THE INTERACTION OF LINGUISTIC, PRAGMATIC, AND SOCIAL FACTORS:
THE CASE OF DATIVES AND DITRANSITIVES IN THAI

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To my parents
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ABSTRACT

This dissertation explores the relationships among three major types of properties associated with argument structure constructions, i.e., linguistic, pragmatic, and social properties, through a case study of datives and ditransitives in Thai.

Data were obtained from two behavioral experiments and a corpus study. An analysis of the results based on the frameworks of Construction Grammar and the Variationist Approach shows that the dative and ditransitive constructions in Thai are associated with linguistic (distribution and meaning), pragmatic (NP weight and information structure), and social properties (register, age, and sex of speakers). These different types of properties distinguish the two constructions from each other and from other argument structure constructions existing in the language.

Previous studies on argument structure treat linguistic, pragmatic, and social properties as separate from each other. By investigating the relationships among all these properties, I argue that they not only influence the use of a construction independently, but they also interact in two manners. First, they have motivating interactions: the presence of a certain property is motivated by the presence of another property associated with the same construction. These properties may be of the same type (e.g., meaning motivating distribution), or of different types (e.g., register motivating NP weight). Second, different properties simultaneously influence the choice of a construction. Speakers have knowledge of alternating constructions, and their relative differences in entrenchment typically under the influence of linguistic factors. These differently-weighted forms result in different likelihoods of selection,
and these likelihoods are affected by pragmatic or social factors that come into play in a
given context.

Two aspects of linguistic knowledge beyond those normally accepted as part of
language capacity seem to be involved in the speaker's decision to choose the right
variant: knowledge of interactions and of probabilistic constraints. Traditional theories
place interactions and probabilities outside the realm of linguistic competence.
However, I present empirical evidence that calls that distinction into question. By
examining variation in the use of a construction in different contexts, I argue that
speakers require these two aspects of knowledge as parts of their linguistic competence
when making a choice between alternating constructions.
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<td>Adj</td>
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<td>Cl</td>
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CHAPTER 1
INTRODUCTION

1.1 Introduction

Traditionally, linguistic studies center on the syntactic properties of sentences and the syntactic explanations of particular sentence types. For example, Radford (1997), working within the framework of Minimalist Program, argued that a derivation of a linguistic expression involves various syntactic processes, including Select, Merge, and Move. He accounted for the derivation of sentences with double objects such as *Tom gave the teacher a present* as an illustration. After a set of relevant lexical items are chosen, they merge with each other step by step. First, the verb *give* merges with the patient object *a present*. This in turn merges with the recipient object *the teacher* to form the VP. Finally, the subject NP *Tom* merges with this VP. Once the merger completes, movement begins so that each lexical item appears in the proper Case and agreement forms. Differences among sentence types are thus mainly caused by these different rules of merger and movement.

More recent theories have moved beyond the syntactic properties of a sentence and investigated how a sentence form, also referred to as “argument structure,” can be determined by other properties, which include semantic, pragmatic, and social properties. For example, Carter and McCarthy (1999) studied *get*-passive sentences from an English corpus. They found a particular semantics associated with this argument structure; the *get*-passive is often used with an event interpreted as adversative or problematic from the speaker’s viewpoint (e.g., *He got killed*).

A number of studies emphasize the role of pragmatics in sentence structure. Lambrecht (1994) adopted the pragmatic term *focus* in his analysis of sentences, and
classified sentence structures into three types according to their communicative functions. These include the functions of commenting on a given topic of conversation (predicate focus), of identifying a referent (argument focus), and of reporting an event or presenting a new discourse referent (sentence focus).

On the other hand, several linguists are interested in sentence structure and social meaning. Prideaux and Baker (1986) examined the correlation between zero relative clauses, i.e., those without complementizers (e.g., the woman you met was my wife) and the socioeconomic status of the speaker. Their analysis of the dialog of two fictional characters representing different social classes showed that this type of relative clause is an index of the speaker’s socioeconomic status. Upper-class speakers tend to use the zero-relative clause less often than do lower-class speakers.

While the previous studies have contributed to the understanding of argument structure, their analyses are limited in certain respects. First, many of them are concerned with only one particular property of a sentence structure (e.g., Radford’s (1997) analysis of syntactic properties specific to double-object sentences; Prideaux and Baker’s (1986) finding of social meaning that correlates with the zero relative clause), and for those that involve more than one property, the properties often belong to the same type (e.g., Arnold et al.’s (2000) study of Heavy NP Shift and Dative Alternation in terms of heaviness and newness, two properties of the pragmatic type; Bresnan and Nikitina’s (2003) study of the effects of various pragmatic properties including discourse accessibility and animacy on the dative alternation in English).

Second, although some studies deal with different types of properties, they simply make a list of the properties and analyze the independent effect of each of the
relevant properties on particular argument structure (e.g., Weiner and Labov’s (1983) study of the independent effects of linguistic and social factors on English passive sentences; Adamson’s (1992) study of the independent effects of linguistic and social factors on English relative clauses).

Moreover, knowledge of sentence structure is traditionally assumed to be categorical, made up of rules that can be stated in absolute terms and apply deterministically in an appropriate context. For example, Radford (1997) proposed that interrogative sentences beginning with a wh-phrase in English must undergo two rules of movement. The first movement, head movement, involves movement of an auxiliary to the head C position of CP, which is located in the initial position of a sentence. The second movement, operator movement, involves movement of an operator expression (i.e., wh-expressions like where or who) from complement position within VP into specifier position of CP. These syntactic rules apply only when the head C position of CP contains the question affix Q, indicating that a sentence is intended to be a question. After the application of the rules, the underlying structure of sentences like John will go where? will have the surface structure in which the wh-phrase and the auxiliary verb move to the beginning of the sentence, i.e., Where will John go? Since wh-questions in English are generated by these two categorical rules, speakers must presumably have the knowledge of the rules in order to produce and understand this kind of interrogative sentence.

Due to the limitations of the previous studies on argument structure, two important questions remain unanswered. First, is there any interaction between different major types of properties that are associated with a sentence structure, i.e.,
linguistic (e.g., syntax, semantics), pragmatic (e.g., newness, heaviness), and social properties (e.g., the speaker's socioeconomic status, register)? Second, what does such an interaction tell us about the essence of "linguistic knowledge," defined in the present study as the knowledge that allows speakers to use language both grammatically and appropriately? In other words, does linguistic knowledge include only conventional units and categorical rules?

This dissertation aims to deal with the above questions. It investigates the interaction of three major types of properties — linguistic, pragmatic, and social — that have influence on the use of argument structure constructions. The study argues that (1) different types of properties interact: the presence of a certain property is motivated by the presence of another property associated with the same construction, and different properties simultaneously influence the choice of a construction; and (2) apart from conventional units and categorical rules, interactions and probabilities should also be considered as essential parts of linguistic knowledge.

1.2 Overview of dative and ditransitive constructions

The argument structure constructions that are the focus of this dissertation are datives and ditransitives. The dative refers to the structure that requires the presence of two object NPs; one of its objects is accompanied by a dative marker, which marks it as an indirect object. Like the dative, the ditransitive includes a verb that takes two objects as its complements; however, the two objects "have the characteristic form and/or positioning of direct objects" (O'Grady 2001:61). The first of the objects is often called the primary object and the other the secondary object. This construction

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1 The term "pragmatics" used in this study includes both contextual and processing factors. Thus, information structure and NP heaviness are considered as pragmatic factors.
appears only in some languages and typically with a limited set of verbs. The following are examples of datives and ditransitives in three different languages. In each language, the first example is in the dative form; the second is in the ditransitive form. Note that in the first two languages, the dative object is marked by a preposition; in the last language, it is marked by a particular dative case.

(1) **English**
I sent the letter to John.
I sent John the letter.

(2) **Indonesian** (examples from Chung 1976:41)
saja mem-bawa surat itu kepada Ali
'I brought the letter to Ali.'

(3) **Korean** (examples from O’Grady 2001:62 and 85)
mary-ka haksayng-tul-cykey chayk-ul cwu-ess-ta
'Mary gave books to the students.'

These two argument structures were chosen for several reasons. There are extensive studies on these constructions, and both have been claimed to possess not only syntactic properties but also semantic and pragmatic ones. Moreover, although the two constructions look quite similar in form and meaning, they are not always interchangeable. This suggests that the choice of one structure over the other may be influenced by the subtle interaction of different types of properties associated with each of the constructions.
There have been many studies on these two argument structure constructions in different languages, including English (e.g., Fillmore 1965, Erteschik-Shir 1979, Ransom 1979, Barss and Lasnik 1986, Larson 1988, Thompson 1990, Collins 1995, Polinsky 1998, Arnold et al. 2000, Levin and Rappaport Hovav 2002, Beck and Johnson 2004), Chinese (e.g., Chung and Gordon 1998, Chang 2001), German (e.g., Bader et al. 2000), Danish (e.g., Herslund 1986), Thai (e.g., Wilawan 1996), and Japanese (e.g., Sadakane and Koizumi 1995, Miyagawa and Tsujioka 2004). These works can be broadly divided into three approaches.

Syntactic approaches have looked at grammatical phenomena related to the two structures (e.g., Fillmore 1965, Barss and Lasnik 1986, Larson 1988, Hudson 1992, Wilawan 1996, Runner 2001). For example, Barss and Lasnik (1986), and Larson (1988) examined the asymmetrical relations in terms of the c-command relation between the two objects in both dative and ditransitive constructions in English. They found a number of important asymmetries in the behavior of the two objects, which indicate that in both structures, the second NP is in some sense in the domain of the first NP, but not vice versa. One cited phenomenon involves reflexives and reciprocals, which must be c-commanded by their antecedents. Datives and ditransitives show an asymmetry with respect to the licensing of anaphors.

(4) I showed Mary to herself.
   *I showed herself to Mary.

I showed Mary herself.
   *I show herself Mary. (examples from Larson 1988:338 and 336)
Similarly, negative polarity items must occur in the c-command domain of an affective element such as negation or a negative quantifier. Datives and ditransitives show asymmetries with respect to the licensing of a negative polarity item such as *any.

(5) I sent no presents to any of the children.
   *I sent any of the packages to none of the children.

I showed no one anything.
*I showed anyone nothing. (examples from Larson 1988:337-8)

A wh-phrase cannot in general be moved over another wh-phrase that c-commands it in underlying representation. Datives and ditransitives show an asymmetry in superiority effects.

(6) Which check did you send to whom?
   *Whom did you send which check to?
   (*To whom did you send which check.) (examples from Larson 1988:338)

(7) Who did you give which book?
   *Which book did you give who? (examples from Barss and Lasnik 1986:349)

These observations have led to several syntactic studies on the dative and ditransitive constructions in terms of the structural relation between the two objects at different levels of representation (e.g., Hudson 1992, Wilawan 1996, Runner 2001, Bruening 2001). They also have led to a theory that the two structures are transformationally related. That is, datives and ditransitives share the same underlying representation, and have distinct surface forms and also c-command relations due to application of different transformational rules (e.g., Larson 1988, Radford 1997).

Hudson's (1992) study focused on differences in the grammatical behavior of the first and second object NPs in ditransitive constructions. He observed a number of characteristics that ordinary objects in simple transitive clauses share with the second

\[\text{Barss and Lasnik commented that this sentence is grammatical only on the echoic reading.}\]
object, not the first object, in the ditransitive construction in English. For example, both the ordinary object of the mono-transitive and the second object of the ditransitive extract easily, but the first object doesn’t.

(8) Fred met someone.
   [Who]o did Fred meet __?

   We give children sweets.
   [What]NP2 do you give children __?
   ?[Who]NP1 do you give __ sweets? (258)

Moreover, the second object in the ditransitive construction can follow a particle as easily as ordinary objects can, but this is quite impossible for the first object.

(9) The secretary sent out [a schedule]o.
   The secretary sent the stockholders out [a schedule]NP2.
   ?The secretary sent out [the stockholders]NP1 a schedule. (259)

Like the ordinary object in the transitive structure, the second object in the ditransitive can control a depictive predicate, but the first object can’t.

(10) I ate [the meat]o raw.
     John gave Mary [the meat]NP2 raw.
     *The nurse gave [John]NP1 the medicine sick. (263)

Due to the differences in their syntactic behavior, Hudson concluded that compared to the first object, the second object in the ditransitive behaves more like ordinary objects in transitive clauses. Thus, it is the second NP after the verb, not the first NP, that is the “real object” in the ditransitive construction.

3 Hudson noted that there is variation in judgments among speakers. Some speakers find this sentence impeccable while some reject it. Emonds (1976) accounted for this variation in terms of rule ordering. He argued that the underlying structure of this sentence is the secretary sent a schedule out to the stockholders. For those who accept the above sentence in Example (9), indirect object movement applies before particle movement. After the application of the first rule, the IO moves forward and the particle ends up between the two objects, the secretary sent the stockholders out a schedule. Once particle movement applies, the particle precedes both objects, the secretary sent out the stockholders a schedule. However, for those who reject the sentence in (9), particle movement applies first. Since it produces a sentence in which the particle intervenes between the verb and the direct object, the structural description for IO movement is not met, and hence the sentence in (9) is unacceptable.
Similarly, Wilawan (1996) analyzed grammatical properties of the two objects in Thai ditransitives.\(^4\) In this language, the patient NP of the ditransitive verb always comes before the receiver NP.\(^5\) Her study indicated that the second object NP of the ditransitive in Thai (the receiver object), compared to the first object NP (the patient object), shares more syntactic properties with the ordinary object of the mono-transitive clause. One property she looked at was modification. Ordinary object NPs in a transitive clause can be modified by another NP, a phrase, or a clause. While such modification is possible for the second object of the ditransitive, it is quite impossible for the first object.

\[(11)\] narri ti [dek khon thii tho raak]O myawaan
Naree spank child Cl that she love yesterday
‘Naree spanked the child that she loves yesterday.’

narri caeek som [dek thii tho choop]NP2 myawaan
Naree give orange child that she like yesterday
‘Naree gave the child that she likes an orange yesterday.’

narri caeek [som thii tho pluu]NP1 dek myawaan
Naree give orange that she plant child yesterday
‘Naree gave the child the orange that she planted yesterday.’ (46-7)

Moreover, both the ordinary object in the transitive clause and the second object in the ditransitive clause can occur easily with a quantifier, but this is not always possible for the first object.

\(^4\) The English equivalent sentences in all of her examples were mainly intended to reflect the structure of the Thai sentences.\(^5\) This ordering of ditransitives in Thai will be discussed in detail in Section 1.3.
Finally, a passive form in Thai is typically regarded as a marked structure.

However, passivization of ordinary objects in transitive sentences and second objects in ditransitive sentences generally results in better sentences than passivization of the first object.

(12) นั้นฉันฟังกัน (ไม่เข้าใจ) เมื่อวาน
narii tii [dèk thûk khon]₀ (nay chán tho) mûwraan
Naree spank child all CI in class her yesterday
‘Naree spanked all children in her class yesterday.’

(13) ตัวอย่างประโยค
[dèk]₀ doon narii tii mûwraan
child Pv Naree spank yesterday
‘The child was spanked by Naree yesterday.’

(47) นั้นฉันฟังกัน (ไม่เข้าใจ) เมื่อวาน
narii caèek sôm [dèk thûk khon]₁ NP₂ mûwraan
Naree give orange child all CI yesterday
‘Naree gave all children oranges yesterday.’

(48) นั้นฉันฟังกัน (ไม่เข้าใจ) เมื่อวาน
narii caèek [sôm thûk lûuk]₁ NP₁ dèk mûwraan
Naree give orange all CI child yesterday
‘Naree gave children all oranges yesterday.’

(47) นั้นฉันฟังกัน (ไม่เข้าใจ) เมื่อวาน
narii caèek sôm [dèk thûk khon]₁ NP₂ mûwraan
Naree give orange all CI child yesterday
‘Naree gave children all oranges yesterday.’

Finally, a passive form in Thai is typically regarded as a marked structure.

However, passivization of ordinary objects in transitive sentences and second objects in ditransitive sentences generally results in better sentences than passivization of the first object.
Based on these observations, Wilawan concluded that the second object in the ditransitive in Thai functions as the direct object whereas the first object functions more like the indirect object of the main verb.\footnote{The ungrammaticality of sentences in Examples (11) and (12) can be explained by the effect of NP heaviness, a result found in the present study. Both unacceptable sentences in these examples contain a heavy NP1, and they become grammatical with the insertion of the dative preposition between the objects, which serves to separate the heavy object from the other object (see Chapter 4, Section 4.1 for more details). As for the case of passivization, both ditransitive sentences in Example (13) sound unnatural. Based on the semantic analysis in the present study, this is caused by the incompatibility of the meaning inherent to the passive construction in Thai, which is typically used with adversative or problematic events, and the meaning of the main verb \textit{ce\textcircled{r}ek} 'give, give out', which involves a beneficial act (see Chapter 3, Sections 3.1 and 3.2 for more details). These then cast doubt on Wilawan's conclusion. Is it the grammatical properties of the first object, or rather the effects of heaviness and the constructional meaning, that cause the sentences above ungrammatical?}

In sum, syntactic approaches have studied grammatical phenomena related to dative and ditransitive structures. Many of the studies in these approaches focus on the transformational relation between the two structures and also the structural relation between the two objects at different levels of representation. One important assumption usually found in these studies is that datives and their corresponding ditransitivies share the same meaning since they are from the same underlying structure. However, works under semantic approaches show that the analysis starting from semantic structure rather than syntactic structure reveals subtle differences in meaning between the dative and ditransitive constructions.

Semantic approaches have attempted to map a number of fine-grained semantic classes of verbs onto a unique syntax (e.g., Green 1974, Oehrle 1976, Gropen et al. 1989, Pinker 1989, Levin 1993, Goldberg 1992, 1995, Bruening 2001). One general idea that has appeared in a number of these approaches is that verbs that have allative
semantics are associated with the dative syntax whereas verbs with possessive semantics are associated with the ditransitive syntax (Bresnan and Nikitina 2003).

Gropen et al. (1989) and Pinker (1989), for example, proposed that the dative-ditransitive alternation is the result of a lexico-semantic rule that takes as its input a verb with the semantics, \textit{X causes Y to go to Z}, and produces the semantic structure, \textit{X causes Z to have Y}. The essence of the alternation is that verbs that occur in both dative and ditransitive forms can instantiate two "thematic cores" that are distinct and partially alike at the same time. A thematic core is defined as a semantic structure that constitutes "a schematization of a type of event or relationship that lies at the core of the meanings of a class of possible verbs" (Pinker 1989:73), and that via universal linking rules, projects onto a given argument structure. Thus, the semantic relation in (a) below is taken to be the real basis for the relation between corresponding dative and ditransitive sentences, whereas the syntactic correspondence in (b) is regarded as less basic, following from (a) by virtue of the linking rules that assign grammatical relations to particular semantic arguments.

\begin{itemize}
  \item[(a)] X causes Y to go to Z $\leftrightarrow$ X causes Z to have Y
  \item[(b)] _NP1 to NP2 $\leftrightarrow$ _NP2 NP1
\end{itemize}

Formulating the relation between the two constructions in semantic terms has the advantage of explaining the over-generation problem that arises with a purely syntactic account of the correspondence. Datives generally require the transmission of an object from one location to another. In contrast, ditransitives in general require the action of the subject to result in possession of the second object by an animate being. Violating these constraints affects the acceptability of sentences.
(14) *They spared that punishment to the policeman.  
*She carried the mailbox a letter. (examples from Pinker 1989:84)

The inadmissibility of the first example stems from the fact that the verb is asserting that the punishment does not go to the policeman, contrary to what the dative structure would require. Conversely, the ungrammaticality of the second example stems from the inability of the action to result in the mailbox possessing anything.

Gropen et al. (1989) and Pinker (1989) referred to the semantic constraints associated with the dative and ditransitive constructions, i.e., a change of location and transfer of possession, as “broad-range rules,” which specify general properties of the constructions, characterizing the broad semantic classes of verbs that are potential candidates for the alternation. However, these rules do not predict actual existence; grammar does not allow all the cognitively eligible verbs to participate in the alternation (Leek 1996). The function of predicting which specific verbs appear in which argument structures is the business of “narrow-range rules,” which classify verbs into narrowly defined semantic classes. The specific subclasses of the English ditransitive structure they proposed are the following:

1. Verbs that inherently signify acts of giving, e.g., give, pass, hand
2. Verbs of instantaneous causation of ballistic motion, e.g., throw, toss, kick
3. Verbs of sending, e.g., send, mail, ship
4. Verbs of continuous causation of accompanied motion in a deictically-specified direction, e.g., bring, take
5. Verbs of future having, e.g., offer, bequeath, leave
6. Verbs of type of communicated message, e.g., tell, show, ask
7. Verbs of instrument of communication, e.g., radio, email, fax
8. Verbs of creation, e.g., bake, make, build
9. Verbs of obtaining, e.g., get, buy, find

Thus, although the sentences below can be plausibly paraphrased as involving causation of possession, only the ditransitive pattern in the first pair is acceptable. The
narrow-range rules explain why *hit*, which is a verb of instantaneous imparting of force, can occur in both the dative and ditransitive constructions whereas *push*, a verb of continuous imparting of force, can occur only in the former construction.

(15) Joanna hit the ball to Harold.
Joanna hit Harold the ball. (= Joanna caused Harold to have the ball by hitting it to him.)

Joanna pushed the chair to Harold.
*Joanna pushed Harold the chair. 7 (= Joanna caused Harold to have the chair by pushing it to him) (examples from Baker 1992:405)

In support of Gropen et al.'s and Pinker's lexico-semantic theory, Levin (1993) noted the regular relationships between the syntactic behavior of verbs and their meaning. According to her study, verbs in English and other languages fall into classes on the basis of shared components of meaning. The class members have in common a range of syntactic and semantic properties, including the possibility of occurring in particular argument structures and the possible interpretation of their arguments. The differences in verb behavior can be explained if the diathesis alternations — alternations in the expressions of arguments — are sensitive to particular components of verb meaning. Specifically, verbs that show the dative-ditransitive alternation, i.e., verbs that can appear in both dative and ditransitive forms, are verbs of change of possession, with a few exceptions relating to the morphological or phonological shape of the verbs. Her proposed set of these verbs is rather similar to Gropen et al.'s and Pinker's. Examples include Give Verbs (e.g., *give, feed, lend*), Slide Verbs (e.g., *bounce, slide*), Verbs of Future Having (e.g., *allot, assign*), and Send Verbs (e.g., *hand, mail*).

7 Judgments of this sentence are varied. While Baker assured that it is ungrammatical, some English speakers found it perfectly good.
In sum, semantic approaches have distinguished the dative and ditransitive constructions in terms of meaning. The dative emphasizes the change in location of an object; the ditransitive puts more emphasis on the receiver's coming into possession of an object. While this semantic distinction can account for many cases of acceptability, the study of the structures from another perspective, i.e., informational approaches, reveals that the dative and ditransitive constructions differ not only in syntactic and semantic properties, but they also differ in properties related to pragmatics.

Informational approaches have differentiated datives and ditransitives on the basis of contextual and processing factors such as information structure, animacy, definiteness, and end weight (e.g., Erteschik-Shir 1979, Smyth et al. 1979, Ransom 1979, Givón 1984, Thompson 1990, Collins 1995, Davidse 1996, Arnold et al. 2000, Snyder 2001, Levin and Rappaport Hovav 2002). Smyth et al. (1979) reported experimental evidence for the influence on dative and ditransitive sentences of the given-before-new principle of English. Their study showed that subjects were able to report more accurately on the sentences that conformed to this principle of English than on those that did not.

Ransom (1979) studied the effects of definiteness and animacy of the object NPs on the acceptability of ditransitive constructions in English. She found that sentences are less acceptable if the first NP is lower on the definiteness and animacy hierarchies than the second NP. The constraints on definiteness and animacy, she argued, reflect pragmatic strategies that speakers use in discourse in order to distinguish old, presupposed information from new, asserted information. It is expected that old, presupposed information tends “to occur before other NPs,” and tends “to be human
and definite” (233). Phenomena like the dative alternation make it possible to arrange
the semantic information in the expected grammatical and linear patterns, allowing the
speaker to control the hearer’s attention. Thus, she concluded that these constraints are
not just linguistic strategies for dealing with the linear ordering of grammatical
relations but are also closely related to perceptual and discourse strategies, and they are
expected to occur in other languages as well.

Collins's (1995) corpus-based study of Australian English examined the effects
of informational factors such as end-weight, pronounhood, and definiteness on the use
of dative and ditransitive structures. The results showed that these factors mainly
influence the dative-ditransitive alternation. NPs representing receivers differ
significantly from one construction to the other, as do NPs representing entities.
Compared to the dative construction, a receiver NP in the ditransitive tends to be more
informationally given and an entity NP informationally new. Associated tendencies are
(1) the likelihood that a receiver NP will be a definite pronoun in the ditransitive
construction but a full NP in the dative construction; and (2) the likelihood that an
entity will be expressed by a full indefinite NP in the ditransitive construction but a
pronoun or a short definite NP in the dative construction.

Based on these tendencies, the first sentence of each pair below is considered
more natural than the second. In the first pair, the ditransitive structure takes the
definite pronoun *her* as the receiver and the full indefinite NP *some flowers* as the
entity. Similarly, the dative sentence in the second pair conforms to the informational
principles in the language; it takes the definite NP *the flowers* as the entity and the full
indefinite NP *an aunt* as the receiver.
Similarly, Bresnan and Nikitina (2003) argued that the choice of the dative or ditransitive variant is largely determined by informational factors, rather than semantic subclasses. By analyzing corpus data and web documents, they found many cases of the alternation that appear unusual according to semantic criteria. In the first example below, a verb semantically classified as non-alternating occurs in the ditransitive form; in the second example, a verb conventionally associated with the ditransitive is used in the dative construction.

(17) **verb of continuous imparting of force**
    He *pulled* himself a steaming piece of the pie. (6)

(18) **verb of prevention of possession**
    He did so thinking it would *cost* nothing to the government. (11)

Bresnan and Nikitina observed that “grammaticality judgments of contrasting pairs of examples may be systematically biased by the probability of similar descriptions of the event types depicted by the examples” (16). For example, English speakers are more likely to judge verbs of manner of speaking (e.g., *yell, mutter*) as less acceptable with the ditransitive syntax than verbs in the subclass of instrument of communication (e.g., *fax, email*) because the proportion of yelling or muttering that is described as communicative transfer of possession of information is much smaller.

Working within the framework of Optimality Theory, they proposed that what drives the dative alternation are in fact linguistic pressures to sharply differentiate ditransitives from datives on informational hierarchies, such as discourse accessibility,
animacy, pronominality, and person. For example, the *NP PRO Constraint in English says that personal pronouns like *it or *them "are avoided when following lexical NPs if both are objects" (18). Since this constraint is ranked very high on the informational hierarchies, the result is the very rare use of ditransitive sentences in which the second object is a personal pronoun (e.g., give Mary them) in the language.

In sum, informational approaches have added another insight to the study of datives and ditransitives; these approaches have concentrated on contextual and processing properties associated with the two structures. Two important findings of the studies under these approaches are that the two constructions can be differentiated by informational factors and that the choice of a construction depends heavily on these factors.

Therefore, during the past decades the dative and ditransitive argument structures have been studied from various viewpoints. However, like the case of other argument structures, most of these works have looked at these two constructions in one particular aspect, i.e., syntax, semantics, or pragmatics, and none of them has attempted to see the relationships between different types of properties that determine the use of one structure over the other. The study of the effects of three major types of properties, i.e., linguistic, pragmatic, and social properties, on the two structures, will lead us to a better understanding of the relationships and interaction of linguistic and non-linguistic properties associated with the constructions. In addition, by examining the choice of a construction in varied contexts, the study will reveal to us the essence of speakers' linguistic knowledge — the aspects of knowledge speakers require in order to choose the variant that is grammatical and appropriate to a given context.
1.3 Datives and ditransitives in Thai

The case study in this dissertation addresses datives and ditransitives in Thai. There are several reasons why I chose to study the two constructions in this language. In terms of language family, Thai belongs to a family different from English, a language with extensive studies on datives and ditransitives. Yet, so far there has been very little work on these constructions in Thai. The analysis of the constructions in Thai can be used as evidence for or against various approaches to the dative and ditransitive constructions, many of which are based on English data. For example, the study will test whether the semantic distinction or information structure found in English and related languages is a language-specific phenomenon or a characteristic inherent to the constructions across languages.

Moreover, the dative-ditransitive alternation has been of interest to many linguists due to its productivity constraints; the number of dative-ditransitive alternating verbs is limited and they appear only in a few languages. Since the number of these verbs in Thai is very limited, an account of datives and ditransitives in Thai will give us an insight of core characteristics that are specific to the two constructions.

In addition, the relationship between datives and ditransitives in Thai is different from other languages for two reasons. The first reason involves meaning. The use of the dative preposition in Thai *kab* is very restricted; it typically occurs only in the dative structure. In English, the dative preposition *to* is also used in some other contexts, which clearly indicate that it has a directional meaning (e.g., *he walked to the door, the town lies about 15 miles to the north of Bangkok*). Thus, the semantic
contrast between the two constructions in English (the presence vs. absence of the
directional sense) may not be found in the Thai constructions.

