

## Two types of variation in the morphosyntactic expression of recipients of dative verbs in Korean\*

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Lee, Hanjung. 2018. Two types of variation in the morphosyntactic expression of recipients of dative verbs in Korean. *Linguistic Research* 35(3), 449–482. It has been observed that a subset of dative verbs that express caused possession such as *cwu-* ‘give’, *ceykongsha-* ‘offer’ and *swuyeha-* ‘award’ allow both dative and accusative case on their recipient arguments. These verbs contrast with caused motion verbs such as verbs of sending and throwing, which allow their recipient argument to be realized only with dative case or other oblique postpositions. This paper presents a novel, probabilistic account of the morphosyntactic expression of recipients of Korean dative verbs that can explain two types of variation that remain unexplained by previous approaches to dative verbs: speaker variation and grammatical gradience in the realization of recipients of dative verbs. It is shown that these problems can be accounted for in a unified way in terms of the relative ranking of and the distance between two conflicting constraints in Stochastic Optimality Theory (Boersma and Hayes 2001): a FAITH(REC) constraint requiring faithful expression of the recipient role (Bresnan and Nikitina 2009) and a RECIPIENT/DIRECTCASE(REC/Dc) constraint enforcing direct case more strongly on a semantically stronger type of recipients, i.e., a recipient entailed to possess a theme. This result provides new evidence for probabilistic approaches to argument realization where probabilistic constraints that relate an argument’s semantic prominence and a morphosyntactic prominence contrast (direct vs. oblique marking) play a crucial role in argument marking. (Sungkyunkwan University)

**Keywords** dative verbs, dative case, direct case, possession, recipient, semantic prominence, Stochastic Optimality Theory

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## 1. Introduction

Dative verbs—verbs that take agent, recipient, and theme arguments—have received considerable attention in recent years from a typological perspective. Much research on the morphosyntactic realization options that languages make available for these verbs has focused on the expression of recipients, which has turned out to be major locus of cross-linguistic variation (e.g., Croft et al. 2001; Haspelmath 2005; Levin 2008, 2010; Beavers and Nishita 2010, among others). This paper examines the morphosyntactic expression of recipients of Korean dative verbs. As illustrated in (1), Korean dative verbs express their non-agent arguments using dative and accusative case, with either order of these arguments usually possible.

- (1) Mina-ka Swuni-eykey sopho-lul cwu-ess-ta.  
 Mina-NOM Swuni-DAT package-ACC give-PAST-DECL  
 ‘Mina gave a package to Swuni.’

While all Korean dative verbs may occur with a dative NP expressing a recipient, only a subset of dative verbs that can express causation of possession such as *cwu-* ‘give’, *ceykongha-* ‘offer’ and *swuyeha-* ‘award’ allow both accusative case as well as dative case on their recipients, as in (2). These verbs contrast with the other major subset of dative verbs expressing causation of motion to a goal such as verbs of sending and throwing, which allow their recipient argument to be realized only with dative case, as shown in (3).

- (2) a. Mina-ka Swuni-eykey/lul sopho-lul cwu-ess-ta.  
 Mina-NOM Swuni-DAT/-ACC package-ACC give-PAST-DECL  
 ‘Mina gave Swuni a package.’  
 b. Wuri-ka senswu-tul-eykey/-ul umsik-ul ceykonghay-ss-ta.  
 we-NOM player-PL-DAT/-ACC food-ACC offer-PAST-DECL  
 ‘We offered players food.’  
 c. Nay-ka haksayng-tul-eykey/-ul sang-ul swuyehay-ss-ta.  
 I-NOM student-PL-DAT/-ACC prize-ACC award-PAST-DECL  
 ‘I awarded students a prize.’

- (3) a. Mina-ka Swuni-eykey/\*-lul sopho-lul ponay-ss-ta.  
 Mina-NOM Swuni-DAT/ACC package-ACC send-PAST-DECL  
 'Mina sent a package to Swuni.'
- b. Mina-ka Swuni-eykey/\*-lul kong-ul tenci-ess-ta.  
 Mina-NOM Swuni-DAT/ACC package-ACC throw-PAST-DECL  
 'Mina threw a ball to Swuni.'

The predominant view of these classes of verbs is that caused possession verbs show two argument realization patterns because they have two meanings—caused possession meaning realized as the ACC-ACC pattern and caused motion meaning realized as the DAT-ACC pattern—, while caused motion verbs allow the DAT-ACC pattern only because they have a single meaning (e.g., Cho 1996; Park and Whitman 2003; Jung and Miyagawa 2004; Kim 2015). However, there is substantial variation in speakers' judgments of the acceptability of the ACC-ACC pattern of caused possession verbs. While such a dative construction has been often considered grammatical in the literature (Kim 1990; Hong 1991; Cho 1996; Park and Whitman 2003; Jung and Miyagawa 2004; Kim 2015, among others), Lee and Jang (2018) have shown that it is judged unacceptable or marginal at best by many speakers. They have further shown that speakers find the DAT-ACC frame of caused possession verbs more acceptable than the ACC-ACC frame.

In this paper, I present a novel, probabilistic account of the morphosyntactic expression of recipients of Korean dative verbs that can explain these two types of hitherto unexplained variation by the interaction of two conflicting constraint families in Stochastic Optimality Theory (Boersma and Hayes 2001): a FAITH(REC) constraint requiring faithful expression of the recipient role and a RECIPIENT/DIRECTCASE(REC/DC) constraint enforcing direct case more strongly on a semantically stronger type of recipients, i.e., a recipient entailed to possess a theme. It is argued that the relative ranking of and the distance between these constraints in Stochastic Optimality Theory provide a unified formal solution to i) speaker variation and ii) grammatical gradience in the realization of recipients of dative verbs. This result provides new evidence for probabilistic approaches to argument realization where probabilistic constraints that relate an argument's semantic prominence and a morphosyntactic prominence contrast (direct vs. oblique marking) play a crucial role in argument realization.

## 2. Major classes of dative verbs in Korean

The focus of the present study is a major class of ditransitive verbs that are referred to as dative verbs, i.e., verbs that take agent, recipient and theme arguments. Levin (2010) recognizes three semantic classes of Korean dative verbs: verbs of giving in (4) and verbs of sending in (5) and verbs of throwing in (6).

- (4) *give*-type verbs: *cwu-* 'give', *kennay-* 'hand', *kichungpha-* 'donate', *mathki-* 'entrust', *phal-* 'sell', *tayyeha-* 'rent', *cikupha-* 'pay', ...; include verbs of future having: *ceykongpha-* 'offer', *kwenha-* 'offer', *namki-* 'bequeath', *pwuyeha-* 'grant', *sunginha-* 'grant', *swuyeha-* 'award', *yaksokha-* 'promise', ...
- (5) *send*-type verbs: *centalha-* 'forward', *pannapha-* 'return', *paysongpha-* 'ship', *paytalha-* 'deliver', *ponay-* 'send', *pwuchi-* 'mail', ...
- (6) *throw*-type verbs: *cha-* 'kick', *chi-* 'hit', *tenci-* 'throw', ...

The meanings of these verbs have been analyzed in terms of two distinct but related event schemas in (7) (Pinker 1989; Harley 2002; Krifka 2004; Rappaport Hovav and Levin 2008; Beavers 2011).

- (7) a. Caused possession schema: [[x ACT] CAUSE [y HAVE z]]  
 b. Caused motion schema: [[x ACT] CAUSE [z GO TO y]]

These schemas embody distinct types of causative events, one involving possession and the other motion to a goal, perhaps in an abstract domain along the lines embodied in the Localist Hypothesis (Gruber 1965; Jackendoff 1972, 1983). Since both event schemas involve agent and theme arguments, the x and z arguments, respectively, the essence of the distinction between them is embodied in the semantic role of the y argument: in the caused possession schema this argument is a recipient, generally an animate entity capable of possession, while in the caused motion schema this argument is a spatial goal. This difference between the two schemas is often represented in standard

decompositional terms as in (7), indicating caused possession via a primitive HAVE predicate ranking the recipient higher than the theme and caused motion via a primitive GO TO predicate that ranks the theme higher than the goal.

