bresnan and Nikitina (2003)'s Stochastic OT account of dative alternation and propose a modified analysis trying to fill in the gaps of their model.

2. Dative Alternation in Stochastic Optimality Theory

Bresnan and Nikitina (2003) argue that the reported intuitive contrasts between the two dative variants are in fact a matter of judgments of pragmatic probabilities and that the decision on the choice of dative constructions is in fact 'gradient,' not categorical as has been recognized. They provide an informational model of dative alternation using the framework of Stochastic Optimality Theory and present results from a corpus study showing that there is a harmonic alignment of person with the syntactic argument type of the dative recipient in the parsed SWITCHBOARD corpus of spoken English.[2]

A simple OT model of the dative alternation can be based on two conflicting constraints on syntactic structure, as in (14), a faithfulness constraint of a morphosyntactic kind requiring distinct marking of the recipient role (FAITH(REC)) and a purely syntactic economy constraint penalizing syntactic structure (*STRUCT). A double object sentence will violate FAITH(REC) since the recipient role is not marked syntactically (or morphologically) distinct from the theme role. On the other hand, a *to*-variant will violate *STRUCT because a syntactic structure PP is produced there.

   (14)   Constraints:

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

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[1] Levin (2004) notes that when the informational factors do not play a role, the successful transfer implicature is accommodated by expressing the recipient as possessor, i.e. in the double object variant.

[2] While Bresnan and Nikitina focus on the person/argument alignment in particular, we do not discuss the phenomenon in this paper.

        b. *STRUCT: Avoid syntactic structure (here, *PP)

In OT with stochastic evaluation, the variable rankings of *STRUCT and FAITH (REC) produced by noisy evaluation will lead to constraint reversals at a frequency that is a function of the distance between the constraint 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.

    Now it can be assumed that in English constraint FAITH(REC) and constraint *STRUCT are placed so close together that there are frequent reversals in the ranking between them. Thus, we see variable outputs, i.e., dative alternation.

(15)

T1		*STRUCT	FAITH(REC)
☞	a. taught John linguistics		*
	b. taught linguistics to John	*	

(16)

T2		FAITH(REC)	*STRUCT
	a. taught John linguistics	*	
☞	b. taught linguistics to John		*

The double object candidate (a) violates FAITH(REC), while the PP candidate (b) violates *STRUCT (each violation is marked by an asterisk * in the tableau). Due to the ranking reversal, however, candidate (a) is the winning (namely, optimal) output in (15), whereas candidate (b) is optimal in (16). Note that in this approach, the alternating variants are the outputs of the same input, i.e., the same semantic content; as discussed in section 1, none of the arguments in favor of the semantic distinction of the two variants have been proven to obtain.

    As seen earlier, although such verbs as *give* allow dative alternation freely, other verbs such as *lower* and *yell* strongly prefer the prepositional construction, while verbs like *deny* and *cost*, the double object construction. These lexical differences among distinct groups of verbs can be captured by the constraint FAITH(REC) for each group of verbs and its relative distance from *STRUCT. For example, the almost categorical behavior of the verbs like *yell*, namely, their strong preference for the PP construction, will be captured in such a way that the FAITH(REC) for this group of verbs, i.e., $\text{FAITH}_{yell}(\text{REC})$, is ranked higher and quite distant from *STRUCT so that the chances of the ranking reversal are pretty low. By contrast, the strong preference for the double object construction by such verbs as *cost* will be accounted for by the much lower (and distant) ranking of $\text{FAITH}_{cost}(\text{REC})$ than *STRUCT. This is how the "semantic" restrictions on different lexical groups of verbs–discussed in section 1–are encoded in this OT approach. Like this, with the notion of relative distance on the continuous ranking scale, the OT grammar with stochastic evaluation can generate both categorical and variable outputs. Categorical outputs arise when the crucially ranked constraints are distant, whereas variable outputs occur when the constraints are close together. The relative ranking of FAITH(REC) for each lexical group of verbs is given in (17).[3]

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[3] Given that the double object variant is much favored with the verb *give*, $\text{FAITH}_{give}(\text{REC})$