The second reason involves form, i.e., the ordering of the two objects. While in
many languages whose syntax allows the double objects, the primary object
corresponds to the recipient and the secondary the patient, in Thai the patient NP
always precedes the recipient NP, yielding the ditransitive pattern Verb + Patient +
Recipient.

(19) แพร่ให้ตัวนายด้วย
dāmān hāy cōtaīnay dam
Dang give letter Dam
‘Dang gave Dam a letter.’

This order of the two objects also occurs in the dative construction.

(20) แพร่ให้ตัวนายกับคาด้วย
dāmān hāy cōtaīnay kāmē dam
Dang give letter Dat Dam
‘Dang gave a letter to Dam.’

Thus, the dative and ditransitive in Thai are more similar than those in other languages;
the only overt difference in terms of form between the two structures in Thai lies in the
absence or presence of the dative preposition.

<table>
<thead>
<tr>
<th>English ditransitive pattern</th>
<th>English dative pattern</th>
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<tbody>
<tr>
<td>Verb + Recipient + Patient</td>
<td>Verb + Patient + to Recipient</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Thai ditransitive pattern</th>
<th>Thai dative pattern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verb + Patient + Recipient</td>
<td>Verb + Patient + to Recipient</td>
</tr>
</tbody>
</table>

8 The argument that the dative and ditransitive in Thai are different constructions with different forms is
strengthened by the impossibility of a preposition-drop analysis. In general, preposition drop in Thai is
impossible, e.g., ฉันเขียนด้วยปืน ‘I write with pen’ vs. *ฉันเขียนปืน ‘I write pen,’ หนังสืออยู่บนโต๊ะ ‘The book is
*ฉันรอที่ร้าน ‘I waited for him the store.’
Due to their unique relationship, it is interesting to see how the use of the constructions in Thai is different from English and other languages.

Finally, my preliminary study of data obtained from a corpus and native speakers' grammaticality judgments indicated that the dative construction is favored in formal contexts whereas the ditransitive construction is preferred in informal contexts. These two structures in Thai are thus expected to be associated with not only linguistic and pragmatic properties but they are also presumably associated with different social meanings, suggesting a case of syntactic variation.

Because of their distinct characteristics, the study of dative and ditransitive constructions in Thai will enable us to answer two important questions. Specifically, it will let us test whether and how the three major types of properties associated with the two argument structure constructions (i.e., linguistic, pragmatic, and social properties) interact with each other. That is, by examining each of the properties associated with the constructions and analyzing the relationships between them, we will see how these properties interact and whether the choice of a construction is influenced by such an interaction. In a broader respect, the study of Thai datives and ditransitives will reveal whether interactions and probabilities are essential components of linguistic knowledge. By investigating the choice of a construction in varied contexts, we will be able to tell whether speakers, when deciding to choose one construction over the other, employ different, interactive types of their linguistic knowledge as well as categorical and probabilistic rules of grammar.
1.4 Research questions

In sum, this dissertation will attempt to answer two sets of research questions. The first set is concerned with datives and ditransitives in Thai: (1) are the dative and ditransitive in Thai associated with different linguistic, pragmatic, and social properties; and (2) is there any interaction among linguistic, pragmatic, and social properties of these two argument structure constructions in Thai?

The second set of questions is concerned with interactions and probabilities as essential parts of linguistic knowledge: (1) do different types of linguistic knowledge interact; (2) do probabilities constitute linguistic knowledge; and (3) do speakers depend on different, interactive types of linguistic knowledge and probabilities in their decision to choose one clausal construction?

1.5 Outline and organization of the study

In order to answer the above research questions, I will divide the study into six chapters. Chapter 1 is the introduction. Chapter 2 provides theoretical background for the two major frameworks that will be the basis of my data analysis. The first framework, Construction Grammar, centers on the argument that constructions, form-meaning correspondences, are crucial to the description of language (Goldberg 1995). The theory argues for the notion of integrated information, i.e., the idea that there is no strict division between syntax, lexicon, semantics, and pragmatics; generalizations about structure, lexical items, meaning, and discourse are all part of a construction’s representation. Among various kinds of constructions, argument structure constructions hold a special interest in the theory; basic clause-level patterns are assumed to designate scenes essential to human experience. Thus, on this view, datives
and ditransitives are different constructions, distinguishing themselves from each other and from other constructions by their unique form, distribution, meaning, and also discourse information.

The second framework, the Variationist Approach, argues for a correlation between language and social meaning. A major aim of this approach is to show that variation in speech is constrained by not only internal but also external factors, which suggests that “social identities are transmitted simultaneously with linguistic structures” (Mendoza-Denton et al. 2003:97). Thus, according to this viewpoint, datives and ditransitives are expected to correlate with both linguistic and social determinants, and the choice of one construction over the other reflects not only the speaker's knowledge of grammatical structure but also the social context and/or his/her social stance relative to the conversation partner.

The next three chapters deal with the three major properties of datives and ditransitives in Thai. Chapter 3 explores their linguistic properties. The first part of this chapter investigates whether the two argument structures differ in their distribution, and which semantic subclasses of verbs can occur with each of the constructions. To answer these questions, data were collected from a paper-based experiment on grammaticality judgments. Subjects were divided into four groups according to two factors (sex and age): teenage females, adult females, teenage males, and adult males. Subjects saw a list of dative and ditransitive sentences containing verbs from various subclasses. They were asked to rate each of these sentences on a 1-5 scale. The results showed no great differences in distribution between the dative and ditransitive constructions in Thai. The ditransitive is likely to appear with verbs of semantic
subclasses that are directly associated with the sense of successful transfer, i.e., verbs of inherent acts of giving and verbs of communicated message. The dative is preferred to occur with various semantic subclasses of verbs. These subclasses may be associated with the basic sense of successful transfer, or they may encode extended senses of transfer, e.g., verbs of future having, verbs of creation.

The objective of the second part is to see whether datives and ditransitives in Thai differ in meaning. Data were collected from a paper-based experiment on description selection. This experiment is based on the hypothesis of semantic differences between datives and ditransitives in English; while the dative puts an emphasis on a change of location, the ditransitive focuses more on the notion of possession (Langacker 1986, Pinker 1989, Goldberg 1995). As in the first experiment, subjects were divided into four groups according to their sex and age. They saw a list of dative and ditransitive sentences. Each sentence was followed by two description statements, one consistent with the meaning of path, the other with the meaning of possession. Subjects were told to choose the statement that best described the sentence they had read. The results showed that there was no significant correlation between the Thai dative vs. ditransitive constructions and the path vs. possession meanings. Both constructions are more strongly associated with the meaning of possession than the meaning of path.

Chapter 4 examines two pragmatic properties, namely, heaviness and information structure, associated with the dative and ditransitive constructions. Data were collected from an on-line corpus provided by the Linguistics Department at Chulalongkorn University, and opinion boards available on the website Pantip. With
respect to NP heaviness, the length of the two objects — patient object and recipient object — in both structures was measured in terms of number of words. The analysis was done in two ways. First, the lengths of the patient object and the recipient object were examined separately. Each item was put into one of five groups according to the number of words either of its objects contained: one, two, three, four, and five or more than five words. Second, the lengths of the two objects were compared and analyzed together. The length of the patient object was examined whether it was longer than, shorter than, or equal to the length of the recipient object within the same sentence. The results of both methods of analysis indicated that there was a significant correlation between NP heaviness and the dative and ditransitive constructions in Thai. The longer either of the objects is, the more likely the dative is used. In contrast, the shorter the two objects are, the higher the tendency to use the ditransitive.

As for information structure, each of the two objects in all items was coded as one of three categories depending on whether its referent has been previously mentioned or could be inferred in the discourse: given, inferable, and new. The results showed that there was a significant correlation between the discourse status of NP2, in contrast to NP1, and the dative and ditransitive constructions in Thai. The newer the second object is, the more likely the dative is used. In contrast, the more discourse-given this object is, the higher the tendency to choose the ditransitive.

Chapter 5 investigates the effects of three social properties, i.e., register, sex, and age of speakers on Thai datives and ditransitives. For the factor of register, data from the on-line corpus, which contained news articles of serious topics such as economics, politics, and international relations, were classified as formal. In contrast,
data from Pantip, extracted from opinion boards on light topics of relationships, fashion, hobbies, health, and travel, were categorized as informal. The results of the study indicated that there was a highly significant correlation between register and the dative and ditransitive constructions in Thai. When the situation is formal, the dative is more likely to occur. In contrast, when the situation is informal, the ditransitive is more likely to occur.

With respect to sex and age of speakers, data were from the experiments of grammaticality judgments and description selection. The results showed that there was a significant correlation between the speaker’s sex, as opposed to the speaker’s age, and grammatical ratings of dative and ditransitive sentences. Men tend to rate sentences in both constructions higher than women.

Chapter 6 is the conclusion. It interprets the overall results of the study. The analysis of the relationships of the linguistic, pragmatic, and social properties indicates that these properties not only influence the constructions independently. Also, they interact with each other in two manners. First, the presence of one property may be motivated and thus can be predicted on the basis of the presence of another property. For example, the meaning associated with the constructions motivates the distribution of dative and ditransitive sentences. Second, different types of properties simultaneously influence the choice of a construction. Thus, the speaker’s decision to choose a construction is determined by not only linguistic but also pragmatic and social factors that come into play in a particular context. Moreover, examination of the choice of a construction suggests that speakers need to have knowledge of interactions and probabilities in order to choose the variant that is grammatical and appropriate in a
given context. The overall results of the study suggests a model of language similar to the usage-based model (Langacker 1987), in which linguistic competence is "intimately tied up with and ultimately inseparable from performance" (Kemmer and Israel 1994:165). As a result, both linguistic and non-linguistic features are part of the speaker's representation of grammar, and all simultaneously influence the use of a construction. Which construction is selected depends on the interaction of different types of factors and the relative probability associated with each of the alternating linguistic units.
CHAPTER 2
THEORETICAL FRAMEWORKS AND PREVIOUS STUDIES

This dissertation investigates the independent and interactive effects of three major types of properties associated with the dative and ditransitive constructions in Thai: (1) linguistic properties, i.e., distribution and meaning; (2) pragmatic properties, i.e., heaviness and newness; and (3) social properties, i.e., register, sex, and age of speakers. Accordingly, the study needs to be based on theoretical frameworks that allow for roles of all these properties in the representation of a grammatical pattern, and leave open a possibility of interactions among the different types of properties associated with the pattern.

Based on such criteria, the frameworks that I chose are Construction Grammar (CG) and the Variationist Approach. Since CG is a linguistic theory that rejects a strict division between syntax, semantics, and pragmatics (Goldberg 1995), it offers the possibility of studying linguistic and pragmatic properties inherent to datives and ditransitives in Thai. On the other hand, the variationist approach, which focuses on social factors that influence the use of language, is a good choice for examining the social meaning associated with each of the two argument structure constructions.

This chapter presents the theoretical backgrounds of CG and the variationist approach that are necessary to develop and evaluate the analysis of the Thai dative and ditransitive constructions in the next three chapters. The chapter consists of three main sections. The first section is concerned with CG: its notions about constructions in general, clausal types of constructions, and English dative and ditransitive constructions. The second section deals with the variationist approach: its perspectives on phonological variation and its recent study of syntactic variation. The third section
is the conclusion of the frameworks and their application to the dative and ditransitive constructions in Thai.

2.1 Construction Grammar

2.1.1 Notions about constructions in general

In the theory of CG, the basic units of language are taken to be form-meaning correspondences; these correspondences are called constructions (Lakoff 1987, Fillmore 1988, Goldberg 1992, 1995). By definition, a distinct construction exists if at least one of its properties is not strictly predictable from knowledge of other constructions existing in the grammar. It is a consequence of this definition that no strict division is assumed between the lexicon and syntax (Goldberg 1995). Words are constructions since their form is not predictable from their meaning or use. Lexical constructions and syntactic constructions differ in internal complexity and phonological forms, but words, morphemes, larger phrasal patterns, idioms, and syntactic constructions are all instances of form-meaning correspondences (Goldberg 2002a).

Having form-meaning pairings be the basic units of grammar further implies that syntax is not isolated from semantics. Moreover, CG looks for a correlation between a construction and pragmatic features; generalizations about particular arguments being topical, focused, inferable, etc. are also stated as part of the constructional representation (Goldberg 2002a). Facts about the use of entire constructions, including register, morphological shapes, phonological patterns, etc. are stated as part of the construction as well. Thus, a construction may be posited because of something not strictly predictable about its meaning, packaging of information structure, context of use, or other features associated systematically with the
construction. And this suggests a more precise definition of a construction that is implied in the theory, i.e., an association of form, meaning, and use.

Although constructions are unique pairs of form and meaning, they do not form an unstructured set. Rather, there are relations among constructions within a language. Generalizations across constructions are captured via an inheritance hierarchy, which allows shared structure to be represented (Kay and Fillmore 1999, Goldberg 1995, 2002a). For example, each of the patterns below requires a distinct construction of its own, owing to its particular formal and pragmatic properties.

(1) the woman who she met yesterday (restrictive relative clause)
    Abby, who she met yesterday (non-restrictive relative clause)
    Bagels, I like (topicalization)

At the same time, these constructions are related; they all inherit from the more general Left Isolate construction, which specifies the position of the NP object to be located on the left of the main verb.

CG is interested in both core and non-core phenomena in language. This means that relatively general constructions in language, such as the one licensing the ordering of subjects and verbs in English, and the more idiomatic patterns, such as the What’s X doing Y? construction, e.g., What’s the fly doing in my soup?, are equally important as data for which the grammar must provide an account (Kay and Fillmore 1999). Moreover, unlike Generative Grammar that typically provides transformational explanations for linguistic phenomena, CG is a monostratal theory of language; no underlying syntactic or semantic forms are posited in its account of constructions (Goldberg 1995).
2.1.2 Argument structure constructions

In many linguistic theories, the form and general interpretation of sentence patterns are determined by semantic and syntactic information specified by the main verb in the sentence. For example, *give* in *Mary gave John a ball*, is considered a three-argument verb, which is expected to appear with three complements corresponding to agent, recipient, and patient.

While it seems to be true that of all the words in a sentence, verbs are the ones that carry the most information about the syntax and semantics of the sentence, the predictive value of verbs with respect to syntactic and semantic information of the sentence may not be as strong as assumed by traditional linguistic theories (Bencini and Goldberg 2000). One reason is that verbs occur in many argument structure configurations, and the sentences in which they appear denote various event types. For example, *kick*, which is traditionally considered to be a prototypical transitive verb, can occur in many argument structure frames.

(2)  
1. Pat kicked the wall.  
2. Pat kicked Bob black and blue.  
3. Pat kicked the football into the stadium.  
4. Pat kicked at the football.  
5. Pat kicked Bob the football.  
6. Pat kicked his way out of the operating room.  

(Examples from Bencini and Goldberg 2000:641)

These sentences designate a variety of event types, i.e., simple transitive action (1), caused change of state (2), caused motion (3), attempted action (4), transfer of possession (5), and motion of the subject referent (6).

Moreover, close examination of argument structure configurations shows that they tend to be associated with systematic variations in meaning. Thus, instead of
predicting the surface form and interpretation mainly on the basis of the verb’s specification, CG posits that it is the argument structure that provides the direct link between surface form and general meaning of the sentence (Goldberg 2002a). In other words, abstract sentence patterns are regarded in the theory as one type of construction, which contributes directly to the overall meaning of the sentence.

A fundamental idea behind this approach to argument structure constructions, which is based on research on language acquisition (Clark 1978, Slobin 1985, Bowerman 1989), is that basic clause-level patterns designate humanly relevant scenes. This assumption is referred to as **Scene Encoding Hypothesis**.

Constructions which correspond to basic sentence types encode as their central senses event types that are basic to human experience (Goldberg 1995:39).

These event types are rather abstract and general, for example, someone experiencing something, something moving, something being in a state, someone possessing something, etc. (Goldberg 1995).

The following are examples of basic argument structure constructions in English, each consisting of a specific pair of form and meaning.

**TABLE 1. English Argument Structure Constructions (Bencini and Goldberg 2000:642).**

<table>
<thead>
<tr>
<th>Construction</th>
<th>Form</th>
<th>Meaning</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitive</td>
<td>Subj V Obj</td>
<td>X acts on Y</td>
<td>Pat opened the door.</td>
</tr>
<tr>
<td>Ditransitive</td>
<td>Subj V Obj1 Obj2</td>
<td>X causes Y to receive Z</td>
<td>Sue gave her a pen.</td>
</tr>
<tr>
<td>Resultative</td>
<td>Subj V Obj Complement</td>
<td>X causes Y to become Z</td>
<td>Kim made him mad.</td>
</tr>
<tr>
<td>Caused motion</td>
<td>Subj V Obj Oblique</td>
<td>X causes Y to move Z</td>
<td>Joe put the cat on the mat.</td>
</tr>
</tbody>
</table>

**2.1.3 Dative and ditransitive constructions**

As basic argument structure constructions, English datives and ditransitives are each argued to be associated with a particular meaning. The ditransitive, which
prototypically construes a scene as involving some object’s successful transfer from one party to another, has as its central sense the semantic structure *cause to receive*, whereas the dative variant, which is a type of caused-motion construction, is characterized as *cause to move* (Goldberg 1992, 1995, Leek 1996).

In her account of argument structure constructions, Goldberg (1992, 1995) employed both macro and micro roles, i.e., roles operating at constructional and individual verb levels respectively (Leek 1996). An argument structure construction has argument roles (i.e., macro roles), which correspond roughly to traditional thematic roles, such as agent, patient, instrument, source, etc. On the other hand, each distinct sense of a verb is associated with the frame semantics that specifies certain participant roles (i.e., micro roles), which refer to the number and type of slots associated with a given sense of a verb.

Verbs interact with argument structure through fusion (Goldberg 1995). The question whether Verb X fits into Construction Y depends on whether the macro roles (or the construction’s argument roles) and the micro roles (or the verb’s participant roles) can be “fused,” i.e., are semantically compatible. Thus, while in the lexico-semantic theory, verbs that appear in both dative and ditransitive forms possess two semantic structures; in CG, verbs typically have one basic meaning, and they can alternate between the two constructions provided their meaning can be integrated with each of the two constructional senses. This approach then alleviates the need for lexical rules or transformations to operate on either semantic or syntactic structure; it also avoids a proliferation of verb senses (Goldberg 1992).
The typical case of fusion is one in which the participant roles can be put in a one-to-one correspondence with the argument roles. For example, the three participant roles of *hand* in the figure below are fused compatibly with the three argument roles – agent, recipient, patient – of the ditransitive construction.

![Figure 1. Ditransitive + Hand (Goldberg 1995:51).](image)

However, there is no requirement that all argument roles fuse with participant roles; “constructions can supply a role of their own to the newly created predicate” (Leek 1996:324). Thus, there is no need to claim, as the lexico-semantic theory does, that when a verb like *kick* appears in the ditransitive *Bob kicked Bill a ball*, it has three semantic roles; instead, it comes only with a “kicker” and a “kicked” role, the ditransitive construction itself providing the recipient role.

![Figure 2. Ditransitive + Kick (Goldberg 1995:54).](image)

At the same time, Goldberg adopted an important aspect of Gropen et al.’s (1989) and Pinker’s (1989) theory – the need to circumscribe narrowly defined semantic subclasses of verbs, but these subclasses are regarded as subclasses that are conventionally associated with the construction, as opposed to subclasses that are
conventionally allowed to undergo a lexical rule (Goldberg 1992). Based on the
classification by Gropen et al. (1989) and Pinker (1989), Goldberg divided subclasses
of ditransitive verbs in English into various narrowly defined groups, such as verbs that
inherently signify acts of giving (e.g., *give, hand*), which are considered to be the
central sense since they are directly related to the constructional sense, verbs of
satisfaction condition (e.g., *promise, guarantee*), verbs of future having (e.g., *leave,
grant*), verbs of refusal (e.g., *refuse, deny*), etc.⁹

The differences in interpretation result from *principles of integration* between
the central sense of the construction and the different semantic subclasses of verbs
involved. These lexical items decide which sense of the ditransitive will be implied.
For example, expressions involving verbs of future having (e.g., *bequeath, offer*) imply
that the subject acts to cause the first object to receive the second object at some future
time. Expressions involving verbs of permission (e.g., *permit, allow*) imply that the
subject enables the transfer to occur by not preventing it, not that the subject actually
causes the transfer to occur. As to expressions involving verbs of refusal (e.g., *refuse,
deny*), the subject is understood to refuse to act as the cause of the transfer (Goldberg
1992). Figure 3 shows some senses of the polysemous English ditransitive
construction.

⁹ Ditransitives in English are also constrained by a morphophonological rule, which states that
polysyllabic verbs with non-initial stress are generally disallowed in the construction (Gropen et al. 1989,
Goldberg 1995). This constraint largely coincides with distinctions between Latinate and native
vocabulary, and between specialized and more basic vocabulary. Thus, although *buy* and *purchase* are
members of the ditransitive subclass that inherently signifies acts of giving, the latter cannot occur in the
ditransitive form since it does not conform to the morphophonological rule in the language.
Chris bought him some food.
*Chris purchased him some food. (examples from Goldberg 1992:41)
2.1.4 Conclusion

In sum, CG defines a construction as a pairing of form and meaning. Abstract sentence patterns are regarded as one type of construction since they contribute directly to the overall interpretation of a sentence. A major advantage of the constructional account of argument structure is that multiple verb senses are avoided. Verbs typically have one meaning. Verbs that can appear in both dative and ditransitive forms are those belonging to the subclasses which are conventionally associated with the constructions, and whose meanings are compatible with the meanings of the constructions, cause to move and cause to receive.
2.2 Variationist Approach

2.2.1 Earlier studies of language variation

A major topic in sociolinguistics is the study of language variation. In the past, the orientation of structural and generative linguistic theories discouraged the quantitative analysis of language behavior. Linguists did not try to find out about the principles of language variation and how it may be related to social setting (Fasold 1990). Moreover, linguists have traditionally been concerned with only one type of meaning, *referential* or *denotational meaning*, i.e., the property of linguistic expressions to identify particular objects, properties, or events in the world (e.g., the use of *guitar* in *John just bought a guitar*) (Duranti 1997). They assume that with the exception of indexical expressions such as *I, you, here, now*, etc., “denotational meanings are shared, that is, they remain constant across speakers and over time and space” (Duranti 1997:163).

Studies of variationist sociolinguistics have introduced a new way of studying language and meaning. These studies are predicated on two assumptions: “(1) language systematically varies across social contexts and (2) such variation is part of the meaning indexed by linguistic structures” (Ochs 1992:337-8). The meanings so indexed are referred to as *social meanings*, in contrast to referential meanings of the purely syntactic theory. Variationists try to relate particular structures to particular social conditions. Thus, the concept of “free variation,” i.e., the random use of alternate forms, has been replaced by “structured heterogeneity.” That is, language contains systematic variation which can be characterized and explained by patterns of social differentiation within speech communities (Mesthrie et al. 2000). It follows
from this that two variants with an identical reference may convey different social meanings, e.g., stylistic differences or differences in social class or ethnicity of speakers.

An early study done by Fischer (1958) illustrated the social implications of a linguistic variable. His work showed that variation between [ing] and [in] as in fishing or fishin in a group of children in New England was influenced by social factors. He noticed the correlations between the use of one form over the other with specific characteristics of the children or of the speech situation. For example, girls used more –ing than boys; “model” boys (those whose habits were approved of by teachers) used more –ing than “typical” boys (those whose habits made them less favored by teachers); children tended to use the reduced form –in when talking among themselves than when talking to adults. He concluded that “the choice between the [ing] and the [in] variants appear to be related to sex, class, personality (aggressive/cooperative), and mood (tense/relaxed) of the speaker, to the formality of the conversation and to the specific verb spoken” (51). In particular, his observation that people adopt a variant not simply because it is easier to pronounce, but because it expresses how they feel about their relative status versus other conversants’ has become a central tenet of variationist sociolinguistics (Mesthrie et al. 2000).

Earlier studies of linguistic variation concentrated on phonological variables. Most of the advances in studies of variation were inspired by the work of Labov (Fasold 1990, Mesthries et al. 2000), who took some of Fischer’s concerns further as well as developed new methods of studying variation. One of Labov’s most influential studies, the New York City study, published in 1966, showed that if any two groups of
speakers are ranked in a scale of social stratification, they will be ranked in the same order by their differential use of certain linguistic variables. One of the variables he studied was \( r \) after vowels in words such as car and dark. His method of intensive interviews was conducted on an individual basis and involved four types of activities: (1) continuous speech in response to the interviewer's questions, (2) reading a short passage, (3) reading a list of words containing instances of pertinent variables, and (4) reading pairs of words involving key variables. Labov argued that moving from (1) to (4) corresponds to increasing formality and focus on language itself. In grouping his speakers, he used a ten-point socioeconomic scale, based on three equally weighted indicators of status: occupation of bread-winner, education of respondent, and family income. On a ten-point scale, 0-1 was taken as lower class, 2-4 as working class, 5-8 as lower middle class, and 9 as upper middle class. His analysis showed that the presence or absence of postvocalic \([r] \) varied in predictable and measurable ways. The main findings of this study can be summarized as below.

- New Yorkers ranked on a hierarchical scale by non-linguistic criteria follow the same scale in \((r) \) usage.
- The differences between the groups are not categorical; no group is characterized by the complete presence or absence of postvocalic \([r] \).
- At the level of informal speech, only the UMC shows a significant degree of \( r \)-pronunciation. Thus, generally speaking, the pronunciation of \([r] \) functions as a marker of the highest-ranking status group.
- All groups show an increase when moving from informal to more formal styles. Thus, the variable marks not only status but style as well.
Generally speaking, the New York study showed that social factors cannot be ignored in studies of language. Moreover, Labov's study presented evidence that differences in phonetic form which had often been analyzed as unmotivated and free were in fact carriers of some significance, social and stylistic.

Following Labov's quantitative methods in the analysis of phonological variation, Wolfram and Fasold (1974) studied t/d deletion in Detroit Black speech. They noticed that final consonant clusters in English tend to be simplified; words such as test or missed may be pronounced as tes or mis. They looked at factors that might influence such deletion, and found that the percentage of final t/d was varied under different conditions.

<table>
<thead>
<tr>
<th>Environments</th>
<th>Social classes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Upper middle</td>
</tr>
<tr>
<td>With a following vowel:</td>
<td></td>
</tr>
<tr>
<td>t/d is past morpheme</td>
<td>0.07</td>
</tr>
<tr>
<td>(e.g., missed in)</td>
<td></td>
</tr>
<tr>
<td>t/d is not past morpheme</td>
<td>0.28</td>
</tr>
<tr>
<td>(e.g., mist in)</td>
<td></td>
</tr>
<tr>
<td>With a following consonant:</td>
<td></td>
</tr>
<tr>
<td>t/d is past morpheme</td>
<td>0.49</td>
</tr>
<tr>
<td>(e.g., missed by)</td>
<td></td>
</tr>
<tr>
<td>t/d is not past morpheme</td>
<td>0.79</td>
</tr>
<tr>
<td>(e.g., mist by)</td>
<td></td>
</tr>
</tbody>
</table>

Like Labov's New York study, the data showed patterned variability. Both the linguistic factors, i.e., whether the cluster is followed by a vowel or a consonant and
whether the final member of the cluster is itself the past tense morpheme, and social
d factors, i.e., socioeconomic classes of speakers, have an effect on the deletion. Final t/d
are most likely to be deleted when they are followed by a consonant and when they are
not a past morpheme; the rate of deletion becomes higher as we move from the higher
socioeconomic class to the lower class status. Therefore, Wolfram and Fasold’s work
clearly reflects a major aim of the variationist approach — to show that variation in
speech is constrained by both linguistic and social factors.

2.2.2 Variation on the level of syntax

Sankoff (1973) presented a paper *Above and beyond phonology in variable rules*, in which she proposed to extend the scope of the study of variation to syntax.

The extension of probabilistic considerations from phonology to syntax is not a
conceptually difficult jump... underlying probabilities are consistently and systematically
patterned according to internal (linguistic) and external social and stylistic constraints.
There is no reason not to expect similar patterning elsewhere in the grammar (58).

Sankoff supported her suggestion with the deletion of the complementizer *que* in
Montreal French. She noticed that the presence or absence of *que* is differently
allowable in different grammatical constructions, such as *comme que*, *quand que*,
*pourquoi que*, *ce que*, etc. Sankoff’s remark and her study of *que*-deletion can be
considered as a starting point for the study of syntactic variation.