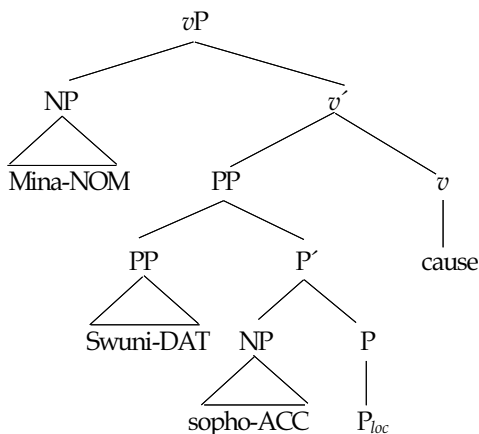
The predominant view of the Korean dative verbs in (4)-(6) is that both *send/throw*-type verbs and *give*-type verbs are associated with a caused motion meaning and that *give*-type verbs are associated with an additional meaning—caused possession meaning (Park and Whitman 2003; Jung and Miyagawa 2004; Kim 2015, among others). This view, which I refer to as the polysemy approaches to *give*-type verbs, is summarized in (8).

(8) The polysemy approach to *give*-type verbs:

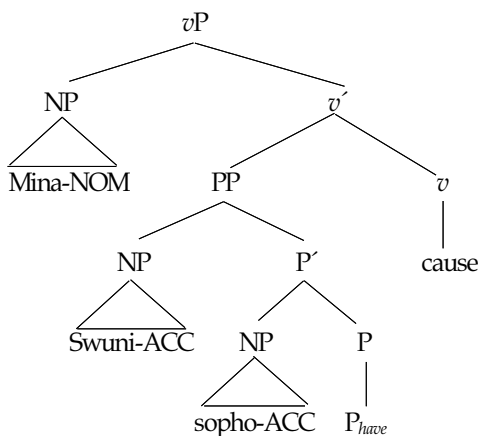
	meaning(s) associated with verbs	
<i>give</i> -type verbs	caused motion	caused possession
<i>send</i> -type verbs	caused motion	—
	↓	↓
	DAT-ACC frame	ACC-ACC frame

Proponents of the polysemy approaches to *give*-type verbs propose that what drives the DAT-ACC case alternation on recipients of these verbs is their multiple meanings—caused possession and caused motion whereas the absence of this alternation in *send/throw*-type verbs is attributed to their monosemy. It is commonly assumed that these meanings are syntactically encoded by distinct syntactic event decompositions (Park and Whitman 2003; Jung and Miyagawa 2004; Kim 2015, among others). For example, Jung and Miyagawa (2004) extend Harley’s (2002) analysis of the English dative alternation to Korean and propose a so-called ‘symmetric’ account of the two frames of Korean dative verbs, which posits two structures that are different only in the type of P(ostposition). The analysis of the dative construction taking a dative recipient (the DAT-ACC frame) is in (9a), where the two non-agent arguments form a small clause-type predication headed by a null P indicating location (*Ploc*), taking the theme as a complement and the recipient/goal as a specifier. The analysis of the dative construction taking an accusative recipient (the ACC-ACC frame) is in (9b), where the small clause is instead headed by a null P indicating possession (*Phave*), taking the theme as a complement and the recipient/goal as a specifier.

- (9) a. syntactic event decomposition for the DAT-ACC frame (Jung and Miyagawa 2004)



- b. syntactic event decomposition for the ACC-ACC frame (Jung and Miyagawa 2004)



However, polysemy approaches to Korean *give*-type verbs are problematic because the meaning of Korean verbs that can express causation of possession inherently encodes causation of a possessive state independently of the syntactic frame in which it occurs. The evidence for this comes from adverbial modification.

Beck and Johnson (2004) have applied the behavior of *again* to detect semantic composition of English dative verbs. As they have shown, when the

adverb *again* modifies a double object construction, it has two different interpretations.

- (10) Jorge gave Maria the ball again.  
 a. Jorge gave Maria the ball, and that had happened before. (repetitive reading)  
 b. Jorge gave Maria the ball, and Maria had the ball before. (restitutive reading)

(Beck and Johnson 2004: (48)-(49), modified)

On one reading, the repetitive reading, *again* presupposes that the entire event of Jorge's giving Maria the ball had happened before. On the other reading, the restitutive reading, what *again* presupposes is that Maria had had the ball at some previous point in time. The difference between the two readings is in what event is repeated. On the restitutive reading, only the result state of Maria's having the ball is repeated. However, on the repetitive reading, the entire event of Jorge's giving Maria the ball is repeated.

The transfer of concrete possession use of the Korean verb *cwu-* 'give', like the English verb *give*, is ambiguous between the repetitive reading in (11a) and the restitutive reading in (11b).<sup>1</sup>

- (11) Mina-ka Swuni-eykey/-lul ku chayk-lul tasi cwu-ess-ta.  
 Mina-NOM Sooni-DAT/-ACC that book-ACC again give-PAST-DECL  
 'Mina gave Sooni that book again.'  
 a. Mina-ka Swuni-eykey/-lul ku chayk-lul cwu-ess-ta.  
 Mina-NOM Sooni-DAT/-ACC that book-ACC give-PAST-DECL  
 Kuliko ku il-un cen-ey iss-ess-ta.  
 and that happening-TOP before-at be-PAST-DECL  
 'Mina gave Sooni that book, and that had happened before.'  
 b. Mina-ka Swuni-eykey/-lul ku chayk-lul cwu-ess-ta.  
 Mina-NOM Sooni-DAT/-ACC that book-ACC give-PAST-DECL

<sup>1</sup> The judgments of the examples reported in this section have been collected from ten native speakers of Korean who accept accusative case marking of recipients of dative verbs that express caused possession.

Kuliko Swuni-nun ku chayk-i cen-ey iss-ess-ta.  
 and Sooni-TOP that book-NOM before-at have-PAST-DECL  
 ‘Mina gave Sooni that book, and Sooni had it before.’

Observe that the ambiguity of *tasi* ‘again’ appears in both the DAT-ACC frame and the ACC-ACC frame. The ambiguity of *tasi* in both frames of *cwu-* ‘give’ suggests that the meaning of *cwu-* ‘give’ inherently encodes causation of a possessive state independently of the syntactic frame in which it occurs, thus arguing against the proposal that *cwu-* ‘give’ expresses causation of motion to a goal when it occurs in the DAT-ACC frame.<sup>2</sup> We can see further evidence for this in adverbial modification discussed in Harley (2002) and Beck and Johnson (2004). The sentence in (12) means having lasted a week, not giving.

- (12) Mina-ka Swuni-eykey/-lul cha-lul il cwu tongan cwu-ess-ta.  
 Mina-NOM Sooni-DAT/-ACC car-ACC one week for give-PAST-DECL  
 ‘Mina gave Sooni the car for a week.’

The fact that the durative adverbial *il cwu tongan* ‘for one week’ picks out a result possessive state in both frames of *cwu-* ‘give’ provides strong support to the idea that the meaning of *cwu-* ‘give’ inherently encodes causation of a possessive state independently of the syntactic frame in which it occurs. In its transfer of concrete possession use, *cwu-* ‘give’ requires possession in both frames. This is evidenced by the oddness of denying possession in both frames:

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<sup>2</sup> Levin (2010) argues that *give*-type verbs are not associated with the caused motion event type, supporting the distinct association of *give*- and *send*-type verbs with event types in Korean as well as in English. Her argument is based on the distributional property of the suffix *-(u)lo*, (which denotes the direction ‘to, toward, (heading) for’, an asymmetry in dative verb distribution in idioms and verb-abstract theme combinations. See Rappaport Hovav and Levin (2008) for a more detailed discussion of evidence for the distinct association of *give*- and *send*-type verbs with event types in English.