(17) Lexical Differences Encoded in Constraint Ranking:
$F_{Go}(R) \gg F_{yell}(R) \gg F_{fax}(R) \gg$ *STRUCT $\gg F_{give}(R) \gg F_{cost}(R), F_{Th}(R)$

However, as mentioned in the previous section, dative alternation is not sim-
ply determined by the interaction between FAITH(REC) and *STRUCT. In other
words, dative alternation is not a free variation, or "linguistically unpredictable
alternation" (Bresnan and Nikitina, 2003, 19). There are linguistic factors that
favor one structure over the other, such as information structure, animacy, defi-
niteness, heaviness, etc. Bresnan and Nikitina (2003, 23, 27) proposes an informa-
tional constraint 'Double-Object Primacy' (OO-PRIMACY), which "encapsulate[s]
the multidimensional family of constraint subhierarchies," and the person-argument
alignment constraint HARMONY(1,2).

(18) Double-Object Primacy (OO-PRIMACY):
When both are objects, the receiver/possessor (strictly) dominates the
entity on hierarchies of informational prominence, and the entity (strictly)
dominates the receiver/possessor on the reversed hierarchies:
Given ≻ Accessible ≻ New; Definite ≻ Indefinite; Pronoun ≻ Noun;
Shorter ≻ Longer

(19) Core/Noncore Harmony for Person:
HARMONY(1,2): *NP_{Noun} & *$PP_{1,2Person}$

The constraint OO-PRIMACY is based on the observation on "Receiver/Entity
Differentiation" by Collins (1995, 47) that when there are two NP objects, their
properties are sharply differentiated and polarized on scales of discourse accessibil-
ity, definiteness, pronounhood, and word length: "In the indirect object construc-
tion the communicative differentiation between receivers and entities is acute. . .
. In the prepositional construction, by contrast, the differences in communicative
status between receivers and entities are milder." In short, this constraint states
that the receiver must be informationally more prominent than the entity in the
double object construction. Although not specified in Bresnan and Nikitina, this
constraint does not apply to (or is vacuously satisfied by) the PP construction.
The constraint HARMONY(1,2), on the other hand, dictates that if the receiver
is a local pronoun (namely, a 1st or 2nd person pronoun), it must be realized as
the first (indirect) object instead of a PP. These constraints are ranked with the
constraints in (17) as below.

(20) Constraint Ranking (Modified from Bresnan and Nikitina (2003, 31)):
OO-PRIMACY, $F_{Go}(R) \gg F_{yell}(R) \gg$ HARMONY(1,2) $\gg F_{fax}(R) \gg$
*STRUCT $\gg F_{give}(R) \gg F_{cost}(R), F_{Th}(R)$

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is ranked slightly lower than *STRUCT although they mostly overlap. The ranking of
$FAITH_{give}$(REC) was given to be higher than that of *STRUCT in Bresnan and Nikitina (2003).
Also, $FAITH_{Th}$(REC) (for idiom expressions with fixed theme), $FAITH_{Go}$(REC) (for idioms with
fixed goal), and $FAITH_{cost}$(REC) (for such verbs as *cost* and *deny*) are added, which are not
covered in Bresnan and Nikitina. I have omitted $FAITH_{latinate}$(REC) for space considerations
because we do not discuss latinate verbs–which do not allow double object construction–in this
paper.

In brief, the basic idea behind this analysis is that "what drives dative alternation are linguistic pressures to sharply differentiate double objects on informational hierarchies [i.e. OO-PRIMACY], to faithfully mark the semantic role of recipient [i.e. FAITH(REC)], and to economize on syntactic structure [i.e. *STRUCT]" (Bresnan and Nikitina, 2003, 28). Having the grammar for the dative alternation set up now, we will review the "unusually" alternating examples, some of which are presented earlier, and see if this OT model can account for them.

Let us first see examples with 'heavy' recipients. The examples in (21), containing idioms with fixed theme, are supposed to take the double object construction. Also, verbs like *cost* and *deny* in (22) are the ones strongly preferred in the double object constraint; however, they are used in the PP construction here. The obvious factor that makes the PP construction possible in these examples is the weight or heaviness of the indirect object.