However, Lavandera (1978) pointed out a problem of “semantic sameness” in
the study of syntactic variation. According to Labov, “social and stylistic variation
presupposes the option of saying the same thing in several different ways: that is, the
variants are identical in reference or truth value, but opposed in their social and/or
stylistic significance” (1972:271). The main difference between phonological and non-
phonological variables is that while the former need not have referential meaning, the
latter do carry referential meaning. For example, we can say that *laughing* and *laughin*
or *[gɑrd]/ and *[ɡaːd]/ are used to say referentially the same thing. In contrast, we may
not say the same with two different syntactic constructions, such as active and passive
sentences, since they may not have the same referential meaning. To solve the
problem, Lavandera proposed to relax the condition of semantic equivalence in the
study of syntactic variation, and suggested that two non-phonological elements can be
considered as variants when two conditions hold. First, “they can be proven to be the
carriers of some non-referential information, to have social and stylistic or other
significance.” Second, “they prove to be a kind of device of the language similar to
phonological variables, that is, elements whose defining property is a quantifiable
covariation and for which the frequency relationships are the very signals of those
differences” (181).

To give an example, Lavandera referred to the study by Sankoff and Thibault
(1977) on the use of the two auxiliaries in French, * être* and *avoir*. It was argued in this
study that in some contexts the choice of * être* instead of *avoir* is not promoted by the
need to mean one thing instead of another, rather it is affected by the social constraint
involving the speaker’s place in the linguistic market. That is, speakers for whom the
use of French is of high importance in the work domain (i.e., those with high linguistic
marketplace indices) use more *être* compared to speakers with lower linguistic
marketplace indices.

As far as I know, there has been no variationist work on dative and ditransitive
constructions. However, there are quite a few studies that have looked at two
comparable argument structure constructions and listed different external and internal factors that constrain the use of each of the constructions. The following two examples will give us some idea of how the variationist approach studies variation on the level of argument structure constructions.

Adamson (1992) compared relative clauses with and without complementizers. He observed the use of relative clauses in the interview speech of 17 adult speakers. The results showed two factors significant to the choice of the two variants. The first factor involves the position of the gap. For example, subject position strongly disfavors the zero complementizer: there are small percentages of zero relatives with subject focus, e.g., *The man [__ saw you] is my neighbor.* The second factor is the socioeconomic class of speakers. Upper class speakers produce fewer zero relatives than do working class speakers. Adamson's justification of the different behaviors between upper and lower class speakers was based on Kroch (1978)'s *Status Hypothesis.* According to this hypothesis, prestige dialects are more likely to contain phonetic variants that are marked and contrary to universal tendencies than non-prestige dialects; the reason speakers of prestige varieties are willing to exert this extra effort is social/political. The relative clause with the complementizer is more prestigious since *that* is a perceptually weak segment that is more susceptible to loss in popular dialects than in prestige dialects.

Rickford et al. (1995) studied the variable absence of the verb (*be concerned*, *go*) in *as far as* constructions which serve as qualifiers or topic restrictors in English, for example,

(3) As far as the organized resistance is concerned, that's pretty much taken care of. As far as the white servants ____, it isn't clear. (102)
Their data were from a corpus which included speakers and writers from several countries and from a wide variety of socioeconomic, ethnic, and regional backgrounds. They examined potential constraints on this variation, such as syntactic complexity, number of words and prosodic structure of the NP following *as far as*, position of the *as far as* phrase in the sentence, age and sex of speakers/writers, etc. The results showed significant effects for linguistic and social variables. The internal effects are relevant to Heavy NP Shift and other weight-related phenomena. That is, the verb is more likely to be absent following more complex NPs, by which complexity refers to syntactic structure and/or number of words. At the same time, diachronic data and the evidence of synchronic age distributions and usage commentators show that the verbless variant has become markedly more frequent in recent decades, suggesting a pattern of syntactic change in progress.

2.2.3 Conclusion

In sum, the variationist approach aims to associate language with social meanings; individual speakers choose linguistic forms “in order to locate themselves in a highly complex multi-dimensional social space” (Hudson 1980:140). Unlike the methods used in some other areas of linguistics, those deployed by variationists are empirical in nature and require some quantitative patterns to draw conclusions about speaker competence (Mendoza-Denton et al. 2003). Although a large number of studies on language variation center on phonological variables, there are several works that deal with variation on the level of syntactic constructions. Like studies of phonological variation, works on syntactic variation typically look at two comparable forms, and examine each of internal and external factors that may influence the choice
of the variable. All in all, studies in this approach suggest that a speaker has choices to make when selecting whether to release a word-final stop, whether to pronounce the postvocalic [r], which words to use, as well as which sentence form to say. These choices are made on the basis of both linguistic and social environments, hence they are "manifestations of the subtle patterning and interactions of linguistic and social competence" (Mendoza-Denton et al. 2003:99).

2.3 Conclusion of the frameworks and their application to the Thai constructions

CG's approach to the dative and ditransitive constructions has focused on "partial productivity," i.e., the observation that the constructions are restricted to only certain groups of verbs. CG's account of this phenomenon, which is primarily concerned with the English constructions, involves a range of semantic subclasses of verbs that can appear with the constructions and the meaning associated with the constructions. The analysis of the linguistic properties specific to the dative and ditransitive constructions in Thai – distribution and meaning – can be based on this account.

As for the pragmatic properties, although so far CG's account of the dative and ditransitive constructions have not paid much attention to these properties, a key assumption underlying the theory offers a possibility of including pragmatics as part of the constructional representation. That is, a construction can be identified by unique syntactic, semantic, and also pragmatic characteristics (Goldberg 1995, 2003). Thus, the study of two pragmatic properties, heaviness and newness, of the dative and ditransitive constructions in Thai can start with this assumption, and the analysis is
based on previous studies of argument structure and pragmatics (e.g., Prince 1992, Lambrecht 1994, Goldberg 2003).

On the other hand, variationist studies of syntactic variation, which examine social meaning that correlates with syntactic constructions, provide a good illustration for the investigation of social properties associated with the constructions in Thai. Each of three social properties – register, sex, and age of speakers – is analyzed in terms of its effects on the constructions and how variation in the use of the constructions is caused by these social factors.

Taking the two frameworks together, the analysis of the present study is done on the basis of the following assumptions. First, a construction is distinguished from others by its own unique properties; these properties can be linguistic, pragmatic, and social properties. Second, each of these properties influences the choice of a construction. Third, speakers have the knowledge of these properties in order to choose the variant that is grammatical and most appropriate to a given context. Based on these assumptions, the study of the dative and ditransitive constructions in Thai attempts to prove that (1) the different types of properties associated with the constructions interact with each other; and (2) speakers must have the knowledge of interactions and probabilities when making a choice between alternating argument structure constructions.
CHAPTER 3
LINGUISTIC PROPERTIES OF DATIVES AND DITRANSITIVES IN THAI

One of the important topics in the studies of dative and ditransitive constructions is the restriction of the dative-ditransitive alternation to certain classes of verbs. Among various approaches to this alternation, a number of studies have provided an explanation that relates to two linguistic properties. That is, the limited distribution of the constructions is in part a result of the meaning associated with dative and ditransitive sentences; this meaning determines which verbs can or cannot be in the dative and ditransitive forms. While some of these studies consider the main verb as the source of the meaning (e.g., Gropen et al. 1989, Pinker 1989, Levin 1993), others associate the meaning directly with each of the two constructions (e.g., Goldberg 1995, Bencini and Goldberg 2000, Kaschak and Glenberg 2000).

As a constructional approach, CG treats distribution and meaning of argument structure constructions as closely related. In this theory, each construction is directly associated with a particular meaning, and it can occur with only subclasses of verbs whose meaning is compatible with the constructional sense. Accordingly, it is argued that in English the dative construction denotes a caused motion (or “cause to move”), while the ditransitive construction has the meaning of possessive transfer (or “cause to receive”). Verbs that can occur in the dative and ditransitive forms must have the meanings relevant to these meanings of the constructions. CG considers the relation between form and meaning as consistent, conventional, and arbitrary. Thus, the theory allows differences across languages in the association between one particular construction and one particular meaning, which makes it possible for a construction to occur with different sets of verbs in different languages.
The objectives of this chapter are to investigate the two linguistic properties – distribution and meaning – of datives and ditransitives in Thai, and to determine whether the two constructions are distinguished by these properties. The questions that are the focus of the chapter are (1) which subclasses of verbs can occur in the constructions in Thai; (2) is each of the Thai constructions associated with a particular meaning; and (3) based on CG’s approach to distribution and meaning, how can we explain the relation of these two linguistic properties in Thai?

In order to answer the above questions, two experiments were conducted. The first experiment, using grammaticality judgments, aims to know which verbs can occur in the dative and ditransitive constructions in Thai. The second experiment, based on description selection, tests whether the two constructions in Thai differ in referential meaning.

The chapter consists of three main sections. The first section discusses the first experiment, and serves to answer the question of distribution. The second section discusses the second experiment, and serves to answer the question of meaning. The third section summarizes the results of the two experiments and examines the relation of distribution and meaning specific to each of the constructions in Thai.

3.1 Distribution of Thai dative and ditransitive constructions

3.1.1 CG account of distribution

This section deals with the general question of how CG gives an account of the distribution of argument structure constructions, and the more specific question of how the theory, primarily based on English data, explains the restricted distribution of the dative and ditransitive constructions. The purpose of the section is to provide
background relating to CG’s perspective on the distribution before discussing in the
next section how the theory can account for the constructions in Thai.

It has been a long standing puzzle why the dative-ditransitive diathesis is
somewhat but not completely productive (Goldberg 1992). Verbs used in dative and
ditransitive structures can generally be divided into three groups, according to their
ability to alternate between the two forms: those that can appear in the two alternative
structures, those that are used only in the dative, and those that occur only in the
ditransitive construction. Consider the following dative and ditransitive sentences in
English as examples, and note the effect of the main verbs on the grammaticality of
these sentences.

(1) **Verbs which alternate**
    Hal *told* a story to Sue.
    Hal *told* Sue a story.
    John *gave* a gift to Mary.
    John *gave* Mary a gift. (examples from Gropen et al. 1989:204)

(2) **Verbs which take only the dative form**
    *I presented* the award to him.
    *?I presented* him the award.
    I *pulled* the box to John.
    *?I pulled* John the box. (examples from Gropen et al. 1989:244)

(3) **Verbs which take only the ditransitive form**
    Please *spare* me your sarcasm.
    *Please spare* your sarcasm to me.
    That remark might *cost* you your job.
    *That remark might cost* your job to you.\(^{10}\) (examples from Gropen et al.
    1989:242)

\(^{10}\) Note that this verb shows the reversed pattern in the nominalization, e.g., *at the cost of a job to john.*

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The differences among verbs in terms of distribution are found not only in English but in other languages as well. Li and Thompson (1981) categorized verbs used in dative-ditransitive constructions in Mandarin into three classes according to whether they can take the dative preposition *gei*.

(4) **Verbs which alternate (gei-optional)**

\[
\begin{align*}
\text{he} & \quad \text{send to me one Cl book} \\
\text{‘He sent one book to me.’}
\end{align*}
\]

\[
\begin{align*}
\text{he} & \quad \text{send me one Cl book} \\
\text{‘He sent me one book.’} & \quad \text{(examples from O’Grady 2001:61-2)}
\end{align*}
\]

(5) **Verbs which take only the dative form (gei-obligatory)**

\[
\begin{align*}
\text{he} & \quad \text{mail to me one Cl book} \\
\text{‘He mailed one book to me.’}
\end{align*}
\]

\[
\begin{align*}
\text{he} & \quad \text{mail me one Cl book} \\
\text{‘He mailed me one book.’} & \quad \text{(examples from O’Grady 2001:62)}
\end{align*}
\]

(6) **Verbs which take only the ditransitive form (gei-forbidden)**

\[
\begin{align*}
\text{he} & \quad \text{give Pfv Mary one Cl book} \\
\text{‘John gave Mary one book.’}
\end{align*}
\]

\[
\begin{align*}
\text{he} & \quad \text{give Pfv one Cl book to Mary} \\
\text{‘John gave one book to Mary.’} & \quad \text{11}
\end{align*}
\]

Generally, the ditransitive is far more constrained than the dative (Wolfe-Quintero 1998). In English, for example, there are many dative verbs, but there are many fewer ditransitive verbs. However, in spite of constraints on productivity, the

---

11 Chung and Gordon (1998) gave a reason why the Chinese verb *gei*, which is equivalent to the very typical alternating verb *give*, can only takes the ditransitive form exclusively. According to their analysis, it is very likely that the verb *gei* cannot take *gei* as a “coverb” (i.e., a preposition that is also a verb or else derives from a verb) in order to avoid a repetition.
dative-ditransitive syntax can be extended to new verbs. For example, new lexical items like *email* and *fax* can be used in the ditransitive pattern, as in:

(7) Chris emailed him a message.  
    Joe faxed Bob the report. (examples from Goldberg 1992:41 and 38)

Also, hypothetical verbs are readily adapted to either of the constructions. Marantz (1984) gave an example of the hypothetical verb *shin*, meaning "to kick with the shin." On this sense, it is quite natural to allow this verb to appear in both constructions.

(8) Joe shinned the ball to his teammate.  
    Joe shinned his teammate the ball. (177)

Early syntactic theories were not interested in the productivity constraints of the two argument structures. More recent theories including CG, however, focus on these constraints in their account of argument structure constructions. As mentioned earlier, CG provides semantic explanations for the distribution of the dative and ditransitive constructions, by associating each structure with a specific central sense, and by postulating separate related senses which make reference to specific verb classes. That is, verbs that can appear in the dative form are those belonging to the semantic subclasses relevant to the central sense of the construction, X causes Y to move Z; verbs that can be used in the ditransitive are members of the subclasses semantically compatible with the constructional meaning, X causes Y to receive Z.

This semantic view allows creativity in language: as long as new or hypothetical verbs denote the meaning that can be integrated with a constructional sense, they will be allowed to occur in the construction. At the same time, the various senses of verbs, or alternatively, the principles of integration between the sense of the
construction and particular verb subclasses, are not always predictable and must be conventionally associated with the constructions (Goldberg 1992). For example, it is not predictable that in English verbs of communicated message, such as tell and show, are allowable in both dative and ditransitive forms while apparently similar verbs, i.e., verbs of manner of speaking, such as shout and whisper, are not usually allowable in the ditransitive construction. Thus, like Gropen et al.’s (1989) and Pinker’s (1989) theory of broad-range and narrow-range rules, CG account of distribution includes both systematic predictable patterns (i.e., the constructional sense and the semantic integration between the construction’s meaning and the verb’s meaning) and arbitrary aspects (i.e., unpredictable behaviors of certain verb subclasses with apparently similar semantics) in language.

Goldberg (1997) examined the use of verbs in argument structure constructions and found a range of possible semantic relationships that the verb can bear to the construction. According to her analysis, the most prototypical case is that in which the verb designates an elaboration of the meaning of the construction, i.e., the verb’s meaning determines or projects the meaning associated with the entire sentential frame. For example, verbs like put lexically code the meaning of the caused-motion construction whereas verbs such as give or pass lexically code the meaning specific to the ditransitive construction.12

(9) Laura put the book on the table.
     (caused-motion: X causes Y to move Z = put)

12 As mentioned in Chapter 2, Section 2.1.3, CG classifies the dative construction as a type of caused-motion construction.
Hana gave/passed Martin the salt.  
(ditransitive: X causes Y to receive Z = give, pass) (386)

Less common are cases wherein the verb does not itself lexically designate the meaning associated with the construction, but it codes the means of achieving the act designated by the construction. In the examples below, sneezing is the means of achieving caused-motion while kicking is the means of achieving transfer.

(10) Elena sneezed the foam off the cappuccino.  
Amy kicked Paul the ball. (387)

In certain cases, the verb may deny the scene designated by the central sense of the construction. For example, the verbs in the following serve to negate the positive meaning entailed in the caused-motion and ditransitive constructions respectively. In the first example, Pat caused Chris not to move into the room, thereby contradicting the entailment of motion (or path) associated with the caused-motion construction. In the second example, Pat caused Chris not to receive a popsicle, thus contradicting the entailment of possessive transfer inherent to the ditransitive construction.

(11) Pat locked Chris out of the room.  
Pat denied Chris a popsicle. (392)

Moreover, the verb may be a precondition for the scene designated by the construction. In the first example below, the verb free designates the precondition of removing constraints that will enable motion; in the second example, the preparation of the cake is a precondition for Dave’s transferring the cake to Elena.

(12) ?The warden freed the prisoner into the city.  
Dave baked Elena a cake. (394)

13 Goldberg noted that judgments on this sentence vary, with speakers ranging from finding them fully acceptable to clearly unacceptable. She observed that while preconditions in the scene of possessive transfer are typical, the verb does not designate a precondition as readily in other English constructions.
In sum, in the CG approach, each basic-clausal construction is associated with a particular meaning; this meaning has an effect on its distribution. As basic argument structures, datives and ditransitives, each associated with a specific sense, are thus expected to differ in their distribution. Verbs allowable in the two constructions can be categorized into different semantic subclasses. The principles of integration predict which verb subclasses can appear in which argument structure. Although these principles are mainly semantic in nature (i.e., depending on whether the verb's meaning is compatible with the meaning of the construction), they are arbitrary to a certain extent. Moreover, each subclass of verbs bears a certain kind of relationship to the construction; typical types of relationships include elaboration, means, denial, and precondition, etc.

3.1.2 Experiment on grammaticality judgments

This section deals with the question of which subclasses of verbs can occur in the dative and ditransitive constructions in Thai. The purpose of the section is to determine whether the two constructions can be distinguished in terms of distribution on the basis of the CG framework.

There are quite a few experimental studies which generally suggest that the dative and ditransitive constructions are likely to occur with different sets of verbs and that verbs differ in their association strength with these constructions. These works are primarily concerned with the English structures, and they can be divided broadly into two types according to their methodologies: those making use of judgment tasks and those depending on production tasks (Wolfe-Quintero 1998).
In judgment tasks, subjects are usually asked to choose between two sentences appearing in the different constructions (dative vs. ditransitive) for a single verb, to determine whether a sentence is good or bad, or to rate the acceptability of a sentence on a scale. For example, in a rating task, Ferreira (1996) found that both alternating and non-alternating verbs were judged best in the dative construction, with alternating verbs in the ditransitive structure judged somewhat lower, followed by non-alternating verbs in the ditransitive form.

The production tasks vary in terms of whether subjects are provided with just a verb, a subject and a verb, or a verb and all of its arguments, before being asked to produce a sentence in writing or orally. For example, in Ferreira (1996), the subjects were shown a verb and its arguments and then asked to produce a sentence orally. The results of his study showed that alternating verbs were produced more frequently in the dative structure than in the ditransitive form. On the other hand, in Wolfe-Quintero’s (1998) free production task, the subjects were given only a list of verbs, and asked to write sentences to describe the pictures they saw. The results suggested the association of the ditransitive construction with a group of verbs and also different association levels of verbs with the construction. Certain verbs such as give and offer were more likely than others to be produced in the ditransitive form while some verbs such as take or kick were not produced in the ditransitive by any subject.

More recently, there has been work on the relation between argument structure constructions and verbs from a corpus perspective. For example, Stefanowitsch and Gries (2003) introduced a method called collostructional analysis, which investigates which words are strongly attracted or repelled by a particular slot in a construction.
Similar to the results of Wolfe-Quintero (1998), their study of the English ditransitive demonstrated that there were associations between the ditransitive construction and particular verbs, and that these verbs could be ranked. The strongest collocate was *give*, which is clearly the verb most closely associated with the meaning of the construction. Other verbs which were in the list of the fifteen strongest collocates included verbs of future transfer (*offer, promise, owe*), negation of transfer (*deny*), and metaphorical transfer (*tell, teach*). Thus, their findings not only showed the relative associations of the ditransitive construction with a specific set of verbs, but they also provided evidence for the polysemy of the construction.

In the present study, the method I chose to examine the distribution of Thai dative and ditransitive constructions is a type of judgment task, i.e., grammaticality judgments. Unlike production tasks in which subjects are motivated to produce sentences they consider good and natural, subjects in the grammaticality judgment task are usually presented with a list of sentences ranging on a scale of acceptability from very good to very bad sentences. Thus, this method can give an answer to the question of which verbs are and are not likely to occur in the dative and ditransitive constructions in Thai.

However, one major limitation of the method of grammaticality judgments involves the empirical reliability of judgment data. To solve the problem, Schütze (1996) and Cowart (1997) suggested that objective methods should be applied to sentence judgments. According to their analysis, by carefully controlling the distribution of sentences across lists to be judged by various groups of subjects, and by using a scale of acceptability, we can collect more reliable data, and also detect a wide
range of syntactically interesting differences in the relative acceptability of various sentence types.

Therefore, grammatical judgments, presented in the objective ways, can yield a lot of valuable information on the study of the dative and ditransitive constructions in Thai. This method will tell us not only which verbs and subclasses of verbs are and are not acceptable in either construction, but it will also reveal variations among verbs and verb subclasses in their relative association strengths with the constructions and variations among speakers of different sex and age groups in their judgments.

The details of the experiment on grammaticality judgments of Thai dative and ditransitive sentences, which were designed and presented in an experimental style, are as below:

Objective

The objective of the experiment was to ascertain the patterns of distribution of the dative and ditransitive argument structure constructions in Thai.

Hypothesis

As distinct constructions, the dative and ditransitive are expected to occur with different sets of verbs. However, as noted in Chapter 1, Section 1.3, the dative preposition kēčē lacks a directional meaning. Thus, the semantic contrast between the presence and absence of the path meaning may not be relevant to the case in Thai, and the two constructions may not be very different in denotational meaning. Since CG relates meaning to distribution, the hypothesis underlying the experiment was that the dative and ditransitive constructions in Thai should not be very different in distribution.
Subjects

The subjects were 42 Thai native speakers, who were undergraduate and graduate students at Kasetsart University in Thailand.

Materials

A total of 45 verbs, all drawn from 18 semantic subclasses of verbs based on Gropen et al.'s (1989) and Pinker's (1989) proposal, were used in the experiment. These particular verbs were chosen for several reasons. First, all of them occur frequently in everyday conversation in Thai. Second, they provide semantic contrast between alternating and non-alternating dative-ditransitive verbs: some of them are typical dative and/or ditransitive verbs in many languages (Subclasses 1-12 in Table 3) while some are not conventionally allowed in dative and ditransitive constructions (Subclasses 13-18 in Table 3).

Each of the 45 verbs appeared in a pair of sentences that differed only in terms of argument structures, one in the dative and the other the ditransitive. Thus, the total number of the test sentences is 90, including 45 dative sentences and 45 ditransitive sentences. Table 3 presents the 45 verbs from the 18 semantic subclasses that were targeted in the experiment.

<table>
<thead>
<tr>
<th>Semantic subclasses</th>
<th>Verbs</th>
<th>English equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Verbs that inherently signify acts of giving</td>
<td>ลืม หาย</td>
<td>'give'</td>
</tr>
<tr>
<td></td>
<td>ผิด ขาย</td>
<td>'sell'</td>
</tr>
<tr>
<td></td>
<td>ผิด ขยี้ยน</td>
<td>'return'</td>
</tr>
<tr>
<td>2. Verbs of instantaneous causation of ballistic motion</td>
<td>ผิด ย๊อเน</td>
<td>'throw'</td>
</tr>
<tr>
<td></td>
<td>ผิด ต๊ะ</td>
<td>'kick'</td>
</tr>
<tr>
<td></td>
<td>ผิด ขี้ยง</td>
<td>'toss'</td>
</tr>
<tr>
<td>3. Verbs of sending</td>
<td>ผิด ซอย</td>
<td>'send'</td>
</tr>
<tr>
<td></td>
<td>ผิด เมล</td>
<td>'mail'</td>
</tr>
</tbody>
</table>
TABLE 3. (Continued) Test Verbs and their Semantic Subclasses.

<table>
<thead>
<tr>
<th>Semantic subclasses</th>
<th>Thai</th>
<th>English equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Verbs of continuous causation of accompanied motion in a deictically-specified direction</td>
<td>ลาพ้า 'bring'</td>
<td>'take'</td>
</tr>
<tr>
<td>5. Verbs of future having</td>
<td>ยกซอม 'bequeath'</td>
<td>'assign'</td>
</tr>
<tr>
<td></td>
<td>ถ่ายซอน 'guarantee'</td>
<td>'report'</td>
</tr>
<tr>
<td>6. Verbs of type of communicated message</td>
<td>สอน 'teach'</td>
<td>'tell'</td>
</tr>
<tr>
<td></td>
<td>ให้ 'make'</td>
<td>'knit'</td>
</tr>
<tr>
<td>7. Verbs of instrument of communication</td>
<td>สุนทร 'telephone'</td>
<td>'email'</td>
</tr>
<tr>
<td></td>
<td>บัง 'fax'</td>
<td>'fax'</td>
</tr>
<tr>
<td>8. Verbs of creation</td>
<td>ที่ 'whisper'</td>
<td>'shout'</td>
</tr>
<tr>
<td>9. Verbs of obtaining</td>
<td>สาย 'order'</td>
<td>'buy'</td>
</tr>
<tr>
<td></td>
<td>ซาย 'find'</td>
<td>'find'</td>
</tr>
<tr>
<td>10. Verbs of continuous causation of accompanied motion in some manner</td>
<td>ดี 'pull'</td>
<td>'lift'</td>
</tr>
<tr>
<td></td>
<td>ยก 'haul'</td>
<td>'haul'</td>
</tr>
<tr>
<td>11. Verbs of manner of speaking</td>
<td>ก้าว 'whisper'</td>
<td>'shout'</td>
</tr>
<tr>
<td>12. Verbs of propositional attitudes</td>
<td>ยินยน 'assert'</td>
<td>'assert'</td>
</tr>
<tr>
<td></td>
<td>ร่าน 'confirm'</td>
<td>'confirm'</td>
</tr>
<tr>
<td>13. Verbs of choosing</td>
<td>ยืก 'choose'</td>
<td>'pick'</td>
</tr>
<tr>
<td></td>
<td>ยิป 'pick'</td>
<td>'pick'</td>
</tr>
<tr>
<td>14. Benefactive verbs</td>
<td>ที่ 'hold'</td>
<td>'hold'</td>
</tr>
<tr>
<td></td>
<td>ซัก 'wash'</td>
<td>'wash'</td>
</tr>
<tr>
<td></td>
<td>ซอม 'repair'</td>
<td>'repair'</td>
</tr>
<tr>
<td>15. Verbs of performance</td>
<td>วาด 'draw'</td>
<td>'sing'</td>
</tr>
<tr>
<td></td>
<td>ร้อง 'sing'</td>
<td>'sing'</td>
</tr>
<tr>
<td>16. Steal verbs</td>
<td>กลม 'steal'</td>
<td>'smuggle'</td>
</tr>
<tr>
<td></td>
<td>ยักซอก 'smuggle'</td>
<td>'smuggle'</td>
</tr>
<tr>
<td>17. Put verbs</td>
<td>วาง 'place'</td>
<td>'place'</td>
</tr>
<tr>
<td></td>
<td>คัด 'arrange'</td>
<td>'arrange'</td>
</tr>
<tr>
<td>18. Meet verbs</td>
<td>ปรักษา 'consult'</td>
<td>'consult'</td>
</tr>
<tr>
<td></td>
<td>ต่อทาย 'debate'</td>
<td>'debate'</td>
</tr>
</tbody>
</table>
Design

Two lists were created to counterbalance for any effect of verb position on the responses. These lists contained the same test sentences but they were presented in different orders. The test sentences were distributed randomly. However, it was verified that sentences containing verbs of the same semantic subclass did not appear next to each other. Table 4 provides some examples of the test sentences as arranged in one of the lists.

Table 4. Examples of the Test Sentences in the Experiment on Grammaticality Judgments.*

<table>
<thead>
<tr>
<th>Sentences</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dang pull box Cl that Dat me</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Dang pull that box to me.</td>
<td></td>
</tr>
<tr>
<td>2. Dang order drink this Dat me</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Dang ordered this drink to me.</td>
<td></td>
</tr>
<tr>
<td>3. Dang whisper news good me</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Dang whispered me good news.</td>
<td></td>
</tr>
<tr>
<td>4. Dang make cake Dat me</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Dang made the cake to me.</td>
<td></td>
</tr>
<tr>
<td>5. Dang confirm news good me</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>Dang confirmed me the good news.</td>
<td></td>
</tr>
</tbody>
</table>

*The IPA transcription and the English translation were not included in the lists provided to the subjects.
Procedure

Subjects were divided into four groups according to their sex and age: teenage females, adult females, teenage males, and adult males. The subjects in the teenager groups were undergraduate students, aged 18 to 21; those in the adult groups were graduate students, aged 30 or older. There were 11 subjects in each of the two female groups, and there were 10 subjects in each of the two male groups.14

Each subject saw the 90 test sentences that were presented in one of the two lists. About half of the subjects in each group saw List 1 while the other half saw List 2. They were told to rate each of the dative and ditransitive sentences in the list on the basis of a 1-5 scale, and to base the responses on their impression, not on any rules of Standard Thai. There was no time constraint on finishing the test; however, most subjects could finish it within less than 45 minutes. The following instruction, adapted from the judgment instructions suggested by Cowart (1997), was explained in Thai to all subjects.