- (13) a. #Na-nun John-eykey/-ul sopho-lul cwu-ess-ta. (contradiction)  
 I-TOP John-DAT/-ACC package-ACC give-PAST-DECL  
 kulena ku-eykey sopho-ka an ka-ass-ta.  
 but he-DAT package-NOM not go-PAST-DECL  
 'I gave a package to John, but it did not go to him.'
- b. #Nay-ka John-eykey/-ul sang-ul cwu-ess-ta. (contradiction)  
 I-nom John-DAT/-ACC prize-ACC cwu-PAST-DECL  
 kulena ku-nun sang-ul mos pat-ass-ta.  
 but he-TOP prize-ACC not receive-PAST-DECL  
 'I gave a prize to John, but he didn't receive it.'

*Kaluchi-* 'teach' and future having verbs such as *ceykongha-* 'offer', *cikupha-* 'pay' and *swuyeha-* 'award' are similar to *cwu-* 'give' in that they are ambiguous between the repetitive reading and the restitutive reading, though possession is not strictly entailed for these verbs. This is illustrated with the interpretation of *tasi* 'again' in the two frames of *kaluchi-* 'teach' and *swuyeha-* 'award' in (14) and (15). Observe that the sentence in (14) is felicitous on both the repetitive reading in (14a) ('I repeated the entire event of teaching French to students') and the restitutive reading in (14b) ('I attempted to make students have knowledge of French again').<sup>3</sup>

- (14) Nay-ka haksayng-tul-eykey/-ul pwule-lul tasi kaluchi-ess-ta.  
 I-NOM student-PL-DAT/-ACC French-ACC again teach-PAST-DECL  
 'I taught French to students again.'
- a. nay-ka haksayng-tul-eykey/-ul pwule-lul kaluchi-ess-ta.  
 I-NOM student-PL-DAT/-ACC French-ACC teach-PAST-DECL  
 Kuliko ku il-un cen-ey iss-ess-ta.  
 and that happening-TOP before-at be-PAST-DECL  
 'I taught French to students, and that had happened before.'
- b. nay-ka haksayng-tul-eykey/-ul pwule-lul kaluchi-ess-ta.

<sup>3</sup> An anonymous reviewer points out that the dative recipient of *kaluchi-* 'teach' is construed as referring to different groups of students, whereas the accusative recipient may be construed as referring to the same group of students. Whether this difference is attributable to an information structural difference between *-eykey* and *-(l)ul* is an interesting question which requires a more thorough investigation in future study.

I-NOM student-PL-DAT/-ACC French-ACC teach-PAST-DECL  
 Kuliko kutul-un cen-ey pwule-lul al-ass-ess-ta.  
 and they-TOP before-at French-ACC know-ASP-PAST-DECL  
 'I taught French to students, and they had known it before.'

The fact that the possessive meaning is constant across the syntactic frames of *kaluchi-* 'teach' suggests that this verb has a result possessive state in their meaning.

*Cwu-* 'give', *kaluchi-* 'teach' and future having verbs are in sharp contrast to caused motion verbs such as verbs of sending and throwing and other transfer verbs (e.g., *kemmay-* 'hand' and *nemki-* 'pass over'), which do not show ambiguity when modified by *tasi* 'again'. Consider the contrast between the felicity of the sentences in (15) and (16) under the repetitive reading in (15a) and (16a) and the infelicity under the restitutive reading in (15b) and (16b). These sentences only mean that Mina repeated transferring a package to Sooni, but cannot mean that Mina caused Sooni to have a package again.

- (15) Mina-ka Swuni-eykey sopho-lul tasi ponay-ss-ta.  
 Mina-NOM Sooni-DAT package-ACC again send-PAST-DECL  
 'Mina sent a package to Sooni again.'
- a. Mina-ka Swuni-eykey sopho-lul ponay-ss-ta.  
 Mina-NOM Sooni-DAT package-ACC send-PAST-DECL  
 Kuliko ku il-un cen-ey iss-ess-ta.  
 and that happening-TOP before-at be-PAST-DECL  
 'Mina sent a package to Sooni, and that had happened before.'
- b. #Mina-ka Swuni-eykey sopho-lul ponay-ss-ta.  
 Mina-NOM Sooni-DAT package-ACC send-PAST-DECL  
 Kuliko Swuni-nun cen-ey sopho-lul kaciko iss-ess-ta.  
 and Sooni-TOP before-at package-ACC have be-PAST-DECL  
 'Mina sent a package to Sooni, and Sooni had it before.'
- (16) Mina-ka Swuni-eykey kong-ul tasi tenci-ess-ta.  
 Mina-NOM Sooni-DAT ball-ACC again throw-PAST-DECL  
 'Mina threw a ball to Sooni again.'

- a. Mina-ka Swuni-eykey kong-ul tenci-ess-ta.  
 Mina-NOM Sooni-DAT ball-ACC throw-PAST-DECL  
 Kuliko ku il-un cen-ey iss-ess-ta.  
 and that happening-TOP before-at be-PAST-DECL  
 'Mina threw a ball to Sooni, and that had happened before.'
- b. #Mina-ka Swuni-eykey kong-ul tenci-ess-ta.  
 Mina-NOM Sooni-DAT ball-ACC throw-PAST-DECL  
 Kuliko Swuni-nun cen-ey kong-ul kaciko iss-ess-ta.  
 and Sooni-TOP before-at ball-ACC have be-PAST-DECL  
 'Mina threw a ball to Sooni, and Sooni had it before.'

If the sentences in (15) and (16) involved causation of a possessive state, then they should be able to be felicitous under the restitutive reading. The fact that they are not felicitous on this reading strongly suggests that the meaning of *ponay-* 'send' and *tenci-* 'throw', does not include the result possessive state and therefore these verbs do not mean caused possession and only mean caused motion.

Thus Korean dative verbs can be divided into two broad classes on the basis of adverbial modification: verbs that inherently encode caused possession and verbs that do not. I refer to the former class of verbs as caused possession verbs and the latter class to as caused motion verbs:

- (17) Caused possession verbs: *cwu-* 'give', *kaluchi-* 'teach' and future having verbs (*ceykongha-* 'offer', *cikupha-* 'pay', *kwonha-* 'offer', *namki-* 'leave; bequeath', *pwuyeha-* 'grant', *swuyeha-* 'award', ...)
- (18) Caused motion verbs: verbs of sending (*centalha-* 'forward', *pannapha-* 'return', *paysongha-* 'ship', *paytalha-* 'deliver', *ponay-* 'send', *pwuchi-* 'mail', ...) and verbs of throwing (*cha-* 'kick', *chi-* 'hit', *tenci-* 'throw', ...)

As I have shown above, only the class of caused possession verbs can be associated with the caused possession schema, whereas caused motion verbs are associated with the schema '[x ACT] CAUSE [y RECEIVE z]' or with the schema

'[[x ACT] CAUSE [z GO TO y]'. The associations of verb types with the event schemas discussed in this section are summarized in (19). The semantic difference between the caused possession verbs and the caused motion verbs is represented via different decompositions: the primitive HAVE predicate represents the result possessive state entailed by the caused possession verbs, whereas the primitive RECEIVE predicate represents the receiving event caused by the acting event described by the caused motion verbs, thus capturing the fact that these verbs do not have a state of possession in their meaning. This difference in meaning between the two major classes of Korean dative verbs provides independent evidence for different lexical entailments I posit for their recipient argument in section 4.