(21) a. Oscar will **give the boot to any employee that shows up late.** (Larson, 1988, 341)

 b. [S]ending 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*, Sep. 17, 1992, cited from Levin and Rappaport Hovav (2002))

 c. 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> (Bresnan and Nikitina, 2003, 10)

 d. Those who have come before traditionally **give a hard time to those who have just come.** <www.mcny.org/byron/GCAintro.htm> (Bresnan and Nikitina, 2003, 10)

(22) a. Any reduced rate, however, will still **cost jobs to Californians in the tele-services profession**, drive up costs, increase inefficiency, and place an undue restraint on technology. <www.ataconnect.org/htdocs/govtrel/news/2000/aug/08-18/ ca_ab2721update.htm> (Bresnan and Nikitina, 2003, 11)

 b. 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> (Bresnan and Nikitina, 2003, 11)

As a matter of fact, heaviness effect has been noted widely (Arnold et al., 2000; Davidse, 1996; Erteschik-Shir, 1979; Givón, 1984; Levin, 2004; Polinsky, 1996; Ransom, 1979; Snyder, 2003; Thompson, 1990; Thompson, 1995; Wasow, 1997), and is not only shown with the above kind of verbs but also with regular alternating verbs, as illustrated below. The heavy recipient/goal in (23c) makes the sentence felicitous, which would otherwise not be, as attested in (23b).

(23) a. Nixon's behavior **gave Mailer an idea for a book.**

   b. #Nixon's behavior **gave an idea for a book to Mailer.**

   c. Nixon's behavior **gave an idea for a book to every journalist living in New York City in the 1970s.** (Snyder, 2003, 35)

The heaviness effect can be accounted for in the Bresnan and Nikitina's model fairly easily, especially by the high ranking of the OO-PRIMACY constraint. Let us look at example (23c) first, whose evaluation is illustrated in Tableau 3 below.

(24) Heaviness Effect in Alternating Verbs

T3		OO-P. .	*STR	$F_{give}(R)$
	a. give every journalist. . an idea. .	*		*
☞	b. give an idea. .to every journalist. .		*	

Without OO-PRIMACY, the double object variant candidate (a) and the *to*-variant candidate (b) would have come out as outputs almost equally–with the double NP output slightly more than the PP output–due to the close ranking distance between *STRUCT and FAITH$_{give}$(REC). However, the informational constraint OO-PRIMACY, which directs that 'the the shorter should come before the longer (Shorter ≻ Longer),' is ranked much higher than the other two constraints. Therefore, when the recipient/goal phrase is heavy, candidate (b) in the PP construction is much more likely to come out as the optimal output. On the other hand, for the example like (23b), constraint OO-PRIMACY would equally be satisfied by both candidates (a) and (b) because the theme and the recipient/goal arguments do not considerably differ in length.

Compare this with an idiom with fixed theme. Let's take (21b) as an example. See Tableau 4 below.

(25) Heaviness Effect in Idioms with Fixed Theme

T4		OO-P. .	*STR	. .F$_{Th}$(R)
	a. give anyone who . . a headache	*		*
☞	b. give a headache to anyone who . .		*	

Idioms with fixed theme are not supposed to be used in the double object construction. This is guaranteed by the lower ranking of FAITH$_{Th}$(REC) than and the long distance from *STRUCT. However, even in this unlikely case, the higher ranking of OO-PRIMACY over *STRUCT can reverse the situation. Thus, the *to*-variant (b) can emerge as the optimal output, and hence we get this kind of unusual outputs.

Another kind of "anomalous" examples come from such verbs as *yell* and *lower*, which are usually not used in the double object construction. Recall examples in (12), repeated below.

(26) a. 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> (Bresnan and Nikitina, 2003, 6)

b. Karen spoke with Gretchen about the procedure for registering a complaint, and **hand-carried her a form**, but Gretchen never completed it. <www.idaholibraries.org/nampa.controversy.summary.htm> (Bresnan and Nikitina, 2003, 6)

c. 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> (Bresnan and Nikitina, 2003, 8)

d. 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> (Bresnan and Nikitina, 2003, 7)

In these examples, heaviness is not involved, but we can clearly see that pronounhood plays a role. We would expect that the informational constraint OO-PRIMACY could easily take care of this kind of examples, yet that is not the case. Let us consider (26c), for example, which is evaluated in Tableau 5 below.