Thai version

โปรดอ่านและตั้งคิดและประยุกต์จำลองให้ข้อมูลในรูปแบบของ 1, 2, 3, 4, หรือ 5 ให้ (5) สำหรับประโยคที่คุ้นเคยกว่า หรือเป็นธรรมชาติมากกว่า ให้ (1) สำหรับประโยคที่น่าแปลกหรือไม่เข้าใจ ให้ (3) สำหรับประโยคที่คุ้นเคยใหม่ หรือมีความรู้สึกของคุณที่มีต่อบุคคลที่เกี่ยวข้องระหว่าง (1) และ (5) ให้ตระหนักว่าประโยคที่คุ้นเคยหรือไม่เข้าใจ ให้บริจาคให้ค่าตอบตามความรู้สึกของคุณ ไม่ใช่ตามกฎต่างภาษาไทยหรือ "มาตรฐาน" หรือ "ถูกต้อง"

English version

Please read each of the sentences listed below. For each sentence, we would like you to indicate your reaction to the sentence. Mark your response sheet 1, 2, 3, 4 or 5. Use (5) for sentences that seem fully normal and understandable to you. Use (1) for sentences that seem very odd, awkward, or difficult for you to understand. Use (3) for sentences that you are not sure about or do not know the answer. If your feelings about the sentence are somewhere between the extremes, use one of the middle responses, (2) or (4). There are no right or wrong answers. Please base your responses on your impression, not on rules you have learned about what is "proper" or "correct" Thai.

14 Results concerning sex and age differences will be discussed in Chapter 5.
Results and discussion

There were only a few missing data points; most subjects rated all of the test sentences as instructed. The mean ratings of dative and ditransitive sentences were measured. The results showed an overall preference for the dative structure. In general the dative construction was rated higher than the ditransitive construction. The mean rating of the dative for all verbs and all subjects was 3.34 while that of the ditransitive was 1.95. Generally, the differences in judgments still hold when considering the rating of each verb and of each individual subject. Only one of the 45 verbs (the verb -speaking 'teach') showed the reverse pattern in which the ditransitive was rated higher than the dative. Only two of the 42 subjects rated on average the ditransitive higher than the dative. Table 5 compares the mean ratings of datives with ditransitives for each verb.

<table>
<thead>
<tr>
<th>Verb Class</th>
<th>Mean rating-dative</th>
<th>Mean rating-ditransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thai hay</td>
<td>3.95</td>
<td>1.60</td>
</tr>
<tr>
<td>khîay</td>
<td>3.98</td>
<td>3.90</td>
</tr>
<tr>
<td>khîay</td>
<td>3.60</td>
<td>1.69</td>
</tr>
<tr>
<td>khiay</td>
<td>3.51</td>
<td>1.24</td>
</tr>
<tr>
<td>sog</td>
<td>3.60</td>
<td>1.49</td>
</tr>
<tr>
<td>mel</td>
<td>3.43</td>
<td>1.69</td>
</tr>
<tr>
<td>2awmaa</td>
<td>1.95</td>
<td>1.57</td>
</tr>
<tr>
<td>2awpay</td>
<td>1.69</td>
<td>1.36</td>
</tr>
<tr>
<td>yoksômât</td>
<td>3.95</td>
<td>1.55</td>
</tr>
<tr>
<td>tîcpdmây</td>
<td>4.45</td>
<td>2.24</td>
</tr>
<tr>
<td>râpprâkan</td>
<td>4.07</td>
<td>2.07</td>
</tr>
<tr>
<td>sâm</td>
<td>3.93</td>
<td>4.38</td>
</tr>
<tr>
<td>bok</td>
<td>4.31</td>
<td>2.98</td>
</tr>
<tr>
<td>raayaaan</td>
<td>4.20</td>
<td>3.76</td>
</tr>
<tr>
<td>thoôdsâp</td>
<td>3.43</td>
<td>1.88</td>
</tr>
<tr>
<td>Thai</td>
<td>Verb</td>
<td>English equivalent</td>
</tr>
<tr>
<td>--------</td>
<td>--------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>รีลิม</td>
<td>'email'</td>
<td>7</td>
</tr>
<tr>
<td>แฟ็กซ์</td>
<td>'fax'</td>
<td>7</td>
</tr>
<tr>
<td>ที่ทำ</td>
<td>'make'</td>
<td>8</td>
</tr>
<tr>
<td>ที่ถัก</td>
<td>'knit'</td>
<td>8</td>
</tr>
<tr>
<td>ริน</td>
<td>'pour'</td>
<td>8</td>
</tr>
<tr>
<td>ซาย</td>
<td>'order'</td>
<td>9</td>
</tr>
<tr>
<td>ซื้อ</td>
<td>'buy'</td>
<td>9</td>
</tr>
<tr>
<td>หา</td>
<td>'find'</td>
<td>9</td>
</tr>
<tr>
<td>ลาก</td>
<td>'pull'</td>
<td>10</td>
</tr>
<tr>
<td>ยอด</td>
<td>'lift'</td>
<td>10</td>
</tr>
<tr>
<td>ลา</td>
<td>'haul'</td>
<td>10</td>
</tr>
<tr>
<td>จะกลิ่น</td>
<td>'whisper'</td>
<td>11</td>
</tr>
<tr>
<td>จะฟัง</td>
<td>'shout'</td>
<td>11</td>
</tr>
<tr>
<td>จะสัญญาว่า</td>
<td>'assert'</td>
<td>12</td>
</tr>
<tr>
<td>จะให้ยินยอม</td>
<td>'confirm'</td>
<td>12</td>
</tr>
<tr>
<td>จะเลือก</td>
<td>'choose'</td>
<td>13</td>
</tr>
<tr>
<td>จะยิป</td>
<td>'pick'</td>
<td>13</td>
</tr>
<tr>
<td>จะยืน</td>
<td>'hold'</td>
<td>14</td>
</tr>
<tr>
<td>จะซัก</td>
<td>'wash'</td>
<td>14</td>
</tr>
<tr>
<td>จะซ่อม</td>
<td>'repair'</td>
<td>14</td>
</tr>
<tr>
<td>จะซ่อม</td>
<td>'draw'</td>
<td>15</td>
</tr>
<tr>
<td>จะร้อง</td>
<td>'sing'</td>
<td>15</td>
</tr>
<tr>
<td>จะขโมย</td>
<td>'steal'</td>
<td>16</td>
</tr>
<tr>
<td>จะย้ายจะใส่</td>
<td>'smuggle'</td>
<td>16</td>
</tr>
<tr>
<td>จะวาง</td>
<td>'place'</td>
<td>17</td>
</tr>
<tr>
<td>จะจัด</td>
<td>'arrange'</td>
<td>17</td>
</tr>
<tr>
<td>จะให้</td>
<td>'consult'</td>
<td>18</td>
</tr>
<tr>
<td>จะพูด</td>
<td>'debate'</td>
<td>18</td>
</tr>
</tbody>
</table>

A repeated-measures ANOVA was used to examine the effect of the construction type on the ratings. The analysis was done on two bases: subject analysis and item analysis. For the subject analysis, the results indicated that there was a significant effect of the sentence structure on the ratings, revealing that the dative construction was rated higher than the ditransitive construction, \( F_1(1, 41) = 130.93, p < \)
The mean ratings of the dative and ditransitive constructions and standard deviations for all subjects are presented in the following table.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. deviation</th>
<th>No. of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dative</td>
<td>3.34</td>
<td>.75</td>
<td>42</td>
</tr>
<tr>
<td>Ditransitive</td>
<td>1.95</td>
<td>.58</td>
<td>42</td>
</tr>
</tbody>
</table>

Similarly, for the item analysis, the results indicated that there was a significant effect of the sentence structure on the ratings, revealing that the dative construction was rated higher than the ditransitive construction, $F_2(1, 44) = 200.68, p < .01$.

Data involving the semantic subclasses of verbs are more revealing. The mean ratings in Table 5 support the notion of verb subclasses or verb class membership. First, with the exception of very few cases (e.g., the ditransitive mean rating of the verb khāay ‘sell’ in the first subclass), there was in general consistency in dative and ditransitive ratings of verbs belonging to the same subclass. For example, all verbs in Subclasses 4 and 16 had low dative ratings; all verbs in Subclass 13 had medium dative ratings; and all verbs in Subclass 6 had high ditransitive ratings. Second, there was a consistent relationship of the two constructions based on the ratings of these semantic subclasses. For example, verbs in Subclass 17 had medium dative ratings and low ditransitive ratings; verbs in Subclass 6 had high dative ratings and also high ditransitive ratings; and verbs in Subclass 5 had high dative ratings and low ditransitive ratings. Third, the ratings revealed some similarity in dative-ditransitive subclasses of verbs across languages. The subclasses that were rated high in both constructions in Thai (Subclasses 1 and 6) are also considered as very typical subclasses of the dative-

An important question to be considered is whether the dative and ditransitive constructions behave the same or differently regarding their occurring with verb subclasses. In order to answer this question, the mean dative-ditransitive ratings of verb subclasses were measured. Consistent with the hypothesis, there was no great difference in distribution between the dative and ditransitive constructions. As shown in Table 7 and Figure 4, there was a tendency for the subclasses that were rated high in the dative form to be among those that were rated high in the ditransitive form, and the subclasses that were rated low in the dative form to be among those that were rated low in the ditransitive form. This tendency is noticeably seen in Figure 4, in which markers and lines represent the relative ratings of different verb subclasses in the dative and ditransitive structures. In fact, the five semantic subclasses of verbs with the highest mean ratings in the dative form – future having (5), communicated message (6), inherent acts of giving (1), manner of speaking (11), and instrument of communication (7) – were also among the six subclasses with the highest mean ratings in the ditransitive form.
TABLE 7. Dative-Ditransitive Mean Ratings of Semantic Subclasses of Verbs Presented in Descending Order.

<table>
<thead>
<tr>
<th>Semantic subclass</th>
<th>Mean rating - dative</th>
<th>Semantic subclass</th>
<th>Mean rating - ditransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4.16</td>
<td>6</td>
<td>3.71</td>
</tr>
<tr>
<td>6</td>
<td>4.14</td>
<td>1</td>
<td>3.17</td>
</tr>
<tr>
<td>1</td>
<td>4.04</td>
<td>12</td>
<td>2.38</td>
</tr>
<tr>
<td>11</td>
<td>3.74</td>
<td>11</td>
<td>2.26</td>
</tr>
<tr>
<td>7</td>
<td>3.62</td>
<td>7</td>
<td>2.11</td>
</tr>
<tr>
<td>3</td>
<td>3.51</td>
<td>5</td>
<td>1.95</td>
</tr>
<tr>
<td>2</td>
<td>3.41</td>
<td>18</td>
<td>1.9</td>
</tr>
<tr>
<td>8</td>
<td>3.39</td>
<td>8</td>
<td>1.7</td>
</tr>
<tr>
<td>12</td>
<td>3.36</td>
<td>10</td>
<td>1.64</td>
</tr>
<tr>
<td>17</td>
<td>3.31</td>
<td>16</td>
<td>1.63</td>
</tr>
<tr>
<td>9</td>
<td>3.24</td>
<td>3</td>
<td>1.59</td>
</tr>
<tr>
<td>18</td>
<td>3.19</td>
<td>14</td>
<td>1.59</td>
</tr>
<tr>
<td>13</td>
<td>3.18</td>
<td>9</td>
<td>1.56</td>
</tr>
<tr>
<td>14</td>
<td>3.06</td>
<td>17</td>
<td>1.54</td>
</tr>
<tr>
<td>15</td>
<td>3.04</td>
<td>4</td>
<td>1.46</td>
</tr>
<tr>
<td>10</td>
<td>2.86</td>
<td>2</td>
<td>1.45</td>
</tr>
<tr>
<td>16</td>
<td>2.36</td>
<td>13</td>
<td>1.45</td>
</tr>
<tr>
<td>4</td>
<td>1.82</td>
<td>15</td>
<td>1.42</td>
</tr>
</tbody>
</table>

FIGURE 4. Dative-Ditransitive Mean Ratings of Semantic Subclasses of Verbs.

A linear regression was used to examine the relation between dative ratings and ditransitive ratings of verb subclasses. The result showed that the relation between the two variables was statistically significant, suggesting that dative ratings of verb subclasses were predictive of ditransitive ratings of verb subclasses and vice versa, $R^2 = .38$, $F(1, 16) = 9.81, p = .006$. 
However, it should be noted that there were a few cases of mismatches. These include the mean dative-rating of Subclass 4, which was unusually low; the mean ditransitive-rating of Subclass 5, which should have been higher compared to its mean dative-rating; and the mean ditransitive-rating of Subclass 6, which was almost as high as its mean dative-rating.

Figure 5 presents the dative and ditransitive ratings of the subclasses in greater detail. It includes all members of each subclass, showing in general the consistent behavior of verbs belonging to the same subclass and the predictive relationship of the dative and ditransitive ratings of verbs and verb subclasses.

Moreover, the results of verb subclasses indicated that the ditransitive construction tended to be much more restricted in its distribution than the dative. In order to evaluate the effect of verb subclasses on the dative vs. ditransitive ratings, I performed a post-hoc analysis. I divided the subclasses into two groups, based on the criterion of whether they strictly denote the central sense of the ditransitive construction. According to Goldberg (1992, 1995), the central sense of the ditransitive is argued to be the sense involving successful transfer of an object to a recipient. One
reason is because this is the sense most metaphorical expressions are based on. For example, *Mary taught Bill French* implies that Bill actually learned some French, i.e., that metaphorical transfer was successful. Moreover, successful transfer should be the basic sense because other related meanings such as negated transfer, intended transfer, and future transfer "can be represented most economically as extensions from this sense" (Goldberg 1992:52).

Based on this criterion of the central sense, I classified Subclass 1 (verbs of inherent acts of giving) and Subclass 6 (verbs of communication message) together as Group 1, since they are the only subclasses that strictly denote successful transfer. The other subclasses were categorized as Group 2 because they imply extended senses of transfer or other senses unrelated to transfer, e.g., Subclass 5 (future transfer), Subclass 7 (means of transfer of communication), Subclass 8 (intended transfer), and Subclass 16 (stealing). The dative and ditransitive mean ratings of these two groups of subclasses and standard deviations for all subjects are presented in the table below.

<table>
<thead>
<tr>
<th>Table 8: Means and Standard Deviations of Verb Subclasses in the Dative and Ditransitive Constructions.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1- Dative</td>
</tr>
<tr>
<td>Group 1- Dative</td>
</tr>
<tr>
<td>Group 2- Dative</td>
</tr>
<tr>
<td>Group 1- Ditransitive</td>
</tr>
<tr>
<td>Group 2- Ditransitive</td>
</tr>
</tbody>
</table>

A repeated-measures ANOVA was used to examine the effect of verb subclasses on the ratings of the dative and ditransitive constructions. The results revealed a significant interaction between the subclasses and the construction types,

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15 Goldberg (1992, 1995) argued that in *Mary taught French to Bill*, the implication of successful transfer is not necessarily made.
suggesting that verb subclasses had an effect on the ratings of dative and ditransitive sentences, $F_1(1, 41) = 58.86, p < .01$.

There was a small change of method in my item analysis. In order to lessen the difference in the number of items between Group 1 and Group 2, I randomly selected only one member of each of the subclasses classified as Group 2 (i.e., all subclasses except Subclasses 1 and 6). Still, a similar result was found. The mean dative-rating of Group 1 was 4.06, and that of Group 2 was 3.15. The mean ditransitive-rating of Group 1 was 3.43, and that of Group 2 was 1.68. A repeated-measures ANOVA revealed a significant interaction between the subclasses and the construction types, suggesting that verb subclasses had an effect on the ratings of dative and ditransitive sentences, $F_2(1, 20) = 6.39, p < .05$.

Therefore, the repeated-measures ANOVA revealed the significant effect of verb subclasses on dative vs. ditransitive ratings; the ditransitive was more restricted in distribution than the dative. There are only two semantic subclasses of verbs that were rated high when used in the ditransitive structure, namely, verbs of inherent acts of giving (1), e.g., *hāy* 'give', *khyyn* 'return', and verbs of communicated message (6), e.g., *sāmm* 'teach', *raayyaan* 'report'. Both subclasses are strictly associated with the sense of successful transfer. The difference between them is that while the former involves literal transfer, the latter encodes metaphorical transfer, i.e., the transfer of information. Consider the following sentences, one involving literal transfer, and the other metaphorical transfer.
(13) **verbs of inherent acts of giving**

แต่งให้ด้วยหมาย

.dispatchEvent hay còtmây chán

Dang give letter me

‘Dang gave me a letter.’

(14) **verbs of communicated message**

แต่งสอนและ

.dispatchEvent sôn lèk chán

Dang teach math me

‘Dang taught me math.’

While the first sentence involves the transfer of a physical object, the transfer in the second sentence is successful metaphorically. That is, the speaker communicates the information to the listener. Communication travels from the speaker to the listener; the listener understands the communication upon “reception.” The literal and metaphorical senses of transfer are related through a metaphorical link. In CG, the relation between transfer of physical objects and communication is referred to as the **conduit metaphor** (Reddy 1979).

In contrast, many semantic subclasses of verbs were rated high when appearing in the dative form. Some of the verb subclasses with high mean ratings are strictly associated with the sense of successful transfer: verbs of inherent acts of giving (1), e.g., *hây ‘give’, khyyn ‘return’,* and verbs of communicated message (6), e.g., *sôn ‘teach’, raayyaan ‘report’. Moreover, there are other subclasses that denote extended senses of transfer. These include verbs of future having (5), denoting that the transfer will take place at some future point in time, e.g., *yoksoṃbat ‘bequeath’, māpmây ‘assign’; verbs of instrument of communication (7), denoting a means of transfer of communication, e.g., *thoorásôp ‘telephone*, *riímel ‘email’; verbs of creation (8),
denoting that the transfer is intended but does not necessarily take place, e.g., *tham* ‘make’, *thāg* ‘knit’; verbs of instantaneous causation of ballistic motion (2), denoting a means of transfer of physical objects, e.g., *yoon* ‘throw’, *khāny* ‘toss’; verbs of manner of speaking (11), denoting a manner of transfer of communication e.g., *krāsīp* ‘whisper’, *tākoon* ‘shout’, etc. Table 9 summarizes the differences between the Thai dative and ditransitive argument structure constructions in terms of distribution with verb subclasses.

<table>
<thead>
<tr>
<th>Verb subclasses strictly associated with the basic sense of transfer, i.e., successful transfer of an object to a recipient</th>
<th>Dative construction</th>
<th>Ditransitive construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbs of inherent acts of giving (e.g., <em>hāy</em> ‘give’, <em>khyyin</em> ‘return’)</td>
<td>Verbs of communicated message (e.g., <em>raayyaan</em> ‘report’, <em>sōn</em> ‘teach’)</td>
<td>Verbs of inherent acts of giving (e.g., <em>hāy</em> ‘give’, <em>khyyin</em> ‘return’)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Verb subclasses with extended senses of transfer</th>
<th>Dative construction</th>
<th>Ditransitive construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbs of future having (e.g., <em>rápprákan</em> ‘guarantee,’ <em>māp-māday</em> ‘assign’)</td>
<td>Verbs of instrument of communication (e.g., <em>thoorásāp</em> ‘telephone,’ <em>ʔīmel</em> ‘email’)</td>
<td>Verbs of creation (e.g., <em>tham</em> ‘make,’ <em>thāg</em> ‘knit’)</td>
</tr>
</tbody>
</table>
Certain interesting cases of variations can be noted. One is the noticeably low ditransitive-mean rating (1.60) of a member of the subclass that inherently signifies acts of giving, i.e., khääy ‘sell’, which made the overall rating of this subclass lower than that of the subclass of communicated message (3.17 vs. 3.71). A reason for the very low rating of this verb may be due to context. The context in which it occurs, ฉันขายหนังสือเล่มนี้แล้ว ฉันขาย นิสัย ฉัน ‘Dang sold me this book’, may not sound “good and natural” to native speakers. When constructing this sentence, I inserted ลม, which is the classifier of นิสัย ‘book’ and the determiner นิ ‘this’ in order to avoid structural ambiguity caused by the juxtaposition of นิสัย ‘book’ and ฉัน ‘me’. In Thai, determiners usually follow the noun they modify. Thus, without an element between the nouns for ‘book’ and ‘me’, the sentence ฉันขาย นิสัย ฉัน can mean either ‘Dang sold me the book’ (ฉัน as an object of the verb), or ‘Dang sold my book’ (ฉัน as the determiner of ‘book’). However, the results of the grammaticality judgments showed that the insertion of the determiner and classifier makes the sentence awkward. And this presumably detracts from the grammaticality of this ditransitive sentence. In contrast, when asked, five native speakers all confirmed me later that the version of the sentence without the determiner and classifier and also its corresponding dative ฉันขาย นิสัย ลม นิ ฉัน ‘Dang sold this book to me’ sound much more natural.

Another interesting case is the very low dative-mean rating (1.82) of the subclass of continuous causation of accompanied motion in a deictically-specified
direction. One possible reason is because members of this subclass are typically used in the transitive + benefactive adjunct construction (Goldberg 2002b), as in ด้วย แม้ว น้าญยย แม้ว ถึง คาน ได้ยน ‘Dang brought this book for me.’

Looking at all these results, one might ask why the dative ratings in Thai in general are unusually low. In English, dative sentences containing many of the test verbs would almost certainly be rated higher than 4.0 out of 5. The low dative ratings in Thai may be caused by the fact that Thai is a pro-drop language. That is, the subjects did not rate per se the ability of a verb to occur in the triadic pattern, but they also judged the tendency of the verb to take three “overt arguments.” Since verbs in Thai often omit some or all of their NP arguments, the subjects might consider sentences with all overt arguments unnecessarily long and unnatural, and hence give them a low rating.

To support this argument, I selected three triadic verbs, i.e., ห้า ‘give’, ค่ำ ‘give out’, and ค่าย ‘pay’, and randomly searched a number of their occurrences from an on-line corpus (see the details of this corpus in Chapter 4). Then, I compared the frequencies of each of these verbs when it occurred with two overt objects and when it occurred with one or zero object. The result showed that all of the three verbs occurred more frequently when one or both objects were omitted. Note that among these verbs, the verb ห้า ‘give,’ which is considered the most typical alternating verb whose meaning directly associated with the dative-ditransitive constructions, occurred most frequently with two overt objects.
TABLE 10. Number of Verbs With and Without Overt Objects.

<table>
<thead>
<tr>
<th></th>
<th>Ĥayı ‘give’</th>
<th>Ĉăæk ‘give out’</th>
<th>Ĉăay ‘pay’</th>
</tr>
</thead>
<tbody>
<tr>
<td>With two overt objects</td>
<td>33 (41.25%)</td>
<td>11 (23.4%)</td>
<td>7 (16.28%)</td>
</tr>
<tr>
<td>With one or no objects</td>
<td>47 (58.75%)</td>
<td>36 (76.6%)</td>
<td>36 (83.72%)</td>
</tr>
</tbody>
</table>

3.1.3 Discussion

The experiment on grammaticality judgments showed that there are differences, but not great differences, between the dative and ditransitive constructions in their distribution. Both constructions are likely to occur with the subclasses denoting the basic sense of successful transfer; however, only the dative also tends to occur with those implying extended senses of transfer. Using Goldberg’s (1997) terminology of verb-construction relationships, we can say that in Thai while verbs typically designate an elaboration of the meaning of the ditransitive construction, they can bear several kinds of semantic relationships to the dative construction, including elaboration, means, manner, and precondition.

Consistent with the general findings of the previous studies on distribution of datives and ditransitives (e.g., Connine et al. 1984, Ferreira 1996, Wolfe-Quintero 1998, Stefanowitsch and Gries 2003), the judgment data in Thai showed an overall preference for verbs to occur in the dative over the ditransitive, and also variations among verbs and especially verb subclasses in the association strength with each of the two constructions. The subclasses which are most strongly associated with both the dative and ditransitive constructions are the subclass of inherent acts of giving and the subclass of communicated message, both of which are also strongly associated with the sense of transfer.
Therefore, it can be concluded that the dative and ditransitive constructions in Thai are distinguished by the linguistic property of distribution. Both constructions are acceptable with the verb subclasses that denote successful transfer; the dative is also acceptable with other subclasses that denote extended sense of transfer. To account for such patterns of distribution and to see whether there is any relation between distribution and meaning as claimed by CG, we first need to know the meaning specific to each of the constructions.

3.2 Meaning of Thai dative and ditransitive constructions

3.2.1 Meaning in CG

This section deals with the question of how CG views meaning associated with argument structure constructions. The section summarizes the notion of meaning in CG and also compares and contrasts this notion with the ones in some other semantic approaches to argument structure. The purpose of the section is to provide background of CG's perspective on meaning in general before discussing in the next section how the theory can account for the constructions in Thai.

"It has long been recognized that differences in complement configuration are often associated with differences in meaning" (Goldberg 1995:2). To support this statement, Goldberg cited several clausal patterns from earlier studies of argument structure. For example, Fillmore (1968) noted that sentences such as the following have slightly different implications.

(15) Bees are swarming in the garden.
The garden is swarming with bees. (examples from Goldberg 1995:2)

While the second sentence suggests that the whole garden is full of bees, the first involves bees in only a part of the garden.
Anderson (1971) observed that sentences of the following patterns differ in meaning.

(16)  I loaded the hay onto the truck.
     I loaded the truck with the hay. (examples from Goldberg 1995:2)

While the second sentence of the pair implies that the truck is entirely filled with hay, no such implication is necessarily made in the first sentence.

Borkin's (1974) study also drew attention to differences in meaning between sentences with the same lexical items in slightly different constructions, for example:

(17)  When I looked in the files, I found that she was Mexican.
     *When I looked in the files, I found her Mexican.
     ?When I looked in the files, I found her to be Mexican.
     (examples from Goldberg 1995:3)

Borkin argued that sentences with that-complementizer like the first sentence freely allow matters of judgment or fact. In contrast, the second sentence is only possible with a verb of proposition when the proposition expresses a matter of judgment, as opposed to a matter of fact. Thus, the clause *I found her Mexican, which expresses a matter of fact, makes the sentence ungrammatical. The pattern of the last sentence, on the other hand, prefers but does not require the proposition to express judgments.

Similarly, Wierzbicka (1988) provided the semantic contrast of the following sentences.

(18)  I am afraid to cross the road.
     I am afraid of crossing the road. (examples from Goldberg 1995:3)

Only the first sentence implies that the speaker has some intention of crossing the road. This semantic difference accounts for why the first sentence of the pair below is infelicitous unless the falling is interpreted as volitionally intended.
(19) *I am afraid to fall down.
I am afraid of falling down. (examples from Goldberg 1995:3)

Due to these observations of semantic differences among clausal expressions, two important related goals in the CG framework are to show that a difference in syntactic form always results in a difference in meaning, and that each argument structure construction is associated with particular semantics.

These two goals are reflected in the theory's working hypothesis called the Principle of No Synonymy of Grammatical Forms (cf. Bolinger 1968, Haiman 1985, Clark 1987, Wierzbicka 1988, MacWhinney 1989). The essence of the principle is as follows:

*The Principle of No Synonymy*: If two constructions are syntactically distinct, they must be semantically or pragmatically distinct. Pragmatic aspects of constructions involve particulars of information structure, including topic and focus, and additionally stylistic aspects of the construction such as register.

*Corollary A*: If two constructions are syntactically distinct and S(emantically)-synonymous, then they must not be P(ragmatically)-synonymous.

*Corollary B*: If two constructions are syntactically distinct and P-synonymous, then they must not be S-synonymous (Goldberg 1995:67).

It can be concluded from this principle that argument structure constructions which are syntactically distinct are assumed to differ in meaning. While differences in meaning typically refer to denotational meaning, in some cases they may refer to other types of meaning, including information structure and register, etc.16

Meaning of argument structure constructions is distinguished by two characteristics. First is humanly relevant scenes; basic clause-level constructions designate a scene or event type that is basic to human experience (Goldberg 1995) (see Chapter 2, Section 2.1.2 for details of the scene encoding hypothesis). For example,

16 Note that Goldberg (1995) included register as part of pragmatic properties of a construction. However, register is regarded as a social property in the present study.
the English dative describes the scene of someone causing something to change location whereas the ditransitive depicts someone causing someone to possess something. This scene encoding hypothesis is reminiscent of Fillmore’s original motivation for the existence of case roles (Goldberg 1995): “The case notions comprise a set of universal, presumably innate, concepts which identify certain types of judgments human beings are capable of making about the events that are going on around them, judgments about such matters as who did it, who it happened to, and what got changed” (Fillmore 1968:24). It follows from this that “particular combinations of roles which designate humanly relevant scenes are associated with argument structure constructions, which therefore serve to carve up the world into discretely classified event types” (Goldberg 1995:40).

Langacker (1991) also argued for the relation of linguistic structure and event types in terms of what he called conceptual archetypes: “Certain recurrent and sharply differentiated aspects of our experience emerge as archetypes, which we normally use to structure our conceptions insofar as possible. Since language is a means by which we describe our experience, it is natural that such archetypes should be seized upon as the prototypical values of basic linguistic constructs” (294-5).