- (19) Association of verb types with event schemas
- a. Caused possession verbs: [[x ACT] CAUSE [y HAVE z]] (causation of possession)
  - b. Caused motion verbs: [[x ACT] CAUSE [y RECEIVE z]] (causation of receiving) or [[x ACT] CAUSE [z GO TO y]] (causation of motion to a goal)

### 3. Experimental evidence for two types of variation in case marking of recipients of caused possession verbs in Korean

It has been observed that Korean caused possession verbs such as *cwu-* 'give', *swuyeha-* 'award' and *kaluchi-* 'teach' allow accusative case on recipients as well as dative case, contrasting with the other major subset of dative verbs, verbs of sending and throwing, which express their recipient argument using dative case only. There are two major classes of analyses for this contrast. The first class of analyses is the polysemy approach discussed in section 2 which assumes that core dative verbs illustrated in (17) have two meanings—caused possession and directed motion, with each meaning giving rise to a distinct argument realization pattern (e.g., Cho 1996; Park and Whitman 2003; Jung and Miyagawa 2004; Kim 2015). On most instantiations of this approach, the DAT-ACC pattern expresses caused motion: an agent causes a theme to move along a path to a goal, where

the movement and path are interpreted in the possessional field (Gruber 1965; Jackendoff 1972, 1983). The ACC-ACC pattern expresses caused possession—causing a recipient to possess an entity, with the notion of possession construed broadly including possession of information. The second assumes that all dative verbs have a single meaning and that the dative vs. accusative case marking on their recipient reflects differences in the affectedness of this argument. On this approach, the dative/accusative alternation arises because *cwu-* ‘give’ and other Korean verbs of caused possession take an affected goal, i.e., possessor (e.g., Hong 1991; Lee 2007); thus, the recipient argument of such verbs is allowed to be accusative-marked, whereas the goal argument of verbs such as *ponay-* ‘send’ and *tenci-* ‘throw’ is realized with dative case only because it is not necessarily affected by the action of the agent.

These approaches, however, leave several issues open which are problematic for any analyses which take the two realizations of recipients as well-formed variants expressing a distinct meaning, whether this meaning involves possession or affectedness. First, while dative constructions in which the recipient of the verbs in (17) is marked with accusative case, i.e., the double accusative pattern, have been often considered grammatical in the literature (Kim 1990; Hong 1991; Cho 1996; Park and Whitman 2003; Jung and Miyagawa 2004; Kim 2015), there is substantial variation in speakers’ judgments of the acceptability of such constructions. While such a dative construction has been often considered grammatical in the literature (Kim 1990; Hong 1991; Cho 1996; Park and Whitman 2003; Jung and Miyagawa 2004; Kim 2015, among others), Lee and Jang (2018) have shown that it is judged unacceptable or marginal at best by many speakers. A second, related issue is the relative acceptability of the two case marking patterns of the Korean caused possession verbs. The DAT-ACC frame of the caused possession verbs is generally preferred to the ACC-ACC frame. Nevertheless, both polysemy and monosemy approaches do not explain why the two frames of the caused possession verbs show such an acceptability difference, failing to capture the grammatical gradience in case marking of their recipient argument.

In a rating experiment conducted with 60 native speakers of Korean, Lee and Jang (2018) have found empirical evidence for systematic speaker variation and grammatical gradience in acceptability judgments of the two case marking

patterns of the Korean caused possession verbs. They asked each speaker to read sentences containing a dative-marked or an accusative-marked recipient of the two classes of Korean dative verbs in (17) and (18) and rate the acceptability of the sentences by assigning them grades from 1 to 5 on a five-point rating scale (1 = completely unacceptable, 5 = perfectly acceptable). The experiment had two independent variables: verb type and case of the recipient. Both variables have two levels as shown in Table 1, so total four conditions were created. They tested 15 items per condition, 60 items altogether and presented the two versions of the target sentences in a factorial design so that half the participants saw 30 stimuli with a dative recipient, and half saw 30 stimuli with an accusative recipient.

Table 1. Experimental conditions

Verb type	Caused possession verbs		Caused motion verbs	
Case of recipient	DAT	ACC	DAT	ACC

A key finding is that recipient case was a significant predictor of the acceptability of the target sentences ( $F(2, 165) = 154.19, p = .000$ ). As Table 2 shows, the mean judgments for the stimuli with a dative-marked recipient are higher than those for the stimuli with an accusative-marked recipient in both verb type conditions: dative case marking on recipients was judged acceptable in both verb type conditions, showing acceptability values higher than 4. In contrast, accusative case marking on recipients showed acceptability values lower than 3 in both verb type conditions.

Table 2. Average ratings of DAT vs. ACC case on recipients

	Caused possession verbs	Caused motion verbs	Means
DAT	4.25 (SD: 0.39)	4.21 (SD: 0.43)	4.23
ACC	2.65 (SD: 0.83)	1.61 (SD: 0.31)	2.13

Lee and Jang (2018) also found that the conditions differed in respect of variability. As shown in Table 1, the stimuli with an accusative-marked recipient of caused motion verbs showed the lowest degree of variability, as indicated by the lowest S(tandard)D(eviation) score of 0.31, whereas the stimuli with an

accusative-marked recipient of caused possession verbs showed the highest degree of variability, as indicated by the highest SD score of 0.83. This is further supported by an analysis of individual participants' responses within each condition. As shown in Figure 1, participants' responses in the ACC-motion verb condition were most uniform in that all participants judged sentences containing an accusative-marked recipient unacceptable. Figure 1 also shows that participants' responses in the ACC-possession verb condition were most variable: while 73% of the participants rejected sentences containing an accusative recipient of caused possession verbs, 15% judged them marginally acceptable. Surprisingly, only 12% of the participants judged them acceptable, giving stimuli a score higher than 4.

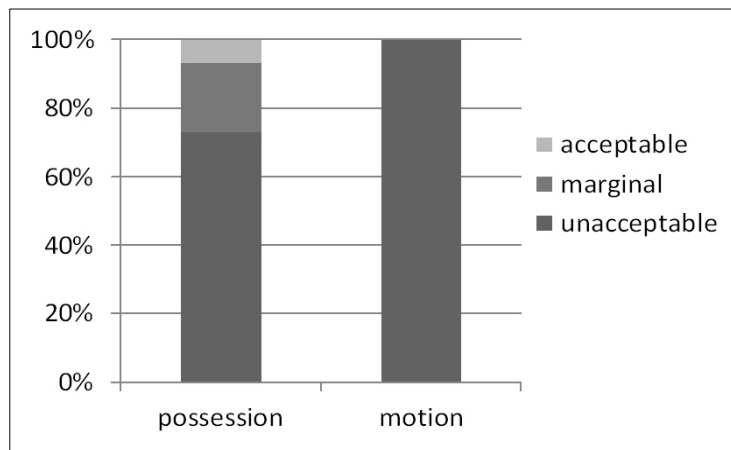


Figure 1. Participants' responses within each condition (ACC-recipients)

In contrast, dative case marking on recipients of both verb types did not substantially differ in respect of variability. As shown in Figure 2, more than 90% of the participants accepted dative case marking on recipients in both verb type conditions, giving stimuli a score higher than 4.