(27)

T5		OO-PR	$F_{yell}(R)..$	*STR
	a. yell him the words		*	
?☞	b. yell the words to him			*

Constraint $\text{FAITH}_{yell}(\text{REC})$ is ranked higher than and quite distant from *STRUCT, and thus in normal situations, the *to*-variant, candidate (b), would win. When the recipient is a pronoun, constraint OO-PRIMACY would favor the double object variant. However, the problem is that OO-PRIMACY in (18) is defined by Bresnan and Nikitina (2003) such that it applies only to double object construction; the PP construction vacuously satisfies it. Accordingly, constraint OO-PRIMACY does not play any role, and therefore, candidate (a) cannot come out as the optimal output. In other words, the only chance where candidate (a) becomes the optimal output is when $\text{FAITH}_{yell}(\text{REC})$ and *STRUCT overlap so that the ranking between them is reversed. Although the chances are slimmer than the case of *fax*, *throw*, and other alternating verbs due to the relatively longer distance between $\text{FAITH}_{yell}(\text{REC})$ and *STRUCT, this is not entirely impossible. The problem, however, is that then the pronoun effect cannot be captured at all since the outcome is a result from the interplay between $\text{FAITH}_{yell}(\text{REC})$ and *STRUCT, not from OO-PRIMACY. This then would predict that even though the recipient were an indefinite phrase such as *a boy*, for instance, not a pronoun *him*, the double object variant would have exactly the same chances to be optimal, which is not true.

As seen above, Bresnan and Nikitina's model, as it is, does not capture the pronoun effect, while it explains the heaviness effect nicely. In the next section, a

modified account will be proposed to fix this problem and actually a more serious problem, which will be presented shortly.

3. A Modified Analysis

An easy fix to the problem of the pronoun effect (and the definiteness effect as well) would be to define OO-PRIMACY slightly differently so that it can also penalize the *to*-variant if it has a pronoun (or definite) phrase in PP while having a (indefinite) noun phrase as the object. See the revised version in (28).

(28) Double-Object Primacy (OO-PRIMACY) (Revised):
The receiver/possessor (strictly) dominates the entity on hierarchies of informational prominence, and the entity (strictly) dominates the receiver/possessor on the reversed hierarchies:
Given ≻ Accessible ≻ New; Definite ≻ Indefinite; Pronoun ≻ Noun; Shorter ≻ Longer

With the revised constraint OO-PRIMACY, we can capture the pronoun and definiteness effect as below.

(29) The Pronoun Effect in Verbs like *yell*:

T5′		OO-PR	$F_{yell}(R)$. .	*STR
☞	a. yell him the words		*	
	b. yell the words to him	*		*

Candidate (b) violates OO-PRIMACY because the pronoun follows a noun phrase. Therefore, candidate (a), with the pronoun preceding the noun phrase, emerges as optimal although *yell* normally would not take a double object construction. Thus, OO-PRIMACY correctly captures the pronoun effect. We should note, however, that the probability where candidate (a) emerges as optimal is not very big because the closeness in ranking distance between OO-PRIMACY and $FAITH_{yell}(REC)$; the reverse ranking is easily available. If we compare this case with the case of *give*, for example, as in *give him the words*, we would expect that the probability for candidate (a) to win is much higher for *give*, exactly because the ranking distance between OO-PRIMACY and $FAITH_{give}(REC)$ is farther than that between OO-PRIMACY and $FAITH_{yell}(REC)$ and so the chances are slimmer for the reverse ranking between OO-PRIMACY and $FAITH_{give}(REC)$. This way, this account with variable ranking of constraints nicely captures the probabilistic differences for dative alternation among different groups of verbs.

Nevertheless, a real problem arises when we observe examples where the double object candidate violates OO-PRIMACY. See examples in (30), cited from Bresnan and Nikitina (2003, 20). The OT evaluation for (30a), for instance, is given in (31).