The second characteristic of meaning specific to argument structure constructions is polysemy: the basic senses of clause-level constructions are extended in various ways so that particular syntactic frames are “associated with a family of closely related senses rather than a single, fixed abstract sense” (Goldberg 1995:31). For example, Goldberg (1992, 1995) argued that the ditransitive construction in English typically implies successful transfer of an object to a recipient. At the same time, many
ditransitive expressions do not strictly imply that the object is successfully transferred to the recipient. However, their meanings are somehow related to the central sense of the construction, such as intended transfer, future transfer, and negation of transfer, etc. Thus, the ditransitive illustrates a case of constructional polysemy: the same form is paired with different but related senses (see Chapter 2, Section 2.1.3 for details of polysemous ditransitives in English).

CG shares the semantic view of argument structure constructions with some other theories, including the lexico-semantic theory (Gropen et al. 1989, Pinker 1989) and Cognitive Grammar (Langacker 1986). However, CG differs from the two approaches in certain respects. Differences and similarities between these approaches to meaning and CG will give us a better understanding of the way meaning is defined in the CG framework.

The notion of meaning in the lexico-semantic theory can be outlined as follows:

"1a. The syntactic complement configuration of a clause is taken to be uniquely predictable from the semantic representation of the matrix verb. The mapping from semantic representations to particular complement configurations is performed via universal, or near-universal, linking rules.

1b. Different syntactic complement configurations therefore reflect differences in the semantic representations of the main verb.

2. Different semantic representations of a particular verb stem, i.e., different verb senses, are related by generative lexical rules which take as input a verb with a particular semantics and yield as output a verb with a different semantics."
3. Differences in semantics are not necessarily truth-functional differences, but may represent a different construal of the situation being described; that is, the relevant semantics is speaker-based" (Goldberg 1995:8) (see more details of this theory in Chapter 1, Section 1.2).

Based on this outline, it can be concluded that the lexico-semantic theory is similar to CG in the point that both argue for semantic differences between different argument structures. Moreover, both theories consider meaning as speaker-based; the choice of argument structure depends on the speaker’s construal of a particular situation. The strongest difference between the two approaches lies in the source of a sentence structure’s meaning. In the lexico-semantic theory the meaning of a sentence pattern stems from the meaning of its main verb; in contrast, CG recognizes a sentence pattern as a construction, which by itself provides meaning to the overall interpretation of the sentence. Thus, while regularities in syntax in the lexico-semantic theory are captured by linking rules mapping the semantic structure of a verb to surface form, in CG such regularities are caused by meaning consistently associated with a particular argument structure.

However, Croft (2003) suggested that the difference between the two theories is not as strong as it appears, and that both contribute to the understanding of meaning of argument structure. His analysis of the behavior of different verb classes in the ditransitive construction indicates that the ability to enter the construction is verb-class-specific or even verb-specific, but the meaning of the verb (class) found in the ditransitive is particular to the ditransitive construction and clearly involves a family resemblance to the meaning of other verb classes found in the construction.
Another approach to argument structure which also emphasizes the important role of meaning is Cognitive Grammar. Meaning in this approach is equated with conceptualization. Lexicon and grammar form a continuum of symbolic elements. Grammatical structures “do not constitute an autonomous formal system or level of representation” (Langacker 1986:1); like the lexicon, they are claimed instead to provide for “the structuring and symbolization of conceptual content, and is thus imagic in character” (13). Langacker (13) explained the choice of one grammatical construction over others to convey particular conceptual content as follows:

When we use a particular construction or grammatical morpheme, we thereby select a particular image to structure the conceived situation for communicative purposes... The symbolic resources of a language generally provide an array of alternative images for describing a given scene, and we shift from one to another with great facility, often within the confines of a single sentence. The conventional imagery invoked for linguistic expression is a fleeting thing that neither defines nor constrains the contents of our thoughts.

Langacker gave the examples below to illustrate how grammatical constructions have the effect of imposing a particular profile on the interpretation of the sentence.

(20) Bill sent a walrus to Joyce.
    Bill sent Joyce a walrus. (14)

In Cognitive Grammar, the two sentences are claimed to differ in meaning because “they employ subtly different images to structure the same conceived situation” (Langacker 1986:14). Up to a certain point, the sentences are semantically equivalent; they symbolize a conception in which a walrus originates in the domain under Bill’s control and follows a path that results in its eventual location under Joyce’s control. The semantic contrast resides in the relative salience of certain facets of the same scene. In the first sentence, the grammatical morpheme to “specifically designates the path followed by the walrus, thereby rendering this aspect of the conceptualization
more prominent” (14). In the second sentence, on the contrary, to is absent; the juxtaposition of the two nouns after the verb “symbolizes a possessive relationship between the first nominal and the second” (14-5), adding prominence to this aspect of the conceptualization.

Therefore, like the lexico-semantic theory, Cognitive Grammar shares with CG the emphasis on semantic contrast among different argument structures. However, their approaches to meaning are different from each other in two major respects. First, while CG defines meaning as any denotational, pragmatic, or social properties associated with a construction, meaning in Cognitive Grammar is viewed as conceptual content conveyed by a particular syntactic form. Second, the association between a syntactic structure and meaning is symbolic in Cognitive Grammar, for example, the dative to symbolizes the path while the presence of two objects without to implies their possessive relationship. In CG, on the contrary, although a clausal construction is assumed to be consistently associated with a particular meaning, the relationship between a construction and its meaning is arbitrary. It is not argued in the theory why one specific syntactic form, instead of others, is associated with one specific meaning. Thus, systematic associations such as the dative depicting someone causing something to change location and the ditransitive implying someone causing someone to possess something are viewed as arbitrary mappings of form and meaning.17

In sum, CG gives a semantic account of argument structure; different argument structure constructions are assumed to differ in meaning. Meaning in this approach

17 This raises a question why there is no language in which the dative means “cause to receive” whereas the ditransitive means “cause to move.” An answer to this question from the CG approach may have something to do with the learning process and/or language change.
typically refers to denotational meaning, and it may also refer to pragmatic and social meanings. Basic clause-level constructions are distinguished by two characteristics of meaning. First, they designate a scene basic to human experience. Second, they are polysemous; the basic sense of a construction is extended and associated with a family of different related senses.

3.2.2 Experiment on description selection

This section deals with the question of whether the dative and ditransitive constructions in Thai are associated with different meanings. The purpose of the section is to determine whether the two constructions can be distinguished in terms of meaning.

CG adopts a well-known hypothesis on the semantic contrast of the English dative-ditransitive syntax based on Cognitive Grammar. That is, the preposition in the dative construction designates the path followed by an entity whereas the juxtaposition of the two objects in the ditransitive construction symbolizes their possessive relationship. Based on these symbolic relationships between form and meaning, the dative is more strongly associated with the concept of path, i.e., the change in location of the transferred object; in contrast, the ditransitive is more strongly associated with the concept of possession, i.e., the recipient coming into possession of the transferred object (Langacker 1986, Goldberg 1992, 1995).

Several experimental studies have supported the hypothesis that transfer of possession is a semantic feature of the dative alternation in English. For example, Gropen et al. (1989) and Bley-Vroman and Yoshinaga (1992) found that native English speakers accepted the use of the ditransitive construction with novel verbs significantly
more in situations in which transfer of possession had been clearly indicated than when there was no transfer of possession. Inagaki (1993) found the same result for real verbs. Kaschak and Glenberg (2000, experiment 1) found that when English speakers were asked to choose a sentence consistent with the transfer meaning, they overwhelmingly chose the ditransitive construction for both conventional and innovative denominal verbs. When they were asked to choose between two definitions of the main verb used in a ditransitive sentence, they preferred to choose the one consistent with the sense of transfer.

However, since the preposition kće in Thai lacks a directional meaning, we can perhaps not expect to find the pattern of semantic differences in English to be relevant to the structures in Thai. In order to examine the Thai dative and ditransitive constructions in terms of meaning, specifically to see whether they differ in the path vs. possession aspects, I conducted an experiment using a description selection method. The details of the experiment are as below:

**Objective**

The objective of the experiment was to examine whether the dative and ditransitive argument structure constructions in Thai differ subtly in meaning.

**Hypothesis**

Based on the semantic differences in English, the hypothesis underlying the experiment was that the dative in Thai is more strongly associated with path and the ditransitive with possession. However, due to the lack of a toward-type meaning of the dative marker, we acknowledge that the result could well contradict the hypothesis.
Subjects

The subjects were 42 Thai native speakers, who were undergraduate and graduate students at Kasetsart University in Thailand. To avoid any influence from the earlier experiment, the group of subjects in this experiment was not the same group who participated in the experiment on grammaticality judgments.

Materials

A total of 16 verbs, all drawn from the semantic subclass which inherently signifies acts of giving, were targeted in the experiment. These verbs were chosen because all of them appear conventionally in both dative and ditransitive structures in Thai, and they encode transfer of physical, as opposed to metaphorical, objects, which made it easier for the subjects to construe a scene of transfer. Table 11 presents all of the 16 test verbs.

<table>
<thead>
<tr>
<th>No.</th>
<th>Verb</th>
<th>English equivalent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ฆ่า ฆ่า</td>
<td>'sell'</td>
</tr>
<tr>
<td>2</td>
<td>ขมิ ขยน</td>
<td>'return'</td>
</tr>
<tr>
<td>3</td>
<td>บรรจุ ถือичาด</td>
<td>'donate'</td>
</tr>
<tr>
<td>4</td>
<td>ให้ หม่</td>
<td>'give'</td>
</tr>
<tr>
<td>5</td>
<td>มอบ ระซ</td>
<td>'present'</td>
</tr>
<tr>
<td>6</td>
<td>ติด ค้า</td>
<td>'pay'</td>
</tr>
<tr>
<td>7</td>
<td>เอน ค้าก</td>
<td>'give out'</td>
</tr>
<tr>
<td>8</td>
<td>บริการ รื้อร่</td>
<td>'serve'</td>
</tr>
<tr>
<td>9</td>
<td>พระราชาที่ พระรัตติเถ้าหาน</td>
<td>'give (used by King)'</td>
</tr>
<tr>
<td>10</td>
<td>พระท้าว ยัย</td>
<td>'present (used with monks)'</td>
</tr>
<tr>
<td>11</td>
<td>แพร่เสน่หา ค้าก-ค้าย</td>
<td>'distribute'</td>
</tr>
<tr>
<td>12</td>
<td>ร่วง ร่อน</td>
<td>'turn in'</td>
</tr>
<tr>
<td>13</td>
<td>ขย่า ยณ</td>
<td>'hand'</td>
</tr>
<tr>
<td>14</td>
<td>ปราดาศักดิ์ พรักหีบน</td>
<td>'hand (used with monks)'</td>
</tr>
<tr>
<td>15</td>
<td>ปั้น ป้าน</td>
<td>'feed'</td>
</tr>
<tr>
<td>16</td>
<td>ปราดาศักดิ์ ปราธาunan</td>
<td>'grant'</td>
</tr>
</tbody>
</table>
Each of the verbs was put in a pair of corresponding dative and ditransitive sentences. Two description statements were generated for each pair, one consistent with the meaning of path and the other with possession. The following are examples of the test sentences and their description statements. In the first example, the verb *khāay* ‘sell’ is in the ditransitive structure, and it is presented with a possession statement, followed by a path statement. In the second sentence, the same verb is in the dative structure, and it is presented with a path statement, followed by a possession statement.

(21) **Ditransitive sentence followed by possession and path statements respectively:**

\[ \text{Nam sell watch Cl that Dang already} \]

\[ '\text{Nam sold Dang that watch.}' \]

a. น้าม ขาย นาฬิกา ให้ ด็อง

\[ \text{นาฬิกา} \text{ นัน} \text{ ด้าเนย} \text{ ได้} \]

\[ '\text{นาฬิกา มัน วัน อยู่} \text{ ด้วย} \text{ ด็อง}.' \]

b. นาฬิกา นาฬิกา มัน อยู่

\[ \text{นาฬิกา} \text{ นัน} \text{ นัน} \text{ มัน} \text{ อยู่} \text{ ด็อง} \]

\[ '\text{นาฬิกา มัน} \text{ อยู่} \text{ ด็อง}.' \]

(22) **Dative sentence followed by path and possession statements respectively:**

\[ \text{Nam sell watch Cl that Dat Dang already} \]

\[ '\text{Nam sold that watch to Dang.}' \]

a. นาฬิกา ขาย มัน พัก

\[ \text{นาฬิกา} \text{ นัน} \text{ นัน} \text{ มัน} \text{ พัก} \text{ ด็อง} \]

\[ '\text{นาฬิกา มัน} \text{ อยู่} \text{ ด้วย} \text{ ด็อง}.' \]
Thirty-two filler sentences were prepared, and two description statements were generated for each filler sentence. The filler sentences were tested for various purposes; however, all of them involved semantic contrasts of different syntactic forms. Half of the fillers were easy to answer; most subjects were able to choose which following statement provided the best description. For example, one filler sentence had thàwnán ‘only’ as a subject modifier (e.g., দাভ তামন্দ থাওঁনান থি চোঁপ ক্ষেক ‘Only Daw likes cakes’; another had it as an object modifier (e.g., দাভ চোঁপ ক্ষেক থাওঁনান ‘Daw liked only cakes’). This was to check whether the subjects could notice a subtle semantic contrast caused by different positions of the modifier thàwnán ‘only’. The other half of the fillers were more difficult to answer.

To match the test sentences which were expected to have a stronger connection with one description statement than the other, one of the two description statements for the hard-to-choose fillers tended to be more dominant. For example, some fillers had an adverb of place at the end of the sentence, as in জির দ্বারা রুপ তক্মা নয় হোঁগ-নাইলেন ‘Jip drew a picture of flowers in the living room.’ The subjects had to choose whether the description statement, ০ির দ্বারা রুপ তক্মায় যুঁ নয় হোঁগ-নাইলেন ‘The flowers were in the living room’, or the presumably more

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dominant statement, ขึ้นผู้ใหญ่ในพื้นหลัง cǐp yùu nay hàoŋ-nǎŋlèn 'Jip was in the living room', gave the best interpretation of the sentence they had read.

Design

Four lists were created to counterbalance items and conditions. Each test sentence appeared in four versions across the lists according to the sentence structure (dative vs. ditransitive) and the order of description statements (path-possession vs. possession-path). Each list included the following versions of the 16 test sentences, and 32 filler sentences:

- 4 ditransitive sentences, presented with possession and path description statements respectively
- 4 ditransitive sentences, presented with path and possession description statements respectively
- 4 dative sentences, presented with possession and path description statements respectively
- 4 dative sentences, presented with path and possession description statements respectively
- 32 filler sentences, each presented with two description statements

Table 12 summarizes how different versions of the 16 test sentences were arranged across the four lists:
TABLE 12. Summary of the Test Sentences in Each List:
The Experiment on Description Selection.

<table>
<thead>
<tr>
<th>List 1</th>
<th>List 2</th>
<th>List 3</th>
<th>List 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1-4 Ditransitive</td>
<td>Possession</td>
<td>S1-4 Ditransitive</td>
<td>Path</td>
</tr>
<tr>
<td></td>
<td>Path</td>
<td>S5-8 Ditransitive</td>
<td>Possession</td>
</tr>
<tr>
<td>S5-8 Ditransitive</td>
<td>Path</td>
<td></td>
<td>Path</td>
</tr>
<tr>
<td>S9-12 Dative</td>
<td>Possession</td>
<td>S9-12 Dative</td>
<td>Path</td>
</tr>
<tr>
<td>S13-16 Dative</td>
<td>Path</td>
<td>S13-16 Dative</td>
<td>Possession</td>
</tr>
<tr>
<td></td>
<td>Possession</td>
<td></td>
<td>Path</td>
</tr>
</tbody>
</table>

Procedure

All items in each list were ordered randomly; two filler sentences were placed between one test sentence and the next. Subjects were divided into four groups according to their sex and age: teenage females, adult females, teenage males, and adult males. The subjects in the teenager groups were undergraduate students, aged 18 to 21; those in the adult groups were graduate students, aged 30 or older. There were 12 subjects in the teenage male group, and 10 subjects in each of the other groups.¹⁹

Each subject saw one of the four lists. Each list was distributed to two or three subjects in each group. The subjects were instructed to read a series of 48 sentences, each followed by two description statements. They had to decide which statement best

¹⁹ Results concerning sex and age differences will be discussed in Chapter 5.
described each of the sentences. There was no time constraint on finishing the test; however, most subjects could finish it within less than 30 minutes.

Results and discussion

There were no missing data; all subjects responded to all questions by choosing the best description statement for each dative and ditransitive sentence. Contradicting the hypothesis which predicted the path vs. possession semantic difference between the two structures, the overall results showed a stronger association of both dative and ditransitive constructions in Thai with the meaning of possession. Moreover, the dative was slightly stronger in the association with the possession meaning than the ditransitive (83.63% vs. 80.36%). Table 13 includes the total number of path and possession responses the subjects gave to the dative and ditransitive sentences in questions.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Path</td>
<td>Possession</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Dative</td>
<td>55 (16.37%)</td>
<td>281 (83.63%)</td>
</tr>
<tr>
<td>Ditransitive</td>
<td>66 (19.64%)</td>
<td>270 (80.36%)</td>
</tr>
</tbody>
</table>

A repeated-measures ANOVA was used to examine whether there was a significant correlation between either of the constructions in Thai and the path vs. possession responses. Since the data above showed that the meaning of possession had a stronger association with the two structures, possession responses were selected to run the analysis. The analysis was done on two bases: subject analysis and item analysis.

For the subject analysis, the means and standard deviations of the dative-possession and ditransitive-possession responses for all subjects are given in Table 14.

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. deviation</th>
<th>No. of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dative-possession responses</td>
<td>83.63%</td>
<td>13.63%</td>
<td>42</td>
</tr>
<tr>
<td>Ditransitive-possession</td>
<td>80.38%</td>
<td>17.75%</td>
<td>42</td>
</tr>
</tbody>
</table>

The table shows that the mean response by which the subjects chose the possession description when presented with the dative structure was 83.63% and the mean response by which they chose the possession description when presented with the ditransitive construction was 80.38%. The repeated-measures ANOVA revealed that there was no significant effect of the sentence structure on the possession, as opposed to path, response, $F_1(1, 41) = 1.05, p = .311$. This did not support the research hypothesis which argued for the path vs. possession differences of the dative and ditransitive constructions, and the null hypothesis that there was no semantic contrast between the two structures could not be rejected.

The item analysis yielded a similar result. The mean by which the verbs in the dative structure triggered the possession response was 83.62% and the mean by which the verbs in the ditransitive structure triggered the possession response was 80.38%. The repeated-measures ANOVA revealed that there was no significant effect of the sentence structure on the possession, as opposed to path, response, $F_2(1, 15) = .48, p = .498$. This did not support the research hypothesis which argued for the path vs. possession differences of the dative and ditransitive constructions, and the null hypothesis could not be rejected.
To ensure that these results were not influenced heavily by the order of the path-possession statements, a repeated-measures ANOVA was performed to examine the effect of the statement order. For the subject analysis, there was no significant effect of the order of the path-possession statements on the responses, $F_1(1, 41) = 3.15, p = .08$; and the interaction between the sentence type and the statement order was not significant either, $F_1(1, 41) = .31, p = .58$. As for the item analysis, there was a significant effect of the order of the path-possession statements on the responses, $F_2(1, 15) = 5.21, p < .05$; however, the interaction between the sentence type and the statement order was not significant, $F_2(1, 15) = .41, p = .53$.

Therefore, the repeated-measures ANOVA showed no significant association between the dative vs. ditransitive constructions and the path vs. possession meanings. Still, there was variation among verbs in their association strength with the possession meaning. This variation was due to two causes: different types of verbs, e.g., $bôɔrícàak$ ‘donate’ vs. $pràțhaan$ ‘grant’, and different sentence types in which the verb appeared, e.g., $bôɔrícàak$ ‘donate’ in the dative structure vs. in the ditransitive structure. Table 15 compares the percentages by which each verb triggered the possession response when it appeared in the dative vs. ditransitive structures. For example, for the verb $bôɔrícàak$ ‘donate’, 82.61% of all its responses to the dative form were the possession response, and 94.74% of all its responses to the ditransitive form were the possession response.

20 Due to the limited period of time to finish this dissertation, I did not analyze the results concerning the fillers. If there were clear differences in judgments between different types of fillers, this would suggest that the subjects were careful in doing the test and that they were sensitive to meaning differences between two constructions.
TABLE 15. Percentages of Possession Responses across Verbs.

<table>
<thead>
<tr>
<th>Thai Verb</th>
<th>English equivalent</th>
<th>Dative</th>
<th>Ditransitive</th>
<th>Response difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>บริจาค</td>
<td>'donate'</td>
<td>82.61</td>
<td>94.74</td>
<td>-12.13</td>
</tr>
<tr>
<td>พระราชทาน</td>
<td>'grant'</td>
<td>89.47</td>
<td>95.65</td>
<td>-6.18</td>
</tr>
<tr>
<td>ให้ส่ง</td>
<td>'turn in'</td>
<td>68.42</td>
<td>69.57</td>
<td>-1.14</td>
</tr>
<tr>
<td>แคำส่ง-ค้า</td>
<td>'distribute'</td>
<td>94.74</td>
<td>95.65</td>
<td>-0.92</td>
</tr>
<tr>
<td>ค้า</td>
<td>'serve'</td>
<td>95.65</td>
<td>94.74</td>
<td>0.92</td>
</tr>
<tr>
<td>พระราชทาน</td>
<td>'hand (used with monks)'</td>
<td>84.21</td>
<td>82.61</td>
<td>1.60</td>
</tr>
<tr>
<td>พระราชทาน ‘give (used by King)’</td>
<td>94.74</td>
<td>91.30</td>
<td>3.43</td>
<td></td>
</tr>
<tr>
<td>M ทาน</td>
<td>'give'</td>
<td>82.61</td>
<td>78.95</td>
<td>3.66</td>
</tr>
<tr>
<td>ที่ ยืน</td>
<td>'hand'</td>
<td>73.68</td>
<td>69.57</td>
<td>4.12</td>
</tr>
<tr>
<td>ถกผ่าน</td>
<td>'feed'</td>
<td>78.95</td>
<td>73.91</td>
<td>5.03</td>
</tr>
<tr>
<td>ม isible</td>
<td>'present'</td>
<td>100</td>
<td>94.74</td>
<td>5.26</td>
</tr>
<tr>
<td>แคำส่ง</td>
<td>'give out'</td>
<td>100</td>
<td>94.74</td>
<td>5.26</td>
</tr>
<tr>
<td>ขาย</td>
<td>'sell'</td>
<td>47.83</td>
<td>42.11</td>
<td>5.72</td>
</tr>
<tr>
<td>ขายผ่าน</td>
<td>'present (used with monks)'</td>
<td>94.74</td>
<td>82.61</td>
<td>12.13</td>
</tr>
<tr>
<td>ขาย</td>
<td>'return'</td>
<td>60.87</td>
<td>47.37</td>
<td>13.50</td>
</tr>
<tr>
<td>ขาย</td>
<td>'pay'</td>
<td>91.30</td>
<td>73.68</td>
<td>17.62</td>
</tr>
</tbody>
</table>

However, such variation was not great. According to Table 15, most verbs in either construction showed high levels of association strength with possession, ranging from 68-100%. Moreover, there was not much variation in terms of sentence type either. For fifteen out of sixteen verbs, the difference in the association strength with the possession meaning when they were in the dative and ditransitive forms was less than 15%. Thus, the examination of variation among verbs in each of the two constructions indicates that verbs in both the dative and ditransitive structures are not radically different in the association strength with the meaning of possession. This result strengthens the notion of semantic subclasses since all the verbs belong to the same subclass that inherently signifies acts of giving.
3.2.3 Discussion

The experiment on description selection did not support the hypothesis concerning the semantic difference between the dative and ditransitive constructions in Thai. The results of the repeated-measures ANOVA tests showed no significant correlation between the Thai dative vs. ditransitive constructions and the path vs. possession meanings both for the subject analysis and the item analysis. Both the dative and ditransitive structures are more strongly associated with the meaning of possession than with the meaning of path. However, it cannot be concluded that the two argument structure constructions in Thai share exactly the same meaning. Although the results of the analysis showed that the dative and ditransitive are not distinguished by the path vs. possession meanings, this does not mean that they could not be differentiated by other aspects of meaning. As mentioned previously, the specific characteristics of the dative and ditransitive in Thai, especially the absence of a directional sense for kææ, may result in a different pattern in meaning than is found in English dative patterns.

How could Cognitive Grammar and CG, which argue for the path-possession contrast of the English dative-ditransitive alternation, account for these results? Cognitive Grammar's hypothesis that the dative symbolizes the concept of path presumably stems from the use of the dative preposition to in various contexts to designate the meaning of path (e.g., he walked to the door). Since there is no such context in which the use of the dative preposition kææ in Thai indicates a directional meaning, proponents of this theory might argue that the dative construction in Thai,
with its non-directional dative marker, does not designate the concept of path, and hence the null results of the experiment are not unexpected.

Unlike Cognitive Grammar in which the relation between form and meaning is symbolic, CG views the association between a sentence structure and a particular meaning as conventional and arbitrary. Since an argument structure can be associated conventionally with any meaning, there is no requirement, for example, that the dative and ditransitive be paired with the meanings of path and possession respectively in all languages. Thus, the theory allows differences in form-meaning pairings in different languages, including the English dative and ditransitive denoting path and possession respectively and the two constructions in Thai both emphasizing the concept of possession.

Moreover, although the results of the experiment did not strengthen CG's important concept of "construction," i.e., a pairing of form and meaning, they did not undermine the theory either. This is because meaning is defined broadly in CG. According to the Principle of No Synonymy of Grammatical Forms, two distinct syntactic forms must differ in meaning, whereby meaning can refer to denotational meaning, or other types of meaning including discourse structure and register. Thus, as long as the dative and ditransitive in Thai can be shown to be associated with different pragmatic or social properties, they will be considered to be two distinct constructions in the CG framework. The analyses in Chapters 4 and 5, which deal with pragmatic and social properties of the dative and ditransitive, will give us evidence whether the two constructions are distinct clausal patterns.
Therefore, it can be tentatively concluded that the dative and ditransitive constructions in Thai are not distinguished by the path-possession aspects of meaning. The two constructions tend to be strongly associated with possession. In the next section, we will see whether there is any relation between the meaning specific to the constructions and the distribution of the dative and ditransitive constructions in Thai.

### 3.3 Relation of distribution and meaning

The objective of this section is to answer the question of how CG relates the two linguistic properties – distribution and meaning – specific to the dative and ditransitive constructions in Thai. The results of the experiment on grammaticality judgments revealed that the ditransitive construction is much more constrained in distribution than the dative. The former is used acceptably with two subclasses of verbs which are related to the basic sense of successful transfer, i.e., verbs that inherently signify acts of giving and verbs of communicated message. The latter is acceptable with not only the subclasses of verbs that encode the sense of successful transfer, i.e., verbs that inherently signify acts of giving and verbs of communicated message, but also subclasses of verbs with extended senses of transfer, e.g., verbs of future having, verbs of instrument of communication, verbs of creation, and verbs of manner of speaking.

As for the experiment on description selection, the results indicated that there is no significant correlation between the dative vs. ditransitive constructions and the path vs. possession aspects of meaning. Both constructions in Thai are more strongly associated with the meaning of possessive transfer.
Relating these two linguistic properties, I found that the meaning associated with the dative and ditransitive in Thai has a major influence on their distribution, a result which is in accordance with CG’s account of argument structure constructions. Since both constructions are associated with the sense of possessive transfer, the Principles of Semantic Integration allow the verb subclasses having the meaning compatible with this constructional sense to occur in the dative and ditransitive forms. This explains why verbs belonging to the subclass of inherent acts of giving, which encode literal transfer, and those belonging to the subclass of communicated message, which imply a metaphorical type of transfer, are acceptable in the dative and ditransitive patterns.

On the other hand, the differences in distribution between the two constructions are due to arbitrariness in language: the various senses “are not predictable and must be conventionally associated with the construction” (Goldberg 1995:34). The ditransitive in Thai is conventionally used with verbs that imply the basic sense of successful transfer. In contrast, the dative is less constrained; speakers tend to use it with verbs of the basic sense of transfer as well as verbs of extended senses of transfer.

This analysis is consistent with the significant linear regression in Section 3.1.2, which shows (1) the predictive, concordant relationship of the dative and ditransitive ratings, suggesting that the two constructions have similar denotational meaning; and (2) higher ratings of the dative, suggesting that the dative is less constrained than the ditransitive in distribution.

Thus, similar to CG’s analysis of the English dative-ditransitive alternation, the account of the linguistic properties of the dative and ditransitive constructions in Thai
consists of systematic predictable patterns and also arbitrary unpredictable aspects in language (cf. Pinker's (1989) broad-range and narrow-range rules). The systematic predictable patterns guarantee that verbs whose meaning is semantically fused with the constructional sense of transfer will occur in the dative and ditransitive forms. On the other hand, the differences in distribution between the two constructions are due to arbitrary aspects in language, or conventional associations of either construction with a particular set of verbs.