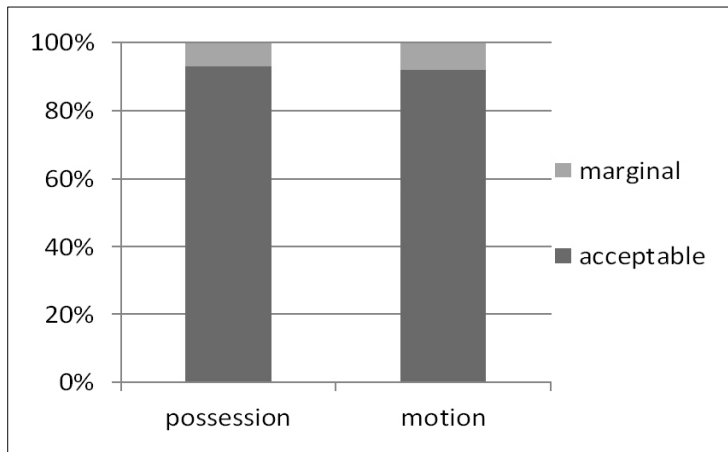


Figure 2. Participants' responses within each condition (DAT-recipients)

Overall, the results of this experiment show that the morphosyntactic expression of recipients of Korean dative verbs exhibits both categoricity and systematic gradience. While participants judged the ACC-ACC pattern of caused motion verbs as invariably and absolutely unacceptable, their judgments on the ACC-ACC pattern of caused possession verbs showed greater variability, ranging from (marginal) acceptability to unacceptability. The results further indicate that dative case-marking of recipients of both caused possession verbs and caused motion verbs is strongly preferred to accusative case-marking.

These results do not provide support for the polysemy approaches to the argument realization of Korean dative verbs. Contrary to the prediction of the polysemy approaches, more than 70% of the participants reject accusative case-marking on the recipient of caused possession verbs. The strong preference for dative case-marking of recipients of both caused possession verbs and caused motion verbs observed in the acceptability data from Lee and Jang's (2018) experiment presents another serious challenge to previous approaches to the argument realization of Korean dative verbs. Both syntactic event decompositions employed in the polysemy approaches and optional application of the two case marking rules in Hong's (1991) single meaning approach account for how it is possible to generate the two realization options for possessor of caused possession verbs. But they lack a mechanism needed to assess the relative



markedness of the two realization options, thus failing to explain why dative case on possessor of caused possession verbs is strongly preferred to accusative case.

#### **4. Two competing motivations for the morphosyntactic expression of recipients**

The two case marking options allowed for the recipient of caused possession verbs in some varieties of Korean raise the question of what motivates the direct and oblique case markings of recipients of dative verbs. In this paper, I argue that the direct and oblique case markings are motivated by two conflicting needs that arise in the morphosyntactic expression of recipients: the need to identify or mark a strategy a strongly affected recipient, i.e., possessor recipient and the need to mark a recipient role distinctly from a theme role.

Following Bresnan and Nikitina (2009), we can translate the latter motivation for the morphosyntactic expression of recipients into a faithfulness constraint requiring distinct marking of the recipient role:

- (20) FAITH(REC): Express the recipient role of a verb with a marker (case or adposition) that has possession meaning.

Korean exemplifies a language in which the dative case is the basic realization for recipients and spatial goals. Why is it that the marker for these roles is the dative case, not other oblique markers? The Korean dative case markers *-ey* (used with non-animates) and *-eykey* (used with animates) mark a wide range of argument types including locations, goals and recipients, as well as some arguments that are not clearly goals (e.g., passive agents, causes and sources) (Sohn 2001; Jun 2003). As Aristar (1996, 1997) discusses, markers used to indicate locations and spatial goals may be extended to indicate recipients by semantic extension or additional marking (or both). Although it is difficult to give all argument types indicated by the Korean dative case markers a unified characterization, it is well established that the marker *-eykey* originated from a combination of a genitive marker *-uy* and a locative pronoun *ku* marked by a

locative case marker *-ey* (S. Lee 1961/1981; Yoo 2008). *-Ey* was originally restricted to inanimate NPs and places, and extended to animate NPs by processes of what Aristar (1996, 1997) calls meaning extension (or reinterpretation) and bridge marking (the use of some additional morphology indicating a marked combination of an animate NP and a locative marker). Aristar (1996, 1997) shows that in many languages meaning extension triggered the grammaticalization of the marking as a new morpheme. The diachronic development of the Korean dative case marker *-eykey*, restricted to animates, from *-uy*(genitive) *ku*(pronoun)*-ey*(locative) can be understood as a similar grammaticalization process. The result is that Korean has a single marker that is compatible with locations, spatial goals and recipients.

The FAITH(REC) constraint in (20) is in potential conflict with a general preference for the direct case marking of a recipient high in semantic prominence. The relevant notion of semantic prominence that distinguishes between recipients of caused possession verbs and recipients of caused motion verbs can be defined by a set of lexical entailments or truth conditions constituting these roles, that is, the set of things that must be true of that argument in order for it to have had that role in the described event (Dowty 1989, 1991; Ackerman and Moore 1991; Beavers 2010). For example, *cwu-* ‘give’ describes events in which one participant causes another to have something. What must be true of each participant is some set of (possibly overlapping) lexical entailments or truth conditions that together codify this relationship. I posit the following sets of entailments or truth conditions constituting the role POSSESSOR RECIPIENT (recipient of caused possession verbs) and NON-POSSESSIONAL RECIPIENT (recipient of caused transfer verbs), which fall in a subset relation as in (21):

- (21) POSSESSOR RECIPIENT  $\supset$  NON-POSSESSIONAL RECIPIENT
- |                                  |                                |
|----------------------------------|--------------------------------|
| denote the end point of a path   | denote the end point of a path |
| come to receive and have a theme | come to receive a theme        |

Following Beavers and Francez (2011: 45), I assume that the two roles in (21) share the entailment of denoting the endpoint of some abstract motion of the theme towards the recipient or the goal. As argued by Beavers and Francez

(2011) and Beavers (2011), this notion of path is necessarily abstract (à la Krifka (1998)): it refers to a scale of the theme coming to be or with the goal, i.e., a relation of “central coincidence” following Hale and Keyser (2002: 208), a necessary precondition on coming to be possessed. A POSSESSOR RECIPIENT adds to this the entailment of (actual or prospective) receiving and having, and a NON-POSSESSIONAL RECIPIENT adds the entailment of prospective receiving. These entailments derive from the truth-conditional content of the event structures associated with their verbs. As discussed in section 2, verbs taking a POSSESSOR RECIPIENT inherently encode causation of a ‘have’ relation, thus entailing for their recipient coming to receive and have (the physical control over) the theme. In contrast, verbs taking a NON-POSSESSIONAL RECIPIENT encode causation of prospective receiving of a theme without entailing coming to be in possessive state. Thus, the truth conditions that constitute possessor-hood entail those constituting NON-POSSESSIONAL RECIPIENT, which lack the entailment of coming to have a theme or be in a possessive state, but not conversely. Therefore, the truth conditions for being a POSSESSOR RECIPIENT are strictly stronger than for being a NON-POSSESSIONAL RECIPIENT. Both roles can be seen as a truth conditional strengthening of the role of spatial goal for the latter role is associated only with the entailment of denoting the endpoint of some abstract motion of the theme towards it (Beavers 2010, Beavers and Francez 2011).

Thus, POSSESSOR RECIPIENT of caused possession verbs shares strong affectedness with the theme/patient argument of basic transitive verbs, and this shared semantic property is what motivates the same realization of these roles in Korean, i.e., accusative case-marking. In this paper, I suggest a general constraint REC(ipient)/D(irect)C(ase) to capture the association between the semantic prominence of recipients and the prominence in their morphosyntactic realization. (This constraint will be elaborated in section 5 to account for the fact that a NON-POSSESSIONAL RECIPIENT is not marked with direct case in Korean).

- (22) REC(ipient)/D(irect)C(ase): Recipients are marked with direct case.

By instantiating the two competing functional motivations for the morphosyntactic expression of recipient as REC/DC and FAITH(REC) constraints, we can explain the preference for dative case marking of recipients of caused

possession verbs in Korean to accusative case marking. While REC/DC predicts that the recipient will be marked with accusative case, FAITH(REC) predicts that the recipient will be marked distinctly from the theme. This conflict requires resolution. In Optimality Theory (OT; Prince and Smolensky 1993, 2004), every grammar is a system of conflicting constraints, and conflicts between violable, universal constraints are resolved by hierarchical ranking of constraints, such that higher-ranking constraints have priority over lower-ranked ones. From this viewpoint, Korean can be seen as a language which gives priority to FAITH(REC) over REC/DC and hence prefers the dative case on recipients to the accusative case. In section 5, I will show how finer-grained interactions of specific instantiations of these constraints account for the Korean data.