(30)　　V NP Pronoun

　　　　a. Note: I don't give children peanut butter until they are 3 years old since it is recommended not to **give children it** to avoid possible

allergies.
<www.fastq.com/~jbpratt/recipes/children-recipes.html>

b. You should never give out your address or phone number online and
you should never **send someone them** in the mail either.
<www.girlpower.gov/girlarea/sciencetech/web/step1htm>

c. Please follow these simple rules and **teach your children them**, how-
ever most dogs are friendly. <www.life4paws.org/sevenrules.htm>

(31)

T6		OO-Pr. .	*Str	$F_{give}(R)$
	a. give children it	*		*
?☞	b. give it to children		*	

The [NP Pronoun] sequence is strongly prohibited in English, which is captured
in constraint OO-PRIMACY, which states Pronoun ≻ Noun. The double object
candidate (a), where the pronoun follows an NP, violates this OO-PRIMACY. The
highest ranking of this constraint should yield the *to*-variant candidate (b) as the
optimal output, yet the sentences in (30) all show that candidate (a) should some-
how be produced as optimal. For these examples to emerge optimal, OO-PRIMACY
should be outranked by *STRUCT, which is again not impossible in a stochastic
OT grammar although the chances are not big given the long distance between
them. However, what is missing then is a special focus effect that is involved in
the examples in (30).

For instance, in sentence (30a), *children* and *peanut butter* have been equally
activated in the discourse, that is, both are 'given.' Actually, the noun *children* is
used repeatedly in the context almost like a pronoun. If *children* were placed after
it in a PP phrase, i.e. *to children*, the *children* might get unnecessary focus. On
the contrary, the second object pronoun *it*, i.e., 'the peanut butter,' in fact gets
focus, which is intended in this context, although it is a pronoun and thus is not
supposed to be placed after a noun phrase. So, what motivates the placement of
the pronoun *it* after the noun *children* in (30a) is the focus on *it* and the avoidance
of focus on *children*. This is all driven by the English focus rule that prescribes
the focus to be given to the rightmost element in the sentence.

This shows that there should be another constraint that is ranked even higher
than OO-PRIMACY. This new constraint has to motivate a recipient NP to be
placed even before a theme pronoun despite the pronoun's strong inclination to be
placed before an NP. We will call this constraint ALIGNFOCUS(R) (Costa, 2001;
Samek-Lodovici, 2001), and this constraint is ranked higher than OO-PRIMACY
and all the other constraints.

(32) ALIGNFOCUS(RIGHT): Align the focused element on the right edge of the
sentence.

(33) Focus Effect on [NP Pronoun]:

T6′	focus = *it*	AF(R)	OO-PR. .	*STR	F_{give}(R)
☞	a. give children it		*		*
	b. give it to children	*		*	

With the introduction of constraint ALIGNFOCUS(R), examples in (30) are accounted for, as in (33). Note, however, that unless the focus is involved, candidate (b) would normally be the optimal candidate, which is also captured in this analysis.

The Bresnan and Nikitina model has a problem with the idiom facts too. Let us revisit the idiom examples that do not involve heavy phrases such as in (7). They are repeated as (34) below. We will see the OT evaluation of (34b), for example, in (35).

(34)   a. Even the Argentine president, known for his weakness for women, was **giving the cold shoulder to the flamboyant American singer**. (Levin 2004, (16), COBUILD)

   b. 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/pages36.html> (Bresnan and Nikitina, 2003, 8–9)

(35)

T7		OO-PR. .	*STR	. .F_{Th}(R)
?☞	a. give the athlete a headache			*
	b. give a headache to the athlete	*	*	

The *to*-variant candidate in (b) violates OO-PRIMACY in the Bresnan and Nikitina model because an indefinite phrase precedes a definite phrase, whereas the alternate double object construction satisfies it.[4] For candidate (b) to emerge as optimal, constraint OO-PRIMACY should be reversed in ranking by FAITH$_{Th}$(REC), which is quite unlikely given the distance between them. Even if the reverse ranking were indeed possible, we would lose the intended interpretation where focus is placed on the PP *to the most athletic constitution* in candidate (b).[5] This again calls for a constraint that is ranked higher than OO-PRIMACY, namely, ALIGNFOCUS(R), to make the PP candidate win over the double object candidate. The new evaluation with ALIGNFOCUS(R) is given below.