Also, consistent with CG's account of argument structure constructions, the dative and ditransitive in Thai are distinguished by two characteristics peculiar to clause-level patterns. First, they designate an event type basic to human experience; both describe the scene of possessive transfer, someone causing someone to possess something. Second, they are polysemous; the basic sense of transfer, i.e., a successful transfer of an object to a recipient (Goldberg 1992, 1995), is extended in various ways to include other related senses. While the dative includes a family of several related, strict and extended, senses of transfer, the ditransitive allows only the metaphorical polysemy link between the strict, literal and metaphorical, senses of transfer.

Moreover, the results of the study of the linguistic properties of the Thai constructions give support to CG's basic sense of the ditransitive. While the pattern Verb Object1 Object2 in English is productively associated with possessive transfer, "many other language do not have this pattern, and others have it with a narrower or broader range of meanings" (Bencini and Goldberg 2000:642-3). Since the central sense of the ditransitive is argued to involve successful transfer (Godberg 1992, 1995), for languages in which ditransitive expressions are associated with only one specific
meaning, this meaning should be successful transfer, the central sense of the construction. And this is in fact the sense that is encoded by the two conventional subclasses of ditransitive verbs in Thai.

In conclusion, the study of the linguistic properties of the dative and ditransitive constructions in Thai provides answers to three important questions in the following ways. First, the two constructions are different, though not greatly different, in distribution. They tend to be acceptable with verb subclasses involving successful transfer; the dative is also likely to be acceptable with other subclasses of extended senses of transfer. Second, there is no significant difference between the two constructions in terms of path vs. possession meanings: they are both strongly associated with the sense of possession. Third, consistent with the CG’s semantic account of distribution, the study of datives and ditransitives in Thai shows that the meaning and distribution of argument structure are closely related in that the meaning associated with the constructions restricts the types of verbs that can be used in the dative and ditransitive structures. Both constructions are preferred with verb subclasses that have a meaning compatible with the constructional sense of possessive transfer, either the basic sense of transfer or an extended sense of transfer.
CHAPTER 4
PRAGMATIC PROPERTIES OF DATIVES AND DITRANSITIVES IN THAI

It has been observed that the dative-ditransitive alternation is constrained by pragmatic factors (Erteschik-Shir 1979, Ransom 1979, Thompson 1990, Collins 1995, Levin and Rappaport Hovav 2002). Of these factors, grammatical complexity (heaviness) and discourse status (newness) are crucial for determining the choice of one construction over the other. Although both factors have been considered by many scholars, most studies have concentrated on one factor at a time and overlooked the relation of the two factors to the alternation.

One of a few studies which compare heaviness and newness explicitly is Arnold et al. (2000). Through corpus analysis and experimentation, they demonstrated that each of these two pragmatic factors influences the choice between the dative and ditransitive constructions in English. The ditransitive is used more often when the theme is longer than the recipient and when the theme is newer than the recipient. Moreover, the two factors were found to correlate: the effect of one factor becomes stronger when the other is less constraining. For example, when both objects are of the same length, newness has stronger effect: speakers produce even more of the ditransitive when the theme is new. This led to their conclusion that “variation in constituent order is best understood when both factors are taken into account, and neither can be accounted for in terms of the other” (48).

Following Arnold et al.’s study, this chapter examines the effects of pragmatic factor and also the relationship between them. Given that there is no difference in word order between the dative and ditransitive in Thai, it is interesting to see how pragmatics has an effect on the use of the constructions. The objectives of the chapter are to
investigate heaviness and newness associated specifically with the Thai constructions, and to determine whether the two constructions can be distinguished by these pragmatic properties. The questions that are the focus of the chapter are (1) how does heaviness influence the Thai dative and ditransitive constructions; (2) how does newness influence the Thai dative and ditransitive constructions; and (3) is there any relation between these two pragmatic properties associated with the constructions in Thai, and how does this relation contribute to the understanding of the dative-ditransitive alternation?

In order to answer the above questions, data from an on-line corpus and webboards were randomly collected. Dative and ditransitive sentences were sort out and analyzed in terms of heaviness and newness of their objects. The chapter consists of three main sections. The first section deals with the weight of the objects, and aims to answer the question of heaviness effect. The second section deals with the discourse status, given or new information, specific to the objects, and aims to answer the question of newness effect. The third section explores the relation between heaviness and newness and sees how this relation can account for the pragmatic patterns peculiar to the Thai constructions.

4.1 NP heaviness of Thai dative and ditransitive constructions

4.1.1 Role of heaviness in argument structure constructions

This section deals with the general question of the effect of heaviness on argument structure and the more specific question of how it influences the dative-ditransitive alternation. The purpose of the section is to provide background on the association between dative-ditransitive constructions and heaviness as generally
discussed in the previous literature, before investigating in the next section how this pragmatic property has an effect on the constructions in Thai.

The choice between constituent orders in many argument structure constructions has been shown to be influenced by a variety of factors. Even relatively fixed word-order languages like English permit certain phrases to occur in more than one order (Arnold et al. 2000). One of the important determinants of ordering is heaviness or syntactic complexity of arguments. It has been argued that constituent ordering variation in different constructions is partly a result of the speaker’s tendency to choose the construction in which the order of simple vs. complex elements facilitates the most efficient communication (Behagel 1909, Hawkins 1994, Wasow 1997).

Generally speaking, there are two definitions of grammatical weight that have been offered in the literature. One definition was suggested by Behaghel (1909), who considered heaviness simply as a matter of string length (i.e., the number of words in a string). The other was defined by Chomsky (1975), who argued that heaviness of a linguistic unit is not “the length in words” but rather it refers to “grammatical complexity” usually based on tree structures. For example, the sentence they brought the man I saw in is considered heavier than they brought all the leaders of the riot in since the infixed clause I saw makes it more complex on the transformational level (477). Several linguists defined heaviness on the basis of either of these two suggestions: number of words (Hawkins 1994, Arnold et al. 2000), domination of an S or PP node (Emonds 1976), number of words and number of phrasal nodes (Rickford et al. 1995). However, Wasow (1997) compared a variety of different proposed definitions and tested them against corpus data. The comparisons revealed high
correlations among the various characterizations and showed that all are good predictors of constituent ordering.

There is a tendency in language for heavier (bigger or more complex) elements to occur later in a clause than lighter (smaller or simpler) ones. This tendency is what Behaghel (1909) called *Das Gesetz der Wachsenden Glieder* (the law of the growing elements), and it was labeled by Quirk et al. (1985) *the principle of end-weight*. One of the clearest illustrations of this principle in English is Heavy NP Shift, which refers to a construction that allows “material such as prepositional phrases or adverbials to intervene between a verb and its direct object if that object is heavy” (Rickford et al. 1995:116). After the shift, the object is at the end of the sentence, for example:

(1) The waiter brought [the wine we had ordered]_{DO} to the table.
    The waiter brought to the table [the wine we had ordered]_{DO}. (examples from Arnold et al. 2000:28)

(2) The grammar makes [grammatical elements such as zero anaphora and definite NPs]_{DO} available to the speaker.
    The grammar makes available to the speaker [grammatical elements such as zero anaphora and definite NPs]_{DO}. (examples from Rickford et al. 1995:116)

Variation in constituent ordering of the verb-particle construction is also sensitive to the end-weight principle. When the object NP is not heavy, the particle may occur before or after the object, as illustrated in the first pair of sentences below. But when the object is very heavy, the preferred position of the particle is adjacent to the verb, and the object is placed at the end of the sentence, as in the second pair of the examples (Rickford et al. 1995).

Note that when the object is very light, i.e., occurring in the pronominal form, it must precede the particle, for example:

*Bring up [it]_{DO}.*
Bring [it]_{DO} up. (examples from Rickford et al. 1995:117)
(3) Sandy picked [the apple pie]_{DO} up. Sandy picked up [the apple pie]_{DO}. (examples adapted from Arnold et al. 2000:28)

(4) ??Sandy brought [the subject we were talking about last night]_{DO} up. Sandy brought up [the subject we were talking about last night]_{DO}. (examples adapted from Rickford et al. 1995:117)

The canonical order of constituents in the English verb phrase conforms to the rule which puts heavier elements towards the end of a clause (Rickford et al. 1995). For example, a given verb like explain can take a PP with either an NP or a clause; the preferred order of the PP follows the principle of end-weight.

(5) He explained [the problem]_{NP} [to Pat]_{PP}. He explained [to Pat]_{PP} [that it’s a problem]_{C}. (examples adapted from Rickford et al. 1995:116)

With respect to datives and ditransitives, there are several studies that show that the alternation between the two constructions in English is also driven by the weight of the object NPs. In general, these studies reveal that in both constructions the second object is as heavy as or heavier than the first object, in conformity with the end-weight principle. That is, the recipient object of the dative construction tends to be heavier than the patient object. In contrast, it is the patient object of the ditransitive construction that is likely to be heavier than the recipient object.

For example, Thompson’s (1990) study, based on utterances derived from two murder mysteries and a personal narrative, compared the length of receiver NPs in dative sentences with that in ditransitive sentences. She found that receiver NPs in the ditransitive construction, where they do not occur in final position, are more likely to be short (i.e., consisting of 1 or 2 words) than receiver NPs in the dative construction, where they occur in final position (95% vs. 62%). This led to her conclusion that
receivers in postverbal position are much more likely to be very short than are receivers in end position" (249). This finding is largely in agreement with Rickford et al.'s (1995) corpus study. In a sample of approximately 400 English dative and ditransitive sentences involving give, they found that the second NP is as heavy as or heavier than the first NP 99% of the time, irrespective of whether it is preceded by a preposition.

Inspired by Thompson's work, Collins (1995) examined the length of receiver and entity objects of dative and ditransitive expressions extracted from a corpus. The results of his study, presented in Table 16, provided clear evidence of the end-weight principle on the two structures in English.

<table>
<thead>
<tr>
<th>Table 16. Word Length of Receiver and Entity Expressions in Dative and Ditransitive Constructions (Collins 1995:44).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ditransitive</td>
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<tr>
<td>----------------</td>
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<tr>
<td>Dative</td>
</tr>
<tr>
<td>Dative</td>
</tr>
</tbody>
</table>

Receiver NPs in the ditransitive construction, where they do not occupy final position, have an average length of only 1.1 words; however, in the dative construction, where they do occupy final position, the average length increases to 3.0 words. On the other hand, entity NPs in the ditransitive construction, where they occupy final position, are relatively long (3.6 words); however, in the dative construction, where they do not occupy final position, they tend to be shorter (2.2 words).

Similarly, one major objective of the study by Arnold et al. (2000) was to show the effect of heaviness on the dative-ditransitive alternation in English. Two types of data were used in this study: a corpus and an elicitation experiment. For the corpus
study, 269 dative and ditransitive sentences containing the verb give, e.g., the bank was told it should give its business to a friend of the Government, were analyzed. Heaviness was measured as the relative length of the two objects in terms of number of words (i.e., the number of words in the theme NP minus the number of words in the goal NP). Each item was put into one of the following three categories of relative length:

1) theme < goal theme NP length – goal NP length = -2 or less
2) theme = goal theme NP length – goal NP length = between -1 and 1
3) theme > goal theme NP length – goal NP length = 2 or more

As to the experiment, participants, who worked in pairs, were presented with sets of animals and objects. They were instructed to give each object to different animals. One participant, who received a cue card, was assigned the role of giving instructions (the instructor); the other was given the role of carrying out those instructions (the actor). The cue cards, using pictures rather than linguistic instructions, indicated which object was to be given to which character. To manipulate heaviness of participants' reference to objects and characters, contrast sets of objects which belonged to one of the two groups – simple or complex – were used. The complex items belonged to a set of items which differed on two qualities, such as the small green crayon or the large yellow crayon. The simple items could be identified with a two-word NP, such as the key or the scissors. In contrast, the characters were all of uniform complexity, falling in between the simple and complex objects. All characters belonged to a set which differed on one feature, color, such as the yellow dog or the red dog. Utterances that participants produced during the task were tape-recorded; dative
and ditransitive sentences were sorted and analyzed according to whether the theme was longer than the goal, and whether the theme or the goal argument came first.

The results of both the corpus study and the experiment revealed that heaviness influenced the constituent ordering of the English dative-ditransitive syntax. Speakers followed the pattern of light-before-heavy; they tended to produce utterances such that the heavier constituent came later in the sentence. As a result, they used ditransitives more when the theme was heavier than the goal.\textsuperscript{22}

All of these studies on heaviness point to one important question: “what are the functions of end weight?” Arnold et al. (2000) suggested that the answer to this question can be considered from both the listener-oriented viewpoint and the speaker-oriented account. From the listener’s need, the answer lies in the “architecture of human parser” (Arnold et al. 2000:31). For example, Hawkins (1994) proposed a particularly explicit version of this idea, which he called the principle of \textit{early immediate constituents}.

Words and constituents occur in the order they do so that syntactic groupings and their immediate constituents (ICs) can be recognized (and produced) as rapidly and efficiently as possible in language performance. Different orderings of elements result in more or less rapid IC recognition (57). Hawkins calculated how early the listener will be able to identify all immediate constituents by counting the number of words it takes until all ICs are recognized. Thus, his theory predicts that the second sentence below is easier to comprehend than the first, since it requires only four words, instead of eleven, in order to recognize all ICs within the verb phrase. And this further explains why when the patient object is

\textsuperscript{22} Another major objective of this study was to show that newness influences constituent ordering in some English constructions including the dative-ditransitive alternation. The effect of newness on the dative and ditransitive constructions in this study will be discussed in Section 4.2.
very heavy, speakers tend to prefer the ditransitive, where this object occupies final position, to the dative.

(6) I\_VP[^gave\_NP[^the\_valuable\_book\_that\_was\_extremely\_difficult\_to\_find]\_PP[^to\_Mary]].

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</tbody>
</table>

I\_VP[^gave\_PP[^to\_Mary]\_NP[^the\_valuable\_book\_that\_was\_extremely\_difficult\_to\_find]].^{23}

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

From the speaker-oriented account, the function of end weight is “to facilitate planning and production” (Arnold et al. 2000:32). In constructing utterances, speakers may have some difficulties for a variety of reasons; one source of difficulties is the length and complexity of constituents. Choices in constituent ordering allow speakers to postpone heavy difficult elements while they utter the shorter easier one, hence giving them more time to formulate the hard-to-produce constituents. Based on this account, the dative is preferred when speakers want to postpone long and complex recipient objects; in contrast, the ditransitive is preferred when patient objects are difficult to produce.

A third possible function of end weight is to avoid ambiguities (Arnold et al. 2000). For example, when the patient NP contains a PP, the constituent ordering of the ditransitive, as opposed to the dative, may help avoid the potential ambiguity.

(7) Give [the letter to John]\_PAT to me.

Give me [the letter to John]\_PAT.

^{23} Note that the positions of the objects in the dative structure, not the ditransitive structure, can be switched. One reason is that the dative object is grammatically marked, distinguishing it from the other object. Thus, heaviness by itself is not the only motivation for the NP shift in English.
Since ambiguous syntactic structures like this put an extra burden on the parser, avoiding such ambiguities makes the listener's task easier. In this sense, ambiguity avoidance is considered as another hearer-oriented strategy (Arnold et al. 2000).

In sum, alternate argument structure constructions like datives and ditransitives can be differentiated by heaviness of arguments. In many languages, heavier elements normally come later in a clause than lighter ones. Based on this principle of end weight, datives and ditransitives in English are distinct in terms of the weight of the two objects. The recipient NP tends to be heavier than the patient NP in the dative construction; in contrast, the patient NP in the ditransitive structure is more likely to be heavy than the recipient NP. The investigations of the functions of end weight show that postponing heavy elements allows the speaker more time to formulate difficult constituents and also facilitates the listener's task of comprehension processes. In the next section, we will see whether the end-weight principle has a role in Thai dative-ditransitive alternation, and which of the theories of NP heaviness gives the best account of the constructions in Thai.

4.1.2 Corpus and web-board study of heaviness in Thai

This section deals with the question of how heaviness influences the dative and ditransitive constructions in Thai. The purpose of the section is to distinguish the two constructions by the heaviness of object arguments.

In English, the dative and ditransitive have the opposite orderings of the recipient and patient objects, thus they can be clearly differentiated by the end-weight principle. The dative is preferred when the second object, i.e., the recipient, is heavy; the ditransitive is preferred when the second object, i.e., the patient, is heavy.
However, since the dative and ditransitive in Thai share the same post-verbal ordering, patient + recipient, the weight principle cannot give the same account of the Thai constructions. If each of the constructions simply conformed to the end-weight, that is, the recipient, which is the second object of both the dative and ditransitive, tends to be heavy, how would this pragmatic property influence and differentiate the two constructions? Given that each construction is associated with distinct pragmatic properties (Lambrecht 1994, Arnold et al. 2000, Goldberg 2003), it is informative to see how NP heaviness influences and differentiates alternating constructions with the same constituent ordering like the dative and ditransitive in Thai.

Toward this end, data were collected from two sources. One was an online Thai corpus, which is provided by the Linguistics Department at Chulalongkorn University. The other was opinion boards on Pantip, a well-known Thai website popular with teenagers and adults who like to discuss a variety of topics in current interest with other people.

The corpus contained written data extracted from newspapers, journals, academic articles, short stories, and novels. In this study, only news articles were collected, and they were from two sources: Thai News Division, which included news during the period from June 1992 to May 1994, and the online newspaper Krungthep Thurakit, which included news during the one-year period between January and December 2002. Data from Pantip used in the study were drawn from four categories of opinion boards: Siam Square, focusing on the topics of relationships and fashion; Jatujak, focusing on hobbies; Blue Planet, focusing on travel; and Lumpini, focusing on health. Thus, while data extracted from the corpus involved serious topics such as
politics, economics, international relations, religion, industrial and agricultural advancements, those drawn from Pantip were about light topics, providing a mix of serious and light topics of discussion to the overall study.

Six verbs were targeted and utterances containing one of these verbs were randomly selected by the search program provided by Chulalongkorn and the Pantip websites. These verbs were chosen for two main reasons. First, they belong to the semantic subclass of inherent acts of giving, which occur conventionally with both dative and ditransitive constructions. Second, these verbs occur frequently in everyday conversation, making it possible to search for dative and ditransitive utterances containing each of them in both the corpus and Pantip. The six verbs included háy ‘give’, lían ‘feed’, hōoricàak ‘donate’, càèak ‘give out’, càay ‘pay’, and mòcp ‘present’.

All selected utterances were examined one by one; those that did not exemplify the constructions under consideration in the study were thrown out, e.g., uses of háy ‘give’ as a benefactive adverb, uses of these verbs in other constructions such as the transitive construction. The remaining utterances included 284 examples from the corpus and 207 examples from Pantip, yielding a total of 491 dative and ditransitive utterances.

Table 17 summarizes the number of dative and ditransitive sentences for each verb and Table 18 provides some examples of these utterances.
TABLE 17. Number of Dative and Ditransitive Sentences for Each Verb in the Corpus and Web-Board Study.

<table>
<thead>
<tr>
<th>Thai</th>
<th>English equivalent</th>
<th>No. of dative sentences</th>
<th>No. of ditransitive sentences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ไม่หาย</td>
<td>'give'</td>
<td>154</td>
<td>199</td>
</tr>
<tr>
<td>2. ทิ้งหาย</td>
<td>'feed'</td>
<td>16</td>
<td>23</td>
</tr>
<tr>
<td>3. บริจาค 'donate'</td>
<td></td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>4. มอบ 'give out'</td>
<td></td>
<td>17</td>
<td>14</td>
</tr>
<tr>
<td>5. จ่าย 'pay'</td>
<td></td>
<td>16</td>
<td>6</td>
</tr>
<tr>
<td>6. มอบ 'present'</td>
<td></td>
<td>30</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>244</td>
<td>247</td>
</tr>
</tbody>
</table>

TABLE 18. Examples of Dative and Ditransitive Sentences in the Corpus and Web-Board Study.*

<table>
<thead>
<tr>
<th>No. of examples</th>
<th>Source</th>
<th>Construction type</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>Corpus</td>
<td>dative</td>
<td>ในตึก สมลิก กล่าวในงานแถลงข่าวที่ต้องประกาศว่า MPA จะให้รางวัล 150,000 ดอลลาร์สหรัฐฯ แก่ผู้ที่ให้ข้อมูลเกี่ยวกับดีวีดียัดเยียด (Michael Ellis announced at a press conference in Hong Kong that MPA will give a reward of 150,000 US dollars to a person who gives information about illegal DVDs.)</td>
</tr>
<tr>
<td>305</td>
<td>Pantip</td>
<td>dative</td>
<td>ตามข่าวจ่ายไป 20 บาท พร้อมขอเกี่ยวกับว่า 'ก็อยู่ดีๆ นี่ทำไมต้องจ่ายกัน?' (The taxi driver paid him 20 baht. When the car moved, I asked: 'why did you give that guy money?')</td>
</tr>
<tr>
<td>208</td>
<td>Corpus</td>
<td>dative</td>
<td>นายมีข้อ ได้กล่าวอีกหนึ่งเรื่องจะอนุญาตให้ทุกแห่ง darmกันเร็วก่อนก่อนจะถึงทาง หรือของซึ่งส่งสินผลิตภัณฑ์ (Mr. Meechai invited all organizations to donate money or necessary materials to the project.)</td>
</tr>
<tr>
<td>481</td>
<td>Pantip</td>
<td>dative</td>
<td>สมาร์ทโฟนจะเปิดให้ทางฝ่ายการบัตรการใช้สิทธิ์สิทธิ์สุดท้ายว่า 'คุณมีสิทธิ์ทุกคน' (I think before the registration, they should give out a manual of proper regulations to all applicants.)</td>
</tr>
</tbody>
</table>

*The main purpose of the English translation in these examples is to show the construction type used in each utterance.

Heaviness in this study was measured as the length of the object in terms of number of words (Hawkins 1994, Rickford et al. 1995, Arnold et al. 2000). Both content words and grammatical words that were part of the patient and recipient expressions, such as nouns, verbs, adjectives, classifiers, articles, complementizers, and
discourse markers, etc. were counted. Compound nouns, e.g., .isNull (bag + hand) ‘gloves’ and .isNull (material + writing) ‘stationery’ were considered as one single word. The analysis was done in two ways. First, the lengths of the patient object and the recipient object were examined separately. Second, the lengths of the two objects were compared and analyzed together. For the first method of analysis, each item was put into one of five groups depending on the number of words either of its objects contained: one, two, three, four, and five or more than five words. As to the second method, the length of the patient object was examined whether it was longer than, shorter than, or equal to the length of the recipient object within the same sentence. Thus, for this method, each item was put into one of three categories of relative weight. Based on the linear ordering in both constructions in Thai, i.e., patient + recipient, if the patient object was longer than the recipient object, the item was classified as NP1; in contrast, if the recipient object was longer than the patient object, it was categorized as NP2. If the two types of objects shared the same number of words, it was labeled as same.24

<table>
<thead>
<tr>
<th>Condition</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) NP1 &gt; NP2</td>
<td>NP1</td>
</tr>
<tr>
<td>b) NP2 &gt; NP1</td>
<td>NP2</td>
</tr>
<tr>
<td>c) NP1 = NP2</td>
<td>Same</td>
</tr>
</tbody>
</table>

24 As mentioned previously, Arnold et al. (2000) divided ditransitive sentences into three categories according to the relative length of the two objects: -2 or less, between -1 and 1, 2 or more (see Section 4.1.1). However, my analysis of the relative length was a little different. In my data, many utterances especially those from the corpus contained one-word objects, but they consisted of several syllables, for example, .isNull ‘prime minister’, .isNull ‘palace’, .isNull ‘ambassador.’ Since these objects might have an effect on the choice of a construction, I used a finer distinction of length: -1 or less, same, 1 or more. Thus, although heaviness in this study was measured as the number of words, the number of syllables was also taken into consideration.
The following are the results of the corpus and web-board study of heaviness in Thai dative and ditransitive constructions.

**Results of the corpus and web-board study**

The following table serves to give a general picture of the effect of heaviness on the two constructions in Thai; sentences were divided into different categories on the basis of the weight of NP1 and NP2 respectively. The results showed that the length of the object NPs was very varied. While a large number of objects consisted of only one or two words, many of them were longer than two, and the longest object contained 25 words. Overall, NP2, or the recipient object, was longer than NP1, or the patient object; the average length of the first object was 1.67 whereas the average length of the second object was 2.87. Moreover, while there were many sentences whose NP2s were heavy, i.e., containing five or more than five words, only 24 sentences had NP1s longer than four words.

**TABLE 19. Number of Sentences in Different Object-Weight Groups.**

<table>
<thead>
<tr>
<th>NP1 Weight</th>
<th>No. of sentences</th>
<th>NP2 Weight</th>
<th>No. of sentences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2 words</td>
<td>411</td>
<td>1-2 words</td>
<td>321</td>
</tr>
<tr>
<td>3-4 words</td>
<td>56</td>
<td>3-4 words</td>
<td>82</td>
</tr>
<tr>
<td>5-10 words</td>
<td>22</td>
<td>5-10 words</td>
<td>68</td>
</tr>
<tr>
<td>11-15 words</td>
<td>2</td>
<td>11-15 words</td>
<td>13</td>
</tr>
<tr>
<td>16-25 words</td>
<td>0</td>
<td>16-25 words</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>491</td>
<td>Total</td>
<td>491</td>
</tr>
</tbody>
</table>

A chi-square test was used to examine a correlation between heaviness and the two objects. The result of the test indicated that there was a significant correlation between the number of words and the type of object, revealing that NP2 tended to be longer than NP1, \( x^2 (4, N = 982) = 54.54, p < .001 \). This result is compatible with the end-weight principle: the heavier NP tends to come toward the end of a sentence.
Moreover, the result here suggests that Thai speakers tend to avoid having very heavy NP1s while they are more likely to produce both short and long NP2s. A motivation behind this will be discussed in Section 4.1.3.

In order to see how the weight of the patient and recipient objects has an effect on each of the two constructions and whether it affects the choice of a construction, I looked at the proportion of uses of each construction under different conditions of heaviness, and used a chi-square test to analyze the relationship of heaviness and the constructions. According to the Principle of No Synonymy of Grammatical Forms, two syntactic constructions that are semantically synonymous must be pragmatically different (Goldberg 1995) (see the details of this principle in Chapter 3, Section 3.2.1). The experiment of description selection in Chapter 3 shows that the dative and ditransitive in Thai share the same referential meaning: both emphasize possessive transfer. Thus, based on the principle of no synonymy, the hypothesis underlying this study on heaviness is that the dative and ditransitive constructions are distinguished by NP heaviness; there is a systematic association between the weight of the object and each of the constructions. The details and results of the weight analysis – weight of NP1, weight of NP2, and relative weight of NP1 and NP2 – are discussed below.

**Weight of NP1**

To investigate the effect of NP1 weight, dative and ditransitive sentences were counted separately and put into one of five groups according to the length of this object.
Table 20. Number of Dative and Ditransitive Sentences in Different NP1-Weight Groups.

<table>
<thead>
<tr>
<th>NP1 Weight</th>
<th>No. of datives</th>
<th>No. of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>137</td>
<td>230</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>18</td>
<td>2</td>
</tr>
<tr>
<td>5+</td>
<td>24</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>247</td>
</tr>
</tbody>
</table>

Table 21 and Figure 6 compare the percentages of dative and ditransitive sentences in each weight group.

Table 21. Percentages of Dative and Ditransitive Sentences in Each NP1-Weight Group.

<table>
<thead>
<tr>
<th>NP1 Weight</th>
<th>% of datives</th>
<th>% of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>37.3</td>
<td>62.7</td>
</tr>
<tr>
<td>2</td>
<td>68.2</td>
<td>31.8</td>
</tr>
<tr>
<td>3</td>
<td>97.2</td>
<td>2.8</td>
</tr>
<tr>
<td>4</td>
<td>90.0</td>
<td>10.0</td>
</tr>
<tr>
<td>5+</td>
<td>100</td>
<td>0</td>
</tr>
</tbody>
</table>

A chi-square test was used to examine whether there was a correlation between the weight of NP1 and either of the constructions. The result of the test showed that there was a significant effect of weight of NP1 on the distribution of the dative and ditransitive constructions, revealing that datives were more likely to be used when NP1 was longer whereas ditransitives were more likely to be used when NP1 was shorter, $x^2$.
(4, N = 491) = 98.28, p < .001. This result supported the hypothesis, based on the principle of no synonymy, which argued for the distinction between the constructions in NP weight.

To double-check the result, I divided the weight of this object into two broad groups, i.e., 1 word and 2+ words. The same result was found. When NP1 contained one word, there were 137 datives and 230 ditransitives; when it had two or more words, there were 107 datives but only 17 ditransitives. A chi-square test showed that there was a significant effect of the weight of NP1 on the distribution of the dative and ditransitive constructions, revealing that datives were more likely to be used when NP1 was longer whereas ditransitives were more likely to be used when NP1 was shorter, $\chi^2(1, N = 491) = 88.87, p < .001$.

### Weight of NP2

To investigate the effect of NP2 weight, dative and ditransitive sentences were counted separately and put into one of five groups according to the length of this object.