## **5. Modeling two types of variation in case marking of recipients of dative verbs in Stochastic Optimality Theory**

This section presents a novel, probabilistic account of the morphosyntactic expression of recipients of Korean dative verbs that can explain the two types of hitherto unexplained variation by the interaction of the two conflicting markedness constraints—FAITH(REC) and REC/DC—in Stochastic Optimality Theory (Boersma and Hayes 2001).

### **5.1. Stochastic Optimality Theory**

Optimality Theory (OT) is a grammar formalism developed by Prince and Smolensky in the early 1990s. In OT (Prince and Smolensky 1993, 2004), a grammar is a function mapping each linguistic input to its correct structural description or output. In OT syntax and semantics, the input is taken as an expression of the basic semantic and grammatical information of the clause. Given an input, a set of output candidates are generated by GEN(ERATOR), and these candidate structures are evaluated by a set of ranked, violable constraints. The candidate that fares best with regard to the constraints is the output.

The standard OT grammar is deterministic, in the sense that each input is mapped onto a single output. This is tenable in some areas of linguistics, but it

goes against widespread variation in the use of language. An alternative that is being actively pursued is to replace the strict ranking system with a stochastic evaluation system in which constraints are weighted numerically, and in which these numerical weights have uncertainty. For example, in the Stochastic model of Optimality Theory (henceforth StOT), pioneered by Boersma (1998), a discrete ordinal scale of constraint rankings is replaced with a continuous scale. That is, in StOT (see Boersma and Hayes (2001) for an overview), constraints are not simply ordered, but they have a value on the continuous scale of real numbers. Hence, constraints differ not only in dominance but in distance. Also, in StOT evaluation is stochastic. At each evaluation the value of each constraint is perturbed by temporarily adding to its ranking value random noise drawn from a normal distribution. The value permanently associated with a constraint is called a ranking value while a constraint's value in any given evaluation is called the selection point. For example, a constraint with the mean rank of 99 (ranking value) could be evaluated at 98.12 or 100.3 (selection point). It is the constraint ranking that results from these new disharmonic values that is used in evaluation. The rank a constraint has in the grammar is the mean of a normal distribution or 'bell curve' of these variant values that it has when applied in evaluations; this is illustrated in Figure 3.<sup>4</sup>

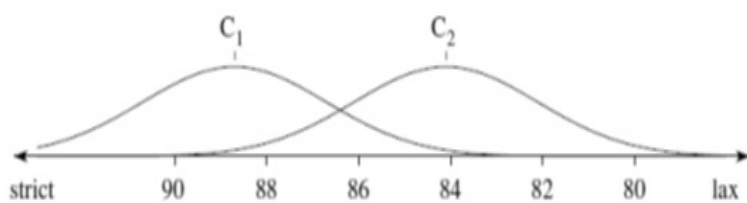


Figure 3. Constraint ranking on a continuous scale with stochastic evaluation

As explained by Boersma and Hayes (2001), an OT grammar with stochastic evaluation can generate both categorical and variable outputs. Categorical outputs arise when crucially ranked constraints are spread far apart on the continuous scale, so that the stochastic variation in ranking values has no discernable effect. In Figure 4, for example,  $C_2 \gg C_1$  and the two constraints are

<sup>4</sup> The diagrams in Figures 3-6 are taken from Boersma and Hayes (2001) and Bresnan, Deo and Sharma (2007).

spread far enough apart that the bulk of their ranges of variation (illustrated in a simplified way by the ovals) do not overlap.<sup>5</sup>

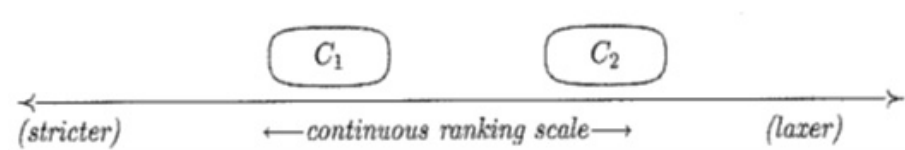


Figure 4. Categorical constraint ranking (no overlap) with ranges of variation

Variable outputs arise when crucially ranked constraints are close enough together for the variation in their ranking values to interact with some observable frequency. This possibility is illustrated in Figure 5, where the bulk of the ranges of variation of two constraints overlap. Here again  $C_1 \gg C_2$ , but with some discernable frequency during stochastic evaluation  $C_1$  will be ranked at a point in its lower range, call  $c_1$ , while  $C_2$  is simultaneously ranked at a point  $c_2$  in its higher range. As shown in Figure 6,  $C_2$  will then temporarily dominate  $C_1$  in selecting the optimal output, possibly producing a different output.

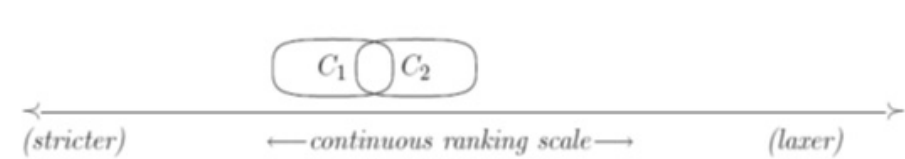


Figure 5. Free constraint ranking with ranges of variation

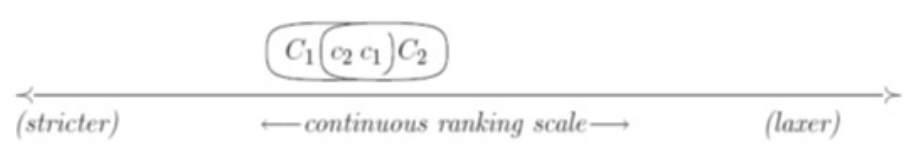


Figure 6. Reversal of constraint dominance

In this way, an 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

<sup>5</sup> Units of measurement are arbitrary. With standard deviation = 2.0, a ranking distance of 10 units between constraints are taken to be effectively categorical.

constraints are close together. Boersma & Hayes (2001) exemplify StOT with various empirical test cases of phonological variation, and recently it has been increasingly applied to the study of syntactic variation as well. Below, I extend the StOT model to variation in case marking of recipients of dative verbs in Korean.

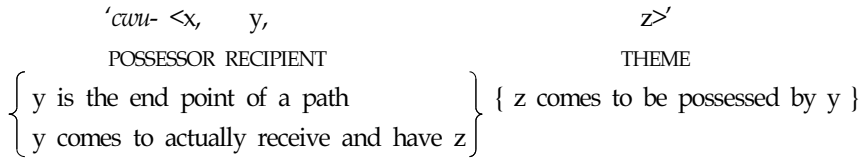
## 5.2. Modeling variation in case marking of recipients of dative verbs in Korean

Before moving on to a detailed account of the Korean data, let us consider the form of the inputs and the candidates that I will assume in this study. Here, I assume that the input in OT syntax consists of an a(rgument)-structure representing valence, entailment sets and the association between e(ntailment)-sets and valence slot. I further assume that an event structure associated with a verb is also part of the input. Therefore, the input representation is a pair of a-structure and s(emantic)-structure. This form of the input incorporates into the OT approach to argument realization the fundamental idea in lexical entailment-based approaches to argument realization that verb meaning can be thought of as an association of each of its arguments with a set of lexical entailments constituting its thematic role (Dowty 1989, 1991; Ackerman and Moore 1991; Beavers 2010).