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[4] With the original definition of OO-PRIMACY, neither the double object variant nor the *to*-variant violates the constraint, in which case OO-PRIMACY does not function at all. Then we have to rely upon the unlikely reverse ranking between *STRUCT and FAITH$_{Th}$(REC) for candidate (b) to come out as optimal. If so, the focus effect is again nowhere to be captured.

[5] This focus effect is noted by Levin (2004) too. She calls the focus "new."

(36) Focus Effect on Idioms:

T7'	focus = *the athlete*	AF(R)	OO-Pr.	*Str.	.F$_{Th}$(R)
	a. give the athlete a headache	*			*
☞	b. give a headache to the athlete		*	*	

Similarly, the same applies to the non-heavy *cost* type of examples in (13) too, and the new focus constraint can account for this anomaly also.

(37) a. The IRS is unionized, and the union apparently has the fear that out-sourcing will **cost jobs to their members**.
<www.collectionindustry.com/agencyNews/feedback.cfm?issue=4>
(Bresnan and Nikitina, 2003, 11)

b. 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.betf.ca/bargain/grievances/backgrounder.html> (Bresnan and Nikitina, 2003, 11)

(38) Focus Effect on Verbs like *cost*:

T8	focus = *their members*	AF(R)	OO-Pr	*Str	F$_{cost}$(R)
	a. cost their members jobs	*			*
☞	b. cost jobs to their members		*	*	

Of course, the focus effect shows also with regular alternating verbs like *give*. Look at the following pair in (39).

(39) a. It is very difficult to get book ideas simply from interviews.

b. Well, interviewing Nixon **gave an idea for a book to Mailer**. (Levin, 2004)

As seen earlier in (23b), sentence (b) would not sound good if the sentence (a) were not given as context. Because of the context, however, the recipient *Mailer* in (b) gets focus, and therefore sentence (b) becomes okay. Not surprisingly, this focus effect is captured with the same mechanism we have seen earlier. See Tableau 9 below.

(40) Focus Effect on Regular Alternating Verbs:

T9	focus = *Mailer*	AF(R)	OO-Pr. .	*Str	F$_{give}$(R)
	a. gave Mailer an idea. .	*			*
☞	b. give an idea. .to Mailer		*	*	

If focus were not to be given to *Mailer*, candidate (a), not violating constraint OO-Primacy, would have won the competition. But *Mailer* does get focus in

this context, and thus ALIGNFFOCUS(R) would penalize a candidate where *Mailer* is not aligned to the right, namely, candidate (a). As a result of satisfying the highest constraint ALIGNFFOCUS(R), candidate (b) becomes the optimal output in this informational context. Yet, be reminded that in this probabilistic model, this simply says that the probability where candidate (b) is optimal in this context is higher than the other way around; since the ranking distance between ALIGNF-FOCUS(R) and OO-PRIMACY are not far away, the reverse ranking is available relatively easily.

4. Conclusion

In this paper, we have examined the recent semantic polysemous approaches to the dative alternation in English, which have their basis on the assumption that each variant of the dative alternation has its distinct semantic meaning, and concluded that the major arguments in support of these approaches including difference in inference pattern, idiom facts, and semantic restrictions do not hold. Then, as an example of alternative informational approaches, we have reviewed a stochastic Optimality Theoretic approach to dative alternation lately proposed by Bresnan and Nikitina (2003).

This new stochastic OT model resolves the crucial problem of 'gradience,' unavoidably embedded in the nature of variation, by applying the notion of probability to problems of linguistics. Nevertheless, empirically it fails to account for the details of the uncommon examples that they have presented as counterexamples to the previous accounts. More importantly, their informational constraint OO-PRIMACY fails to capture the focus effect, which plays a crucial role in producing some of the most "anomalous" examples.

This paper has worked out all the problematic examples by modifying the Bresnan and Nikitina model. Crucially, it has proposed a constraint ALIGNFO-CUS(RIGHT), which in fact has been used to account for other linguistic phenomena (Costa, 2001; Samek-Lodovici, 2001). To conclude, this new account captures not only the unusual behavior of the less-alternating verbs and idioms but also the special focus effect of the common alternating verbs.

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