<table>
<thead>
<tr>
<th>NP2 Weight</th>
<th>No. of datives</th>
<th>No. of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>94</td>
<td>157</td>
</tr>
<tr>
<td>2</td>
<td>36</td>
<td>34</td>
</tr>
<tr>
<td>3</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>4</td>
<td>16</td>
<td>9</td>
</tr>
<tr>
<td>5+</td>
<td>69</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>247</td>
</tr>
</tbody>
</table>

Table 23 and Figure 7 compare the percentages of dative and ditransitive sentences in each weight group.
TABLE 23. Percentages of Dative and Ditransitive Sentences in Each NP2-Weight Group.

<table>
<thead>
<tr>
<th>NP2 Weight</th>
<th>% of datives</th>
<th>% of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>37.5</td>
<td>62.5</td>
</tr>
<tr>
<td>2</td>
<td>51.4</td>
<td>48.6</td>
</tr>
<tr>
<td>3</td>
<td>50.9</td>
<td>49.1</td>
</tr>
<tr>
<td>4</td>
<td>64.0</td>
<td>36.0</td>
</tr>
<tr>
<td>5+</td>
<td>78.4</td>
<td>21.6</td>
</tr>
</tbody>
</table>

A chi-square test was used to examine whether there was a correlation between the weight of NP2 and either of the constructions. The result of the test showed that there was a significant effect of the weight of NP2 on the distribution of the dative and ditransitive constructions, revealing that datives were more likely to be used when NP2 was longer whereas ditransitives were more likely to be used when NP2 was shorter, \( \chi^2 \) (4, \( N = 491 \)) = 46.24, \( p < .001 \). This result supported the hypothesis, based on the principle of no synonymy, which argued for the distinction between the constructions in NP weight.

Similarly, when the weight of this object was divided into two broad groups, i.e., 1 word and 2+ words, the result was still the same. When NP2 contained one word, there were 94 datives and 157 ditransitives; when it had two or more words, there were 150 datives but only 90 ditransitives. A chi-square test showed that there was a
significant effect of the weight of NP2 on the distribution of the dative and ditransitive constructions, revealing that datives were more likely to be used when NP2 was longer whereas ditransitives were more likely to be used when NP2 was shorter, $x^2 (1, N = 491) = 30.80, p < .001$.

Relative weight of NP1 and NP2

To investigate the effect of the relative weight of the two objects on the constructions, dative and ditransitive sentences were counted separately and put into three different groups of relative length: NP1 if the patient object was longer; NP2 if the recipient object was longer; same if the two objects shared the same length.

<table>
<thead>
<tr>
<th>Relative weight</th>
<th>No. of datives</th>
<th>No. of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP1</td>
<td>58</td>
<td>10</td>
</tr>
<tr>
<td>Same</td>
<td>64</td>
<td>154</td>
</tr>
<tr>
<td>NP2</td>
<td>122</td>
<td>83</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>247</td>
</tr>
</tbody>
</table>

Table 25 and Figure 8 compare the percentages of dative and ditransitive sentences in each relative-weight group.

<table>
<thead>
<tr>
<th>Relative weight</th>
<th>% of datives</th>
<th>% of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP1</td>
<td>85.3</td>
<td>14.7</td>
</tr>
<tr>
<td>Same</td>
<td>29.4</td>
<td>70.6</td>
</tr>
<tr>
<td>NP2</td>
<td>59.5</td>
<td>40.5</td>
</tr>
</tbody>
</table>
A chi-square test was used to examine whether there was a correlation between the relative weight of the two objects and either of the constructions. The result of the test showed that there was a significant effect of the relative weight of NP1 and NP2 on the distribution of dative and ditransitive constructions, revealing that datives were more likely to be used when either NP1 or NP2 was longer than the other whereas ditransitives were more likely to be used when NP1 and NP2 contained the same number of words, $\chi^2(2, N = 491) = 78.44, p < .001$.

In fact, taking the average length of the two objects in each condition into consideration, the result of the relative weight confirmed those of the independent effects of NP1 and NP2 on the dative and ditransitive constructions. When NP1 was longer than NP2, the average length of NP1 was 4.34. When NP2 was longer than NP1, the average length of NP2 was 5.18. However, when the two NPs shared the same length, the average length of either NP was only 1.13. Thus, sameness of length per se is not a real factor here. Similar to the independent NP1 and NP2 analysis, this result supported the hypothesis, based on the principle of no synonymy, which argued for the distinction between the constructions in NP weight: datives were preferred when
either of the two objects was long whereas ditransitives were preferred when the two objects were short.

<table>
<thead>
<tr>
<th>Group</th>
<th>Average length of NP1</th>
<th>Average length of NP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP1</td>
<td>4.34</td>
<td>1.51</td>
</tr>
<tr>
<td>NP2</td>
<td>1.37</td>
<td>5.18</td>
</tr>
<tr>
<td>Same</td>
<td>1.13</td>
<td>1.13</td>
</tr>
</tbody>
</table>

4.1.3 Discussion

The corpus and web-board study indicated that there is a significant correlation between NP heaviness and the use of dative and ditransitive constructions in Thai. The longer either of the objects is, the more likely the dative is to be used. In contrast, the shorter the two objects are, the higher tendency the ditransitive has to be chosen. Therefore, heaviness has an effect on the constructions. The two argument structure constructions in Thai can be differentiated by the weight of the object, and the choice between the two constructions is determined by this type of pragmatic property. The dative construction is more associated with long and complicated objects whereas the ditransitive construction is more associated with short and simple objects.

What motivates these weight patterns? Why do Thai speakers prefer the dative when objects are long and the ditransitive when objects are short? One possible explanation is to facilitate the comprehension process. With the preposition distinguishing between the patient NP and the recipient NP, the structure of the dative is more transparent than the ditransitive. When the two objects are short, e.g., containing one or two words, it is easy for the listener to differentiate one object from the other in either of the constructions. However, when one of the objects is long,
speakers prefer to use the dative, where the dative preposition serves to separate the long complicated object from the other object, hence facilitating efficient communication. In other words, when processing load increases, explicitness becomes more important and the grammatical relation, i.e., the dative object, is explicitly marked.

The analysis that the choice of the dative over the ditransitive is to facilitate efficient communication is supported by as well as consistent with the results in Table 19, which suggest that speakers are more likely to avoid heavy NP1 than heavy NP2. Based on Hawkins' (1994) IC proposal, the shorter NP1 is, the faster the listener will be able to identify all post-verbal constituents in a sentence, i.e., the patient and recipient objects. And this helps facilitating communication and making the comprehension process easier.

Thus, we can say that when choosing between the dative and ditransitive constructions, Thai speakers are concerned with ease of processing. First, they avoid having heavy NP1. Second, in the case where NP1 and/or NP2 are heavy, they prefer to choose the dative construction which has the dative preposition to separate the objects. Therefore, the choice of datives over ditransitives when the object is heavy can be seen as a hearer-oriented strategy that makes the listener’s comprehension task easier.

One interesting point is that the principle of end weight seems to play a role in the Thai constructions, but in a way different from how it works in the English constructions. As shown previously, the mean length of NP1 was shorter than NP2 (1.67 vs. 2.87). Moreover, while there were 88 NP2s which contained five or more
than five words, only 24 NPs were longer than four words (see Table 19). Thus, in English, the end-weight principle distinguishes between the two types of objects and also between the two types of constructions: the second object tends to be heavier than the first object, and the dative and ditransitive are associated with heavy recipients and heavy patients respectively. In Thai, the end-weight principle distinguishes between the two types of objects: the second object tends to be heavier than the first object in both argument structure constructions. It also distinguishes between the two constructions: when either object is heavy, the dative tends to be chosen over the ditransitive.

Therefore, it can be concluded that the dative and ditransitive constructions in Thai are distinguished by the pragmatic property of NP heaviness. The dative construction tends to occur with heavy objects while the ditransitive construction tends to occur with light objects. To see whether there is any relation between different pragmatic properties, i.e., heaviness and newness of arguments, and whether this relation contributes to our understanding of the association between argument structure and pragmatic properties, we first need to know information structure specific to each of the constructions.

4.2 Information structure of Thai dative and ditransitive constructions

4.2.1 Role of information structure in argument structure constructions

This section deals with the general question of the effect of information structure on argument structure and the more specific question of how it influences the dative-ditransitive alternation. The purpose of the section is to provide background on the association between dative-ditransitive constructions and information structure as
generally discussed in the previous literature, before investigating in the next section how this pragmatic property has an effect on the constructions in Thai.

It has been recognized that variation in word order and choice of construction is correlated with information status in many languages (Chafe 1976, Gundel 1988, Prince 1992). “There is a vast literature of interrelated notions about information structure and how it relates to the way that discourse information is represented in the minds of speakers and hearers, and a variety of terms have been proposed to account for informational distinctions” (Arnold et al. 2000:29). Some distinctions focus on the informational partitioning of propositions, for example, topic vs. focus; others instead concentrate on the accessibility of discourse entities, for example, given vs. new information. These four notions play a major role in the packaging of information structure (Goldberg 2003).

A sentence topic refers to a matter of already established current interest that a statement is about and with respect to which a proposition is to be interpreted as relevant (Lambrecht 1994). Focus, according to Halliday (1967: 204), is “one kind of emphasis, that whereby the speaker marks out a part (which may be the whole) of a message block as that which he wishes to be interpreted as informative.” Similarly, Lambrecht (1994:213) distinguished non-presupposed from presupposed information, and defined focus as “the semantic component of a pragmatically structured proposition whereby the assertion differs from the presupposition.”

The distinction between given and new information is based on the concept of accessibility, which refers to “the extent to which, or the ease with which, an entity is recoverable from earlier in a discourse or from the speech situation, or in some cases...
from both" (Collins 1995:41). This concept can be represented by two broad categories: given vs. new. An NP is classified as given if its referent has been previously mentioned in the discourse; an NP whose referent is truly new to the discourse is classified as new (Prince 1992). However, such a given-new contrast is a simplified representation of accessibility. Although new information is always less accessible than given information, it should be noted that there are many types of given information, and they fall at different points along a continuum of accessibility (Arnold et al. 2000).

The correlations between topic and focus on the one hand, and given and new information on the other, are complicated; however, some rough generalizations can be made. Most commonly, topics are discourse given because most topics are continuing topics. On the other hand, focal elements tend to be discourse new, since asserting information most commonly occurs via the mention of a new entity (Goldberg 2003).

These generalizations become stronger when we take into consideration that topics and given information tend to precede foci and new information. Such an ordering has been observed for several years by many linguists. For example, Clark and Clark (1977:548) noted the discourse ordering of elements in a clause and summarized it succinctly: “given information should appear before new information.” Likewise, Gundel (1988) studied the typical order of constituents, and formulated a rule of discourse which she named the given-before-new principle, i.e., state what is given before what is new in relation to it.

Clause-level constructions are associated with their own information structure properties (Goldberg 2003). Among various types of information structure patterns, the
given-before-new principle accounts for constituent ordering in several argument structure constructions. For example, in many languages including English, the subject typically conveys given information, while the elements that come later in a sentence are associated with new information.

Similarly, it has been argued that the choice between the dative and ditransitive constructions in English is governed by the discourse constraint which prefers the NP conveying new information to be expressed toward the end of the sentence (e.g., Collins 1995, Arnold et al. 2000, Levin and Rappaport Hovav 2002). Given that the tendency is for the more topical element to precede the less topical one, in the dative construction, where the patient precedes the recipient, the former argument is typically associated with given information and the latter with new information. On the contrary, the ditransitive construction, in which the recipient comes before the patient, is typically associated with the reverse pattern of information structure.

That the contrast between datives and ditransitives has discourse consequences was shown early by Erteschik-Shir (1979). In her discourse study of the English dative-ditransitive alternation, Erteschik-Shir introduced the notion of dominance, i.e., a particular constituent of a sentence to which the speaker “seeks to direct the hearer’s attention” (443), which can be roughly compared to that of assertion (Polinsky 1998). She argued that the function of Dative Movement is “to ensure the dominant interpretation of the NP that ends up in final position” (452), and this accounts for the preference of one structure over the other in a given context. Thus, she claimed that what rules out sentences like John gave a girl it is a clash in information structure. The
pronominal object *it* invokes the notion of given information, but it appears in final position, which is the position usually occupied by dominant arguments.

Collins (1995) examined the information structure of the dative and ditransitive constructions in English. He divided the two types of objects into three categories according to their information accessibility: given if they were previously mentioned and/or referred to directly in the speech situation, accessible if they were inferred, generally known, or last mentioned some time ago in the discourse, new if they were introduced for the first time into the discourse, or already present in the discourse but newly identified. Table 27 shows the results of his corpus analysis, which reflects the influence of the given-before-new principle on the two structures.

**Table 27. Accessibility of Receivers and Entities in Dative and Ditransitive Constructions (Collins 1995:43).**

<table>
<thead>
<tr>
<th></th>
<th>Receiver no.</th>
<th>%</th>
<th>Entity no.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ditransitive construction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Given</td>
<td>97</td>
<td>89.8</td>
<td>7</td>
<td>6.5</td>
</tr>
<tr>
<td>Accessible</td>
<td>10</td>
<td>9.3</td>
<td>13</td>
<td>12.0</td>
</tr>
<tr>
<td>New</td>
<td>1</td>
<td>0.9</td>
<td>88</td>
<td>81.5</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>100</td>
<td>108</td>
<td>100</td>
</tr>
<tr>
<td><strong>Dative construction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Given</td>
<td>24</td>
<td>42.1</td>
<td>22</td>
<td>38.6</td>
</tr>
<tr>
<td>Accessible</td>
<td>19</td>
<td>33.3</td>
<td>15</td>
<td>26.3</td>
</tr>
<tr>
<td>New</td>
<td>14</td>
<td>24.6</td>
<td>20</td>
<td>35.1</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>100</td>
<td>57</td>
<td>100</td>
</tr>
</tbody>
</table>

Here, receivers in the ditransitive construction, where they do not occupy final position, are dominantly given (89.8%); however, in the dative construction, where they occupy final position, they are spread across the accessibility scale: from 42.1% given, to 33.3% accessible, to 24.6% new. Entities in the ditransitive construction, where they occupy final position, are mainly new (81.5%); however, in the dative construction,
where they do not occupy final position, they are spread across the accessibility scale: from 38.6% given, to 26.3% accessible, to 35.1% new.\(^{25}\)

In a similar vein, Polinsky (1998:413) made crucial generalizations about the discourse characteristics of the nominals in the English ditransitive construction: “the recipient in the double object construction is associated with the pragmatic presupposition of existence, subordinate to the pragmatic presupposition in regards to the subject of transfer... The patient is underspecified in that it is not directly associated with pragmatic presupposition and can therefore be associated with pragmatic assertion.” Based on these generalizations, she compared the two types of objects and argued that in the ditransitive construction, the recipient must be superior to the patient in topicality; conversely, the patient is superior to the recipient in focusing. She proposed the degrees of discourse prominence of the NPs in this construction as follows (414):

```
<table>
<thead>
<tr>
<th>agent</th>
<th>recipient</th>
<th>patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑</td>
<td>topicality increasing</td>
<td>focusing increasing</td>
</tr>
</tbody>
</table>
```

Polinsky supported the differences in discourse status between the two objects by referring to Thompson’s (1990, 1995) study of the English dative-ditransitive alternation. The results in Thompson’s study showed that in the ditransitive construction, the recipient is old information in 92% of all cases while the patient is old

\(^{25}\) Collins noticed the dative and ditransitive contrast in terms of the sharpness with which receivers and entities are differentiated within them, i.e., strongly in the case of the ditransitive construction but only mildly in the case of the dative construction. He accounted for this contrast by suggesting that the two objects in the dative do not need a strongly communicative difference because they are differentiated clearly by the preposition to, which marks the second object, not the first, as the dative object.
information in only about 30% of all cases, revealing opposite tendencies of the information status between the two objects.

Apart from NP weight, Arnold et al. (2000) aimed to show that the newness of the object NPs is an important factor to the alternation between datives and ditransitives in English. In their corpus analysis, they examined relevant utterances containing the verb give; each object in the utterances was coded as given or new according to whether the referent had previously appeared in the discourse.\(^\text{26}\) As to the experiment involving giving different objects to different characters, they controlled the newness of the referents by giving a cue card to participants who played the role of the actor (see the details of this experiment in Section 4.1.1). Each trial was initiated by the actor asking a question, which established either the objects or the characters as given. For example, if the actor’s cue card showed a picture of a set of three ducks, he would ask a question like “What about the yellow duck, the orange duck, and the purple duck?,” hence establishing the ducks as given. The director would then follow her own cue card in order to know which objects to tell the actor to give to which characters. The results of both corpus and experimental studies supported the given-before-new hypothesis; newness influenced the choice between the dative and ditransitive constructions. Speakers tended to produce utterances such that the newer constituent came later in the sentence. As a result, the ditransitive was produced more when the theme object, which occupies final position, was newer than the goal.

\(^{26}\) Arnold et al.’s original plan was to divide objects into three categories: given, inferable, and new. However, due to a very small number of inferable NPs, those labeled as given and inferable were finally collapsed and classified together as given information.
Similar to the principle of end weight, there are advantages of the given-before-new principle from the perspectives of both the speaker and the listener (Arnold et al. 2000). On one hand, "beginning a sentence with reference to something that has been mentioned before provides a link between what has already been said and what is about to be said" (32). This lends continuity to the discourse and thus facilitates comprehension to the listener. Moreover, by having a specific sentence position recognized as the locus of new information, speakers can convey to their listeners what they are saying that is new, and this also facilitates efficient communication (Arnold et al. 2000).

With respect to the speaker’s account, planning and producing speech involve at least three processes: (1) decide what to say, (2) formulate linguistic expressions to communicate the idea, and (3) articulate the utterance (Levelt 1989). Given the time constraint of spontaneous conversation, any of these processes are likely to be more difficult when the speaker refers to something new instead of something given, for which both conceptual and linguistic representations are already active. Thus, by postponing new and difficult NPs, speakers allow themselves more time to complete these processes (Arnold et al. 2000). Based on this account, the dative is preferred when speakers want to postpone new recipient objects; in contrast, the ditransitive is preferred when patient objects are newer.

In sum, alternate argument structure constructions like datives and ditransitives can be differentiated by information structure. There is a general tendency that given elements come in a clause before new elements. Based on this given-before-new principle, datives and ditransitives in English are distinct in terms of the discourse
status of the two objects. In the dative construction, the recipient NP tends to be new and the patient NP tends to be given; conversely, the patient NP in the ditransitive structure is typically associated with new information while its recipient NP with given information. The investigations of the functions of given-before-new show that postponing new elements allows the speaker more time to formulate new and difficult constituents and at the same time facilitates the listener’s task of comprehension processes. In the next section, we will see how information structure has a role in Thai, and whether the given-before-new principle can account for the Thai constructions.

4.2.2 Corpus and web-board study of information structure in Thai

This section deals with the question of how information structure influences the dative and ditransitive constructions in Thai. The purpose of the section is to distinguish the two constructions by the discourse status of object arguments.

In English, the dative and ditransitive have the opposite orderings of the recipient and patient objects, thus they can be clearly differentiated by the given-before-new principle. The dative is preferred when the first object, i.e., the patient, is given while the second object, i.e., the recipient, is new. Conversely, the ditransitive is preferred when the first object, i.e., the recipient object, is given while the second object, i.e., the patient, is new. Similar to NP heaviness, a problem occurs when we apply this discourse principle to the dative and ditransitive constructions in Thai. Due to the shared post-verbal ordering, patient + recipient, if there are any information structure differences between both constructions, they cannot result from ordering differences. Thus, it would be interesting to see how information structure
differentiates the dative and ditransitive constructions in Thai, and how we can account for such differences?

Toward this end, the same set of data drawn from the online corpus and Pantip which was investigated in terms of heaviness was analyzed, but the analysis in this section focused instead on the information structure of object arguments associated with each of the two constructions. One advantage of studying the two pragmatic properties from the same source of data is that it allows us to see more easily if there is any relationship between them.

The study adopted the distinction between discourse-given, inferable, and discourse-new originally proposed by Prince (1992). An NP is classified as given if its referent has been previously mentioned in the discourse. An NP is classified as inferable if its referent has not been explicitly mentioned but could be inferred from something else that was mentioned in the discourse. An NP is classified as new if its referent is mentioned for the first time in the discourse. Prince’s characterization of information structure thus offers a straightforward coding scheme, which is useful for empirical studies (Arnold et al. 2000).

Given this distinction, each of the two objects in all items was coded as one of three categories: given, inferable, and new. Each dative and ditransitive sentence was extracted together with the entire preceding context so that it was possible to determine whether its objects had the referents which had previously been mentioned or could be inferred in the discourse. Examples of categorizing object NPs in terms of discourse status are in Table 28.
**Table 28. Examples of Categorizing Objects in terms of Discourse Status.*

<table>
<thead>
<tr>
<th>No. of examples</th>
<th>Source</th>
<th>Construction type</th>
<th>NP1 Discourse status</th>
<th>NP2 Discourse status</th>
</tr>
</thead>
<tbody>
<tr>
<td>110</td>
<td>Corpus</td>
<td>dative</td>
<td>new</td>
<td>new</td>
</tr>
</tbody>
</table>

(Doctors reported that nowadays Thais smoke 30,000 million cigarettes per year, which are worth 15,000 million baht. There are more than 11.4 million smokers. Of this number, 800,000 are younger than 19 years old. However, the law enforcement on smoking is not strict. Moreover, there has been a lack of budget for a campaign of giving knowledge to the public.)

<table>
<thead>
<tr>
<th>No. of examples</th>
<th>Source</th>
<th>Construction type</th>
<th>NP1 Discourse status</th>
<th>NP2 Discourse status</th>
</tr>
</thead>
<tbody>
<tr>
<td>469</td>
<td>Pantip</td>
<td>ditransitive</td>
<td>new</td>
<td>new</td>
</tr>
</tbody>
</table>

(On last Saturday, May 22, 2004, I donated dogs and cats food at Wat Prongphaichantharangsee, Nakornnayok.)

<table>
<thead>
<tr>
<th>No. of examples</th>
<th>Source</th>
<th>Construction type</th>
<th>NP1 Discourse status</th>
<th>NP2 Discourse status</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>Corpus</td>
<td>dative</td>
<td>new</td>
<td>old</td>
</tr>
</tbody>
</table>

(The spokesman of the Foreign Ministry of Vietnam announced yesterday that Vietnam is happy that Kiichi Miyasawa, Japanese Prime Minister, offered to hold an international meeting on Indochina development in Japan during his visit to Thailand last month. The meeting aims to promote economic development in three countries in Indochina, which are Laos, Cambodia, and Vietnam. It also aims to promote cooperation in encouraging stability and development in the South-East Asia region. Moreover, last November Japan decided to give loans to Vietnam for the first time within the past 14 years.)

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*The English translation of the examples in this table is mainly intended to reflect the structure of the Thai sentences. Thus, some sentences may violate the conventional rules of grammar in English, e.g., the use of donate in the ditransitive form (donated dogs and cats food).

Table 29 includes the number of sentences in three different groups classified on the basis of the discourse status of NP1 and NP2 respectively. Since the number of NPs coded as inferable was too small to be informative, they were finally collapsed and classified as given information. Thus, the analysis below will deal with only the
distinction between two broad categories of information structure: given (given + inferable) and new.

### TABLE 29. Number of Sentences in Different Object-Discourse Groups.

<table>
<thead>
<tr>
<th>Discourse status</th>
<th>NP1 No. of sentences</th>
<th>Discourse status</th>
<th>NP2 No. of sentences</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>368</td>
<td>New</td>
<td>202</td>
</tr>
<tr>
<td>Given</td>
<td>123</td>
<td>Given</td>
<td>270</td>
</tr>
<tr>
<td>Inferable</td>
<td>0</td>
<td>Inferable</td>
<td>19</td>
</tr>
<tr>
<td>Total</td>
<td>491</td>
<td>Total</td>
<td>491</td>
</tr>
</tbody>
</table>

The following are the results of the corpus and web-board study of information structure in Thai dative and ditransitive constructions.

**Results of the corpus and web-board study**

The overall data indicated that on average NP1, or the patient object, tended to be newer than NP2, or the recipient object; whereas NP2 tended to be more discourse-given than NP1. As shown in Table 29, the number of NP1s which were classified as given was 123, and the number of NP1s which were classified as new was 368 (25% vs. 75%). On the other hand, there were 289 sentences that contained given NP2s and 202 sentences that had new NP2s (59% vs. 41%).

A chi-square test was used to examine the correlation between information structure and the two objects. The result of the test showed that there was a significant correlation between discourse status and the type of object, revealing that NP2 was more likely to be discourse-given than NP1, $x^2 (1, N = 982) = 115.23, p < .001$. This result is surprising since it contradicts the general tendency of given-before-new. How, then, does information structure specifically influence the constructions in Thai and how can we account for such influences?
In order to see how information structure has an effect on the dative and ditransitive in Thai, I looked at the proportion of uses of each construction under different conditions of newness, and used a Fisher’s exact test to analyze the relationship of newness and the constructions. The hypothesis underlying this study is that the dative and ditransitive constructions are distinguished by information structure; there is a systematic association between the discourse status of the object and each of the two constructions. The details and results of the analysis on information structure – discourse status of NP1 and discourse status of NP2 – are discussed below.

*Discourse status of NP1*

To investigate the effect of NP1 discourse status, dative and ditransitive sentences were counted separately and put into one of two groups according to the discourse status of this object.

**Table 30. Number of Dative and Ditransitive Sentences in Different NP1-Discourse Groups.**

<table>
<thead>
<tr>
<th>NP1 Discourse status</th>
<th>No. of datives</th>
<th>No. of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>186</td>
<td>182</td>
</tr>
<tr>
<td>Given</td>
<td>58</td>
<td>65</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>247</td>
</tr>
</tbody>
</table>

Table 31 and Figure 9 compare the percentages of dative and ditransitive sentences in each discourse group.

**Table 31. Percentages of Dative and Ditransitive Sentences in Each NP1-Discourse Group.**

<table>
<thead>
<tr>
<th>NP1 Discourse status</th>
<th>% of datives</th>
<th>% of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>50.5</td>
<td>49.5</td>
</tr>
<tr>
<td>Given</td>
<td>47.2</td>
<td>52.8</td>
</tr>
</tbody>
</table>
A Fisher's exact test was used to examine whether there was a correlation between the discourse status of NP1 and either of the constructions. The result of the test showed that there was no significant effect of discourse status of NP1 on the distribution of dative and ditransitive constructions, revealing that 50.5% of all sentences with new NP1s were in the dative structure and 49.5% in the ditransitive structure, while 47.2% of all sentences with given NP1s were in the dative structure and 52.8% in the ditransitive structure ($p = .53$). This did not support the research hypothesis which argued for the systematic relation between the discourse status of the first object and the two constructions.

**Discourse status of NP2**

To investigate the effect of NP2 discourse status, dative and ditransitive sentences were counted separately and put into one of two groups according to the discourse status of this object.

**Table 32. Number of Dative and Ditransitive Sentences in Different NP2-Discourse Groups.**

<table>
<thead>
<tr>
<th>NP2 Discourse status</th>
<th>No. of datives</th>
<th>No. of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>116</td>
<td>86</td>
</tr>
<tr>
<td>Given</td>
<td>128</td>
<td>161</td>
</tr>
<tr>
<td>Total</td>
<td>244</td>
<td>247</td>
</tr>
</tbody>
</table>
Table 33 and Figure 10 compare the percentages of dative and ditransitive sentences in each discourse group.

TABLE 33. Percentages of Dative and Ditransitive Sentences in Each NP2-Discourse Group.

<table>
<thead>
<tr>
<th>NP1 Discourse status</th>
<th>% of datives</th>
<th>% of ditransitives</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>57.4</td>
<td>42.6</td>
</tr>
<tr>
<td>Given</td>
<td>44.3</td>
<td>55.7</td>
</tr>
</tbody>
</table>

A Fisher's exact test was used to examine whether there was a correlation between the discourse status of NP2 and either of the constructions. The result of the test showed that there was a significant effect of discourse status of NP2 on the distribution of dative and ditransitive constructions, revealing that datives were more likely to be used when NP2 was new whereas ditransitives were more likely to be used when NP2 was given ($p < .001$). This supported the research hypothesis which argued for the systematic relation between the discourse status of the second object and the two constructions.

4.2.3 Discussion

The corpus and web-board study indicated that there is a significant correlation between the discourse status of NP2, as opposed to NP1, and the use of dative and
ditransitive constructions in Thai. The newer the second object is, the more likely the 
dative is to be used. In contrast, the more discourse-given this object is, the higher the 
tendency the ditransitive has to be chosen. Therefore, even though there is no 
difference in ordering of the object arguments, the dative and ditransitive constructions 
in Thai can still be differentiated by information structure, and the choice between 
these constructions is determined by this pragmatic property. The dative is more 
strongly associated with new recipient objects whereas the ditransitive is more strongly 
associated with given recipient objects.

One interesting remark involves the comparison between heaviness and 
newness specific to the Thai dative and ditransitive constructions. Due to the identical 
ordering of the object arguments in these two constructions, we may not expect to see 
the light-before-heavy and given-before-new principles play the same roles in the Thai 
constructions as in some other languages including English. Indeed, these two 
pragmatic properties show different patterns when applied to the Thai constructions. In 
the case of NP heaviness, the two types of objects in both constructions can be 
differentiated by the end-weight principle: the second object tends to be heavier than 
the first object. Conversely, the discourse status of the object arguments does not 
conform to the given-before-new principle; the first object tends to be more strongly 
associated with new information than the second object.

What are then the functions of information structure peculiar to the Thai 
constructions? In other words, why do Thai speakers prefer the dative when the 
recipient object is discourse-new, and why do they prefer the ditransitive when this 
object is given? The questions above may be best answered when we consider the
correlation between these two pragmatic properties. The next section, dealing with the relation of heaviness and newness, aims to investigate these questions.

4.3 Relation of heaviness and information structure

This section deals with the question of the correlation between the two pragmatic properties – heaviness and information structure – specific to the dative and ditransitive constructions in Thai. The purpose is to see whether there is any relation between heaviness and newness and whether this relation can account for the pragmatic properties peculiar to the constructions in Thai. The results of the corpus and web-board study on heaviness revealed that the dative is preferred when either of the two objects is long whereas the ditransitive is preferred when the two objects are short. As for the study on information structure, the results indicated that there is a significant correlation between the dative and ditransitive constructions and the discourse status of NP2, in contrast to NP1. The dative is more strongly associated with new NP2s while the ditransitive is more strongly associated with given NP2s.

To start with, I will examine the relation between heaviness and newness associated with the Thai constructions by using a statistical test. If the result shows that the two factors significantly correlate, then I will analyze how this correlation further explains the patterns of heaviness and newness peculiar to the dative and ditransitive in Thai.

To examine the relation between heaviness and newness, I looked at the number of objects under different conditions of both heaviness and newness, and used a chi-square test to analyze the relationship of the two factors. The hypothesis underlying this study is that there is a systematic association between the weight and discourse
status of each object. The details and results of the weigh-discourse analysis – NP1 relation and NP2 relation – are discussed below.

Weight and discourse status of NP1

To investigate the correlation between weight and discourse status of NP1, the patient objects in each of the following weight-discourse groups were counted.

<table>
<thead>
<tr>
<th>NP1 Weight</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP1 Discourse status</td>
<td>New</td>
<td>276</td>
<td>32</td>
<td>23</td>
<td>18</td>
</tr>
<tr>
<td>Given</td>
<td>91</td>
<td>12</td>
<td>13</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 35 and Figure 11 compare the percentages of the new vs. given patient objects in each weight group.

<table>
<thead>
<tr>
<th>NP1 Discourse status</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>75.2</td>
<td>72.73</td>
<td>63.89</td>
<td>90.0</td>
<td>79.17</td>
</tr>
<tr>
<td>Given</td>
<td>24.8</td>
<td>27.27</td>
<td>36.11</td>
<td>10.0</td>
<td>20.83</td>
</tr>
</tbody>
</table>

A chi-square test was used to examine whether there was a correlation between the two pragmatic properties of NP1. The result of the test showed that there was no
significant correlation between the weight and discourse status of NP1, \( x^2(4, N = 491) = 5.11, p \leq 1 \). This did not support the research hypothesis which argued for the systematic relation between the weight and discourse status of the first object.

Weight and discourse status of NP2

To investigate the correlation between weight and discourse status of NP2, the recipient objects in each of the following weight-discourse groups were counted.

<table>
<thead>
<tr>
<th>NP2 Weight</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP2 Discourse status</td>
<td>New</td>
<td>70</td>
<td>35</td>
<td>30</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>Given</td>
<td>181</td>
<td>35</td>
<td>27</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 36. Number of NP2s in Different Weight-Discourse Groups.

Table 37 and Figure 12 compare the percentages of the new vs. given recipient objects in each weight group.

<table>
<thead>
<tr>
<th>NP2 Weight</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>NP2 Discourse status</td>
<td>New</td>
<td>27.89</td>
<td>50.0</td>
<td>52.63</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>Given</td>
<td>72.11</td>
<td>50.0</td>
<td>47.37</td>
<td>56</td>
</tr>
</tbody>
</table>

Table 37. Percentages of New vs. Given NP2s in Each Weight Group.

Figure 12. Percentages of New vs. Given NP2s in Each Weight Group.
A chi-square test was used to examine whether there was a correlation between the two pragmatic properties of NP2. The result of the test showed that there was a significant correlation between the weight and discourse status of NP2, revealing that longer NP2s tended to be newer whereas shorter NP2s tended to be more discourse-given, $x^2(4, N = 491) = 42.06, p < .001$. This supported the research hypothesis which argued for the systematic relation between the weight and discourse status of the second object.

In sum, the chi-square test revealed a significant correlation between the weight and discourse status of the second object, in contrast to the first object, whose weight and discourse status do not significantly correlate. The question that follows is: are these independent effects or which of the two factors is the real cause? A binary logistic regression was performed to evaluate the effects of NP2 weight and NP2 discourse status on the choice between the dative and ditransitive constructions. The results revealed that the overall model was significant according to the Model chi-square, $p = .00$, and the model predicted 61.9% of the responses correctly. The weight of NP2 was a significant variable, $p = .00$, whereas the variable of discourse status of NP2 was not statistically significant, $p = .251$. Thus, although both factors independently correlate with the constructions, the binary logistic regression indicated that the weight of NP2 explains away the discourse status of NP2, and thus it is the real cause that influences the choice between the constructions.

Therefore, based on the weight-discourse analysis, we may account for the two pragmatic properties associated with the dative and ditransitive constructions in Thai and also their relation in the following way. In terms of NP heaviness, the dative
construction is preferred when either of the objects is long whereas the ditransitive construction is preferred when the two objects are short. Such different patterns of NP weight serve to facilitate comprehension processes, by having the dative preposition separate one object from the other. The differences in weight, in turn, motivate the patterns of information structure specific to the constructions. The dative is likely to occur when NP2 is new while the ditransitive is likely to occur when NP2 is given.

The correlation between heaviness and newness is found in many languages; items that were previously mentioned tend to be accessible to both speaker and listener, and require less complex descriptions than items which are not (Givón 1983, Ariel 1990, Arnold et al. 2000). Accordingly, items that are new tend to be complex whereas items that are given tend to be simple. The clearest example is the use of pronouns, which refer to given information with a single (usually monosyllabic) word (Arnold et al. 2000).

In Thai, the analysis shows that there is the correlation between longer NP2 and newer NP2 and between shorter NP2 and given NP2. That is, the dative, which is associated with longer NP2, is more likely to be used when this object is new; on the contrary, the ditransitive, which is associated with shorter NP2, is more likely to be used when this object is given. Table 38 and Figure 13 compare the percentages of datives and ditransitives under four different conditions of NP2’s weight (one word vs. two or more words) and discourse status (given vs. new).
As expected, the percentage of datives was highest when NP2 was long and also discourse-new; on the other hand, the ditransitive was used mostly when NP2 was short and discourse-given. Thus, we can conclude that the dative and ditransitive in Thai can be differentiated in heaviness and information structure, and that like in many other languages, there is a correlation between these two pragmatic properties associated with the two constructions in Thai.

In conclusion, the study of the pragmatic properties of the dative and ditransitive constructions in Thai provides answers to three important questions in the following ways. First, there is the correlation between heaviness and the two constructions: the dative is likely to be used when either object is long while the ditransitive is preferred when both objects are short. Second, there is the correlation between information structure and the two constructions: the dative is used more often
when the recipient object is new whereas the ditransitive is used more often when this object is given. Third, the study of the pragmatic properties of the datives and ditransitives in Thai can best be understood when the relation of heaviness and newness is taken into account. The pattern of heaviness associated with each of the constructions accounts for and thus correlates with the discourse status of the objects peculiar to the dative and ditransitive constructions in the language.
CHAPTER 5
SOCIAL MEANINGS OF DATIVES AND DITRANSITIVES IN THAI

The central goal of syntactic theory is to develop a theory of the representation of grammar in the mind/brain of individual speakers (Chomsky 1965); the goal of work on sociolinguistics is to understand how language operates in society (Labov 1972). These differences in goals between the two subfields of linguistics have resulted in different perspectives on variation. In sociolinguistics, language is seen as inherently variable, and much work has been concerned with how the use of language varies according to social contexts. In contrast to sociolinguistics, the study of variation has made much less impact on the development of syntactic theory (Henry 2002), as Hudson's (1997:73) notes of work on variation:

Most of this work has fallen clearly within the sphere of sociolinguistics, with its special focus on the relationships between linguistic and social structures; very little could be described as the study of language structure as such, and even less has had any influence on (synchronic) theories of language structure. Indeed, it is hard to think of a single example (until very recently) where statistical data on inherent variability has been used as evidence in discussion on language structure.

Given such limitation of syntactic study, this chapter attempts to incorporate the sociolinguistic notion of variation into the study of syntax. Its objectives are to investigate two syntactic constructions, namely, the dative and ditransitive constructions in Thai, in terms of social properties, and to see how the alternation between these argument structure constructions varies in different social conditions. The social factors that are considered in the study are register, sex of speakers, and age of speakers.

Understanding the association between the constructions and social meanings is of interest for several reasons. First, despite much work on the dative-ditransitive
alternation, there is no study that has looked beyond syntactic and pragmatic factors, and analyzed the two constructions as alternating variants, by which the use of one rather than the other is determined by social factors. Moreover, it provides an example of combining two linguistic subfields that are often considered relatively distinct: syntax and sociolinguistics/variation theory, and shows how such combination contributes to the understanding of syntactic structure. Finally, it addresses the question of whether variation on the level of syntax is equally accessible to study in the framework of the sociolinguistic variable, and equally open to influence from external constraints (Lavandera 1978, Romaine 1984, Rickford et al. 1995).

The questions that are the focus of the chapter are: (1) how does register influence the dative and ditransitive constructions in Thai; and (2) how do sex and age of speakers influence the dative and ditransitive constructions in Thai. In order to answer the first question, data from the on-line corpus and Pantip’s web-boards were analyzed. As for the second question, data from the experiments on grammaticality judgments and description selection were analyzed. The analysis in this chapter focuses on how perspectives and uses of the constructions vary across different registers and speakers of various sex-age categories.

The chapter consists of three main sections. The first section deals with register, i.e., associations of the dative and ditransitive constructions with formality and informality of situations. The second section deals with sex and age, i.e., differences among speakers of different sex-age categories in their grammatical and semantic perceptions of each of the constructions. The third section serves as a conclusion. It
discusses how the study of social properties contributes to the understanding of alternating syntactic constructions like the dative and ditransitive constructions in Thai.

5.1 Register differences of Thai dative and ditransitive constructions

5.1.1 Studies of register in language variation

This section deals with the question of how register influences variation in language. The purpose of the section is to provide background on the previous studies of register as a conditioning factor for variation, before investigating specifically in the next section how this social property has an effect on the dative and ditransitive constructions in Thai.

Intra-speaker variation is “variation in the speech of individual speakers rather than across groups of speakers (inter-speaker variation)” (Schilling-Estes 2002:375). Intra-speaker variation encompasses a number of different types of variation. One important type is dialect, which refers to a language variety associated with particular groups of speakers, as determined by geographic region, education, social class, and so on (Halliday 1978, Crystal 1991, Biber and Finegan 1994). For example, a speaker may show higher usage levels for a feature like r-lessness as in [fa:m] ‘farm’, the feature associated with traditional Southern American speech, when talking with an older Southerner who uses this feature than when talking with a speaker who does not (Schilling-Estes 2002). Another important type of intra-speaker variation is register, which refers to a language variety defined according to its particular situation of use (Halliday 1978, Crystal 1991). For example, a speaker may show higher usage levels for pronunciation features considered to be formal like [ɪŋ] rather than [ən] or [ɪn] in words such as swimming and playing, when talking with a colleague about work-related
matters than when talking with a friend about entertainment or family (Schilling-Estes 2002).²⁷

Interest in register variation grew from the merging of situational, social, and descriptive analyses by anthropological linguists during the first half of the twentieth century (Biber and Finegan 1994). Two major early studies focusing on situational variation are Malinowski's (1923) discussion of the “context of situation” and Firth’s (1935) elaboration of that concept. In the late 1950s and 1960s a number of papers and books appeared describing particular registers of various languages and the ways in which linguistic form is influenced by communicative purpose and the context of situation, e.g., Brown and Gilman (1960), Ferguson and Gumperz (1960), Crystal and Davy (1969) (Biber and Finegan 1994).

Ferguson (1994:20) examined studies on register and proposed the basic working assumption implicit in sociolinguistic study of register variation as follows:

A communication situation that recurs regularly in a society (in terms of participants, setting, communicative functions, and so forth) will tend over time to develop identifying markers of language structure and language use, different from the language of other communication situations.

According to this assumption, people participating in recurrent communication situations tend to develop certain characteristics of language, which finally become markers of those particular communication situations.

In accordance with this assumption, Biber (1994:33) suggested that a register study should consist of three components: description of the situational characteristics of a register, description of the linguistic characteristics, and functional or conventional

²⁷ In addition to the term register, the terms genre, text type, and style have been used to refer to language varieties associated with situational uses (Biber and Finegan 1994). All these terms are somewhat overlapping, and they are clearly distinguished from dialect, which is associated with variation according to the user.
associations between the situational and linguistic features. These components are illustrated by the following:

<table>
<thead>
<tr>
<th>Situational features</th>
<th>Functions and Conventions</th>
<th>Linguistic forms</th>
</tr>
</thead>
</table>

The association is seen as bidirectional, with the situational characteristics influencing the choice of linguistic form, while the choice of linguistic features in turn helping to create the situation.

Any linguistic feature having a functional or conventional association can be distributed in a way that distinguishes among registers. Such features come from many linguistic classes, including phonological features (phones, pauses, intonation patterns), tense and aspect markers, pronouns, passives (by-passives, agentless passives), dependent clauses (relative clauses, complement clauses), prepositional phrases, lexical classes (hedges, emphatics, discourse particles), reduced forms (contractions, that-deletions), etc. (Biber 1994). Biber (1994:35) observed that an analysis of register is necessarily quantitative, since register distinctions “are based on differences in the relative distribution of linguistic features.”

One typical type of register-based variation is formality of situations. Irvine (1979) explored what has been meant by formality in the recent literature. She noticed that two principal senses of the term concern properties of social setting in which a code is used (i.e., situational characteristics) and properties of the communicative code itself (i.e., linguistic forms). Taking these two principal senses together, she defined a formal situation as a type of situations which requires “a display of seriousness,
politeness, and respect,” (774) and/or it is usually marked by special structuring, notably redundancy or some greater elaboration of linguistic rules.\textsuperscript{28}

There are various approaches to the study of register variation involving the formality-informality distinction. The early approach was proposed by Labov (1972), who used the term “style” or “stylistic variation” when talking about shifts in usage levels from the most casual to the highly formal speech situations. Underlying his approach is the belief that “styles can be arranged along a single dimension, measured by the amount of attention paid to speech” (208). Labov developed a sociolinguistic interview designed to yield a range types of speech on a unidimensional continuum of formality level. At the extremes of the continuum are: (1) casual style, or the style nearest to the vernacular, which is said to be the product of the smallest amount of conscious self-monitoring, and (2) formal style, or careful style, which requires much conscious attention to language. Thus, according to his account, when speech is unselfconscious, for example, when an interviewee talks spontaneously about topics like childhood customs or dangerous situations, it will be more casual. In contrast, when speech is self-conscious, for example, when reading a list of words that forces the speaker to focus attention on her r-pronunciations, it will be more formal, closer to a more standard variety.

Bell’s (1984) audience design model is critical of the idea that stylistic variation is a function of attention to speech, but resembles it in treating style primarily as responsive to situation (Milroy and Gordon 2003). The model has its root in Speech

\textsuperscript{28} The term “formality,” as pointed out by Irvine, is sometimes used to refer to a mode of description, in which “the analyst’s statement of the rules governing discourse is maximally explicit” (775). However, since this is a technical sense, Irvine distinguished it from the other two senses that concern the behavior and conceptual systems of the people described.
Accommodation Theory (Giles and Powesland 1975), a social psychological theory which holds that speakers tend to adjust their speech toward that of their addressee. The fundamental point is that “at all levels of language variability, people are responding primarily to other people. Speakers are designing their style for their audience” (Bell 1984:197). Style is thus seen as a response to persons, rather than a consequence of the speaker’s attention to speech. Bell further argued that because particular settings and topics are associated with specific types of addressee, they are subservient to the addressee variable. For example, a setting like a workplace is usually associated with a more socially distant kind of addressee than a domestic setting, and the “danger of death” question that Labov used to elicit casual speech is a topic often associated with an intimate addressee.

In support of his claim, Bell cited comparative levels of intervocalic [t] voicing in words such as better, later, which is associated with casual speech style, in the speech of four New Zealand newscasters broadcasting from two stations. The four newscasters showed higher percentage of intervocalic [t] voicing when broadcasting from the station whose target audience was younger or lower-status speakers than when broadcasting from the station which was popular with a somewhat elite older audience. Thus, in terms of formality, Bell’s case study illustrated that the speaker’s choice of formal vs. casual styles depends primarily on the listener, and in many cases this choice corresponds with the language pattern of the listener.

Unlike the audience design model, stylistic variation under speaker design approaches is viewed not as a reactive phenomenon but “as a resource in the active creation, presentation, and recreation of speaker identity” (Schilling-Estes 2002:388).
Speaker design models are rooted in social constructionist approaches; style is not conceived to be merely reflections of static identity, but rather it is a set of interrelated social practices that identify individuals as members of particular social groups and construct their groups as distinctive. Accordingly, under this account, speakers make the choice between formal and informal speech styles in order to construct and define their social identity.

Eckert (1989a), for example, described the contrast between two high school groups of students in Detroit, Jocks and Burnouts. Differences between the groups occur not just in career expectations and involvement in extra-curricular school activities, but also in behavior, dress, and speech. In terms of speech, Burnouts adopt a more local style while Jocks distinguish themselves by using a more standard and formal style. Eckert (1988) attributed these differences to students' ties with the city. Burnouts see their future social roles as tied to the region while Jocks aim to find success out of the region. Such differences in attitude towards a local identity result in symbolic differences in the groups' speech styles.

In their account of variation in speech styles, or what they refer to as “register variation,” Finegan and Biber (1994) focused instead on linguistic features of economy and elaboration, which were claimed to represent degrees of implicit and explicit communication respectively. Underlying their theory was an assumption that due to differing communicative demands, different registers have a functional preference for the clarity mandate or for the ease mandate. They proposed three situational parameters: “(1) opportunity for careful production, (2) purpose of communication, and (3) degree of shared context” (321). These parameters interact in important ways with
the production mandates for ease and for clarity, resulting in differences in the use of linguistic features representing economy and elaboration, which finally serve to distinguish between formal and informal speech styles. That is, formal situations require more explicitness and thus are characterized by linguistic features representing elaboration; in contrast, casual situations tolerate greater implicitness and thus are characterized by linguistic features representing economy.

As an illustration, Finegan and Biber examined a set of seven linguistic features in four written registers and three spoken ones taken from corpora. Four of these features were compressed forms and they represented economy; the other three functioned to create a more explicit or elaborated form. The results of the quantitative analysis showed that the three situational parameters were closely intertwined, which resulted in different distributions of the linguistic features across the registers. Table 39 contains the frequency counts, which represent the number of occurrences of a feature per one thousand words of text, averaged over the texts in each register.

Of all the seven registers, academic prose is the most formal type and most favors the clarity mandate; it provides extensive opportunity for careful production, has an extreme informational purpose, and is characterized by little shared context. At the other extreme, conversation is the least formal register and thus most favors the ease mandate; it provides little opportunity for careful production, is most involved in its purpose, and is characterized by the highest degree of shared context. The frequencies of particular features reflect these extremes. Academic prose consistently shows the fewest economy forms and the most frequent use of forms representing elaboration and explicitness. Conversation, on the contrary, shows the most frequent economy forms.
and the least frequent elaboration forms. The situations surrounding the use of the other registers fall between these extremes, and the frequencies of particular features reflect their relative associations with the mandates for ease and for clarity and with the formality levels.

**Table 39. Distribution of Linguistic Features in Different Registers (Finegan and Biber 1994:325).**

<table>
<thead>
<tr>
<th></th>
<th>Constructions</th>
<th><em>That</em>-deletions</th>
<th>Pro-verb <em>do</em></th>
<th>Pronoun <em>it</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Written</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal letters</td>
<td>22.2</td>
<td>12.8</td>
<td>4.3</td>
<td>11.0</td>
</tr>
<tr>
<td>General fiction</td>
<td>11.2</td>
<td>3.0</td>
<td>3.3</td>
<td>11.5</td>
</tr>
<tr>
<td>Press reportage</td>
<td>1.8</td>
<td>2.0</td>
<td>1.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Academic prose</td>
<td>0.1</td>
<td>0.4</td>
<td>0.7</td>
<td>5.9</td>
</tr>
<tr>
<td><strong>Spoken</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversations</td>
<td>46.2</td>
<td>9.6</td>
<td>9.0</td>
<td>20.0</td>
</tr>
<tr>
<td>Interviews</td>
<td>25.4</td>
<td>4.3</td>
<td>4.6</td>
<td>11.9</td>
</tr>
<tr>
<td>Public speeches</td>
<td>13.3</td>
<td>1.9</td>
<td>2.4</td>
<td>8.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Attributive adjectives</th>
<th>Prepositional phrases</th>
<th>Type/token ratio*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Written</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personal letters</td>
<td>44.2</td>
<td>72.0</td>
<td>52.5</td>
</tr>
<tr>
<td>General fiction</td>
<td>50.7</td>
<td>92.8</td>
<td>52.7</td>
</tr>
<tr>
<td>Press reportage</td>
<td>64.5</td>
<td>116.6</td>
<td>55.3</td>
</tr>
<tr>
<td>Academic prose</td>
<td>76.9</td>
<td>139.5</td>
<td>50.6</td>
</tr>
<tr>
<td><strong>Spoken</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversations</td>
<td>40.8</td>
<td>85.0</td>
<td>46.1</td>
</tr>
<tr>
<td>Interviews</td>
<td>55.3</td>
<td>108.0</td>
<td>48.4</td>
</tr>
<tr>
<td>Public speeches</td>
<td>48.9</td>
<td>112.6</td>
<td>49.0</td>
</tr>
</tbody>
</table>

*As a measure of lexical diversity, type/token ratio measures the number of distinct lexical items used in a text and thus indexes lexical explicitness.

In sum, register, or variation according to use, is one important type of intra-speaker variation, i.e., variation within the speech of an individual. A major assumption in register variation is that speakers participating in a recurrent communicative situation tend over time to develop particular linguistic forms as markers of that situation. One type of register-based variation is formality of situations.
There are several approaches to the study of register involving the parameter of formality. Basically, these approaches differ in the way they account for the speaker's motivation to adopt a formal style rather than an informal style, and vice versa. While the early theory developed by Labov attributes the choice of formal vs. informal styles to attention paid to speech, more recent theories rely on other factors as their explanations, which include a response to the addressee, a resource to construct the speaker's identity, and communicative demands to express explicitness. In the next section, we will look at register variation in syntactic constructions, and see which of these theories, typically concerned with lower levels of linguistic units (e.g., allophones, words, phrases), is best extended to account for the case of dative and ditransitive constructions in Thai.

5.1.2 Corpus and web-board study of register in Thai

This section deals with the question of how register influences the dative and ditransitive constructions in Thai. The purpose of the section is to distinguish these constructions by formality of situations. In English, the two constructions are different in form (constituent ordering, i.e., patient-recipient vs. recipient-patient) and meaning (path vs. possession). However, as already discussed in the previous chapters, the dative and ditransitive constructions in Thai are very similar in these respects: they have the same constituent ordering (patient-recipient), and both are strongly associated with the meaning of possession. Given these similarities in the linguistic factors, or often referred to as "internal" factors, it is interesting to see whether and how alternating constructions like Thai dative and ditransitive constructions are
differentiated by "external" constraints, i.e., constraints not involving the language system but depending on uses in social conditions.

Toward this end, the same set of data drawn from the on-line corpus and Pantip, which had been investigated in terms of heaviness and information structure, was analyzed, but the study in this section focused instead on the type of register associated with each of the constructions.

These sources of data provide a contrast between formal and informal situations in two major ways. First, based on Irvine's (1979) definition that a formal situation requires a display of seriousness, politeness, and respect, the corpus data, which were extracted from news articles on serious topics such as politics, economics, international relations, and religion, were categorized as formal. In contrast, those from Pantip, which were drawn from opinion boards of light topics, including relationships, fashion, hobbies, travel, and health, were classified as informal.

Second, the three situational parameters, proposed by Finegan and Biber (1994), indicate that the corpus data require greater elaboration and explicitness of form, the characteristics which are associated with formal situations; whereas the Pantip data tolerate greater ease and economy, which are associated with informal situations. In terms of the opportunity for careful production, news articles are usually planned and edited while on-line opinions tend to be interactive and spontaneous. As to the purpose of communication, news articles are primarily informational whereas on-line opinions are more affective and involved, i.e., participants are concerned with both informational messages and interpersonal relationships. In fact, it is revealed from their conversation that quite a few participants of Pantip have known each other, not only through a
relatively long period of chatting on-line but also through some extra activities (e.g.,
going on a trip). With respect to the degree of shared context, there is no direct
interaction between the news reporter and the audience. On the other hand, although a
majority of the on-line interlocutors do not know each other, they have greater shared
context since they exchange their opinions on the topics in which they have common
interest.

Such differences in the three situational parameters result in differences in the
use of particular linguistic features between the two sources of data (Finegan and Biber
1994). The corpus data are marked by features representing elaboration and
explicitness while the data from Pantip are characterized by those representing ease and
economy. For example, the corpus data contain many modifying clauses (e.g., relative
clauses, adverbial clauses), modifying phrases (e.g., prepositional phrases, adverbial
phrases), modifying words (e.g., adjectives, adverbs, appositives), etc. On the other
hand, the data drawn from Pantip are full of short simple clauses, abbreviations,
shortened forms, NP omission, and pronunciation spelling, etc.

The following extract illustrates elaboration and explicitness typically found in
the data obtained from the corpus. Linguistic features representing these
characteristics, most of which are modifying expressions, are in bold characters.

<table>
<thead>
<tr>
<th>No. of Example</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>31</td>
<td>Corpus</td>
</tr>
</tbody>
</table>

29 Pronunciation spelling refers to spelling which depends on how a word is pronounced, rather than on
the standard orthographic system. Usually, it is easier and shorter than standard spelling due to the one-
to-one correspondence between sounds and letters.
Boris Yeltsin, President of Russia, plans to visit Japan officially again, after a sudden cancellation of the plan last year. Kiichi Miyasawa, Prime Minister of Japan, said after being informed of the news that President Yeltsin may visit Japan before a summit conference of the leading countries in industry, or G-7, that he is happy to welcome the Russian leader... Kabun Muto, Minister of the Foreign Ministry, rejected to give his opinion about the news that Japan is planning to give financial aid worth 2,000 million dollars to Russia under the bilateral aid project.

In contrast, the next extract illustrates economy and ease usually found in the Pantip data. This extract consists of only simple sentences. The third-person pronoun khaw ‘he’ is omitted in the second sentence. When it is not omitted (i.e., in the third and fifth sentences), it appears in informal spelling, reflecting its pronunciation.

<table>
<thead>
<tr>
<th>No. of Example</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>480</td>
<td>Pantip</td>
</tr>
</tbody>
</table>

(1) โอ คุณวิลลี่คิดถึงมารดาหรือยังคะ (2) ผมกระปรี้พิการจ่าฝูงเพื่อนน้องมา (3) ท่านมาเยี่ยมพี่กับลูกน้องมา คุณเสียชีวิตไปแล้วนั่น (4) พออย่าอย่าเมื่อยล้า ให้คุณวิลลี่ไปกินข้าวพาด (5) แล้วไปคุยกันสักทีให้ดีค่ะ

Oh Willy looked like Santa Claus. (He) carried a big bag to give out dogs a lot of stuffs. When he hugged them, it was touching. Sister Nora, don’t forget to tell Willy to open a bank account. I’ll send money to him.

Thus, due to the differences in topics of conversation (serious vs. light) and the frequency of linguistic features representing explicitness and economy, the corpus data were considered as formal whereas the Pantip data were treated as informal in this study.

Results of the corpus and web-board study

To examine the effect of register, I looked at the proportion of dative and ditransitive sentences under two different conditions of registers (formal vs. informal contexts), and used a Fisher’s exact test to analyze the relationship between registers and the constructions. The hypothesis underlying this study is that there is a systematic association between registers and the dative and ditransitive constructions. The total
number of dative and ditransitive sentences in formal and informal contexts is shown in Table 40.

<table>
<thead>
<tr>
<th></th>
<th>Formal</th>
<th>Informal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dative</td>
<td>199</td>
<td>45</td>
</tr>
<tr>
<td>Ditransitive</td>
<td>85</td>
<td>162</td>
</tr>
<tr>
<td>Total</td>
<td>284</td>
<td>207</td>
</tr>
</tbody>
</table>

Table 41 and Figure 14 present the percentages of dative and ditransitive sentences in each context.

A Fisher's