As an illustration, the predicate argument structure of *cwu-* 'give' and *ponay-* 'send' used in sentences in (2a) and (3a) would be (23a) and (23b), respectively. This abbreviated format represents only the part of the argument structure relevant for the present discussion, omitting the entailment sets associated with the agent arguments of *cwu-* 'give' and *ponay-* 'send'. I posit the following sets of entailments constituting the roles POSSESSOR RECIPIENT, NON-POSSESSORIAL RECIPIENT and THEME.

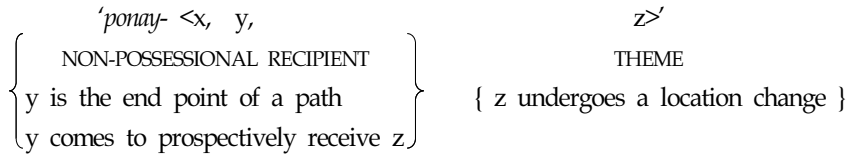
(23) Input a-structure and s-structure

a. a-structure:



s-structure: '[x ACT] CAUSE [y HAVE z]'

b. a-structure:



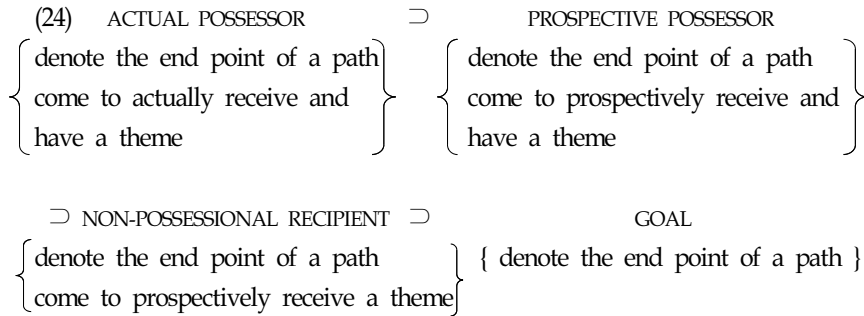
s-structure: '[x ACT] CAUSE [y RECEIVE z]'

As discussed in section 4, the recipient arguments of the two verbs share the entailment of denoting the end point of some abstract motion of the theme towards the recipient. They differ, however, in whether they are entailed to possess or have the theme. While the POSSESSOR RECIPIENT of *cwu-* 'give' comes to actually possess the theme at the end of the event, i.e., POSSESSOR RECIPIENTS are affected goals (as discussed in Jackendoff (1990: 267) and Hong (1991: 168)), NON-POSSESSIONAL RECIPIENT lacks the entailment of possession and is only entailed to have come to prospectively receive the theme.

Other caused possession verbs such as *ceykongha-* 'offer', *cikupha-* 'pay' and *kaluchi-* 'teach' do not entail actual possession for their recipient argument, and only entail prospective possession. Therefore, the truth conditions for being a POSSESSOR RECIPIENT entailed to actually have the theme are strictly stronger than for being a POSSESSOR RECIPIENT entailed to prospectively have the theme. I refer to the former kind of POSSESSOR RECIPIENT as ACTUAL POSSESSOR and the latter as PROSPECTIVE POSSESSOR. Both roles can be seen as a truth conditional strengthening of the roles of NON-POSSESSIONAL RECIPIENT and GOAL, which are not associated with the entailment of actual or prospective possession. Thus,



these four goal-type roles fall into a subset relation as in (24), forming an implicational hierarchy from strongest to weakest.



As argued by Beavers (2010), this lexical entailment-based model of argument structure provides a precise way of defining the notion of semantic prominence of an argument as strength of truth conditions (about what happens to the participants in the event) in this case defined as increasingly more or less specific constraints on the result state of the argument. As is well-known, the semantic strength of nominal arguments influences argument marking across languages (de Hoop 1996; Næss 2004; de Hoop and Narasimhan 2008; Beavers and Nishida 2010). Extensive crosslinguistic studies of ditransitive constructions by Kittilä (2006) and Malchukov, Haspelmath and Comrie (2010) suggest that languages differ systematically in the range of recipients allowed to receive direct case.

Kittilä (2006) observes that if a language has only one ditransitive verb taking two objects that are identically marked by direct case, it is always the recipient of 'give' that bears the same marking as the direct object. When a language has more such verbs, direct case marking extends to less canonical dative verbs that can express causation of prospective possession or receiving, most frequently to 'show', 'teach', and sometimes also to 'tell', 'send' and 'ask' (Malchukov, Haspelmath and Comrie 2010: 41). Thus, across languages, there is a consistent pattern of allowing stronger type of recipients to receive the same marking as the direct object. This pattern can be stated as a following implicational generalization: a language only shows the ditransitive construction with a recipient role at a given point on the hierarchy in (24) if it allows it for

roles to its left. But both Kittilä (2006) and Malchukov, Haspelmath and Comrie (2010) report no languages in which direct case marking extends to the lowest role on the hierarchy in (24), (non-affected) goal. The markedness constraint REC/DC introduced in section 4 captures the association of the semantic prominence of a recipient with direct case.

REC/DC must be conceived of as a family of constraints and not a single constraint. The constraints in (25) can be taken as instantiations of this constraint family.

- (25) a. A(CTUAL).POSS(ESSOR)/DC: Actual possessors receive direct case.  
 b. P(ROSPECTIVE).POSS(ESSOR)/DC: Prospective possessors receive direct case.  
 c. N(ON-)P(OSESSIONAL)REC(IPIENT)/DC: Non-possessional recipients receive direct case.

The association of a stronger recipient with direct case observed in many languages can be captured by assuming that the constraints in (25) form a constraint subhierarchy: while the ranking of constraints within a subhierarchy is fixed, individually they may be variously ranked with respect to other constraints.<sup>6</sup>

If we say nothing more, the subhierarchy in (25) will force direct case on all recipients. Since this is precisely what does not happen in languages like Korean, some constraint must penalize direct case on recipients. I assume that the relevant constraint is the FAITH(REC) constraint in (20), repeated here as (26).

- (26) FAITH(REC): Express the recipient role of a verb with a marker (case or adposition) that has possession meaning.

If the FAITH(REC) constraint in (26) dominates all the constraints in (25), then all recipients bear oblique marking. An example is a language like Japanese

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<sup>6</sup> A constraint subhierarchy appears in StOT as a hierarchy of the means of the normally distributed ranking values of the constraints. When the constraints are sufficiently spread out, effectively categorical predictions are made as with non-stochastic OT. When the constraints are closer together, frequentistic predictions above the margins of error are made.

where recipients of both caused possession verbs and caused motion verbs are marked with the dative case marker *-ni* (Miyagawa and Tsujioka 2004; Park and Whitman 2003; Levin 2010). Thus, in Japanese, FAITH(REC) is ranked higher enough than the constraints in (25) to suppress an alternation between DAT vs. ACC case on all recipients of dative verbs.

The constraint system of Korean speakers who accept only dative case on all types of recipients, which I call Korean A, resembles that of Japanese in that FAITH(REC) and the constraints in (25) are spread far apart on the continuous scale as in Figure 7 to produce a (near-)categorical output, dative marking of recipients.

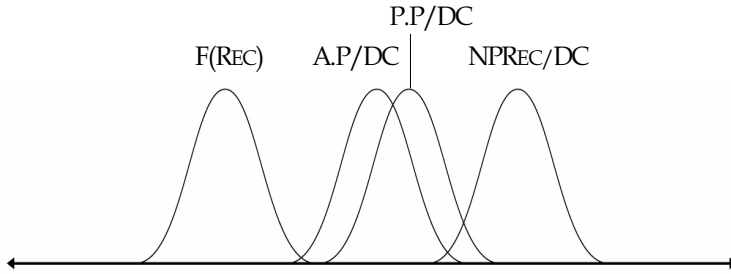


Figure 7. Partial stochastic grammar of Korean A

In OT, the ranking of constraints can be demonstrated by a tableau, in which the stronger or higher ranked constraints are listed to the left of lower ranked constraints: Tableau 1 below shows how the dative emerges as the optimal case for possessor. The input is the a-structure and the s-structure in (25a).<sup>7</sup> A function GEN generates possible candidates. Following Bresnan (2000), I assume that candidates in OT syntax consist of constituent structures (lexical strings and trees), morphosyntactic and semantic feature structures and their correspondence functions. Here, I consider only those candidates in which the grammatical function of the recipient is indirect object (IO) and that of the theme is direct object (DO), but we must assume that candidates in which the recipient is realized as other grammatical functions are generated by GEN.

<sup>7</sup> The ‘\*!’ indicates a fatal violation, which means that there is at least one other candidate which violates the constraints less. The optimal candidate (indicated by the ‘≡’) is the winner of the competition and the one which is picked as the optimal output for the given input.

Tableau 1. Case marking of ACTUAL POSSESSOR (Korean A)

Input = (23a)	FAITH(REC)	A.POSS/DC
a. S/NOM <sub>x</sub> IO/DAT <sub>y</sub> DO/ACC <sub>z</sub> V		*
b. S/NOM <sub>x</sub> IO/ACC <sub>y</sub> DO/ACC <sub>z</sub> V	*!	
c. S/NOM <sub>x</sub> IO/INST <sub>y</sub> DO/ACC <sub>z</sub> V	*!	*

In Korean A, FAITH(REC) is ranked higher than A.POSS/DC enough to suppress noticeable DAT vs. ACC alternation on possessor, eliminating the candidate with an accusative-marked possessor (candidate b) and the candidate with a possessor marked with oblique cases other than dative (e.g., instrumental case) (candidate c). Hence, the candidate with a dative ACTUAL POSSESSOR is selected as the winner.

For speakers who accept accusative case marking on POSSESSOR RECIPIENT, FAITH(REC) and the two higher ranking constraints in (25) are ranked closely enough to create a threshold of variation through noisy evaluations. I call a variety of Korean which allows accusative case marking on POSSESSOR RECIPIENT Korean B. The constraint system of Korean B can be characterized as in Figure 8. The higher ranking of FAITH(REC) over A.POSS/DC and P.P/DC would yield the candidate with a dative-marked POSSESSOR RECIPIENT (candidate a) as an optimal output in most evaluations, and thus captures the fact that dative case is the preferred option of realizing the role of POSSESSOR RECIPIENT. But when ranking reversals occurs occasionally, the candidate with an accusative-marked POSSESSOR RECIPIENT (candidate b) emerges as the optimal output. This is illustrated in Tableau 2.

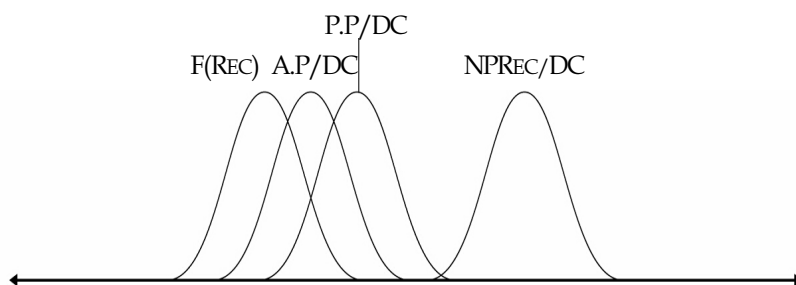


Figure 8. Partial stochastic grammar of Korean B

Tableau 2. Case marking of ACTUAL POSSESSOR (Korean B)

Input = (23a)	A.POSS/DC	FAITH(REC)
a. S/NOM <sub>x</sub> IO/DAT <sub>y</sub> DO/ACC <sub>z</sub> V	*!	
b. S/NOM <sub>x</sub> IO/ACC <sub>y</sub> DO/ACC <sub>z</sub> V		*
c. S/NOM <sub>x</sub> IO/INST <sub>y</sub> DO/ACC <sub>z</sub> V	*!	*

In both varieties of Korean, FAITH(REC) is ranked higher than NPREC/DC enough to suppress noticeable case alternation on NON-POSSESSIONAL RECIPIENT, eliminating the candidate with an accusative-marked NON-POSSESSIONAL RECIPIENT.

Tableau 3. Case marking of NON-POSSESSIONAL RECIPIENT (Korean)

Input = (23b)	FAITH(REC)	NPREC/DC
a. S/NOM <sub>x</sub> IO/DAT <sub>y</sub> DO/ACC <sub>z</sub> V		*
b. S/NOM <sub>x</sub> IO/ACC <sub>y</sub> DO/ACC <sub>z</sub> V	*!	
c. S/NOM <sub>x</sub> IO/INST <sub>y</sub> DO/ACC <sub>z</sub> V	*!	*

The same constraint ranking explains a categorical absence of the DAT. vs. ACC alternation on GOAL of caused motion verbs. This is illustrated in Tableau 4, showing the evaluation of candidates for the input which consists of the verb *ponay-* 'send' and its arguments (agent, goal and theme), i.e., the input for the Korean sentence in (27). Here, the REC/DC constraints do not play a role, and the realization of the GOAL argument is determined by FAITH(GOAL) requiring expression of the goal role of a verb by a marker that has goal meaning. Under the ranking shown in Tableau 4, the candidate with a dative goal is selected as the winner as it incurs no violation of the higher ranking case markedness constraint FAITH(GOAL).

Tableau 4. Case marking of GOAL (Korean)

Input:	FAITH(GOAL)	REC/DC
a-structure: 'ponay- < x, y, z > GOAL {end point of a path} x = Mina, y = Seoul, z = package  s-structure: '[[x ACT] CAUSE [z GO TO y]]'		
a. S/NOM <sub>x</sub> IO/DAT <sub>y</sub> DO/ACC <sub>z</sub> V		
b. S/NOM <sub>x</sub> IO/ACC <sub>y</sub> DO/ACC <sub>z</sub> V	*!	
c. S/NOM <sub>x</sub> IO/INST <sub>y</sub> DO/ACC <sub>z</sub> V	*!	

- (27) Mina-ka    sewul-ey    sopho-lul    ponay-ss-ta.  
 Mina-NOM Seoul-DAT package-ACC send-PAST-DECL  
 'Mina sent a package to Seoul.'

To summarize, the interaction of the constraint subhierarchy enforcing core marking more strongly on a stronger type of recipient, i.e., POSSESSOR RECIPIENT, and the constraint requiring the faithful expression of a recipient role in StOT provides a unified formal account for speaker variation and the grammatical gradience in case marking of recipients of dative verbs in Korean. In addition to accounting for these previously unexplained problems, the interaction of the same constraints explains why the acceptability of accusative case marking on recipients of Korean dative verbs becomes lower with weakening of the possession entailment, whereas the acceptability of dative case marking of recipients does not vary according to degrees of strength of entailments having to do with possession.

## 6. Conclusion

This paper has presented a Stochastic OT account of the morphosyntactic expression of recipients of dative verbs in Korean that can explain the hitherto unexplained problems of speaker variation and grammatical variation. I have

shown that the interaction of the constraint subhierarchy enforcing core marking more strongly on a stronger type of recipient and the constraints requiring the faithful expression of a recipient meaning in StOT provides a unified formal account for speaker variation and the grammatical gradience in case marking of recipients of dative verbs in Korean. This preliminary result provides new evidence for probabilistic approaches to argument realization where probabilistic constraints that relate an argument's semantic prominence and a morphosyntactic prominence contrast (direct vs. oblique marking) play a crucial role in argument realization. Whether the OT account I develop here can successfully extend to account for an OBL vs. ACC alternation on goal arguments of other caused motion verbs such as *chaywu-* 'fill' and *sit-* 'load' and motion verbs such as *ka-* 'go' and *ttena-* 'leave' I leave for future work.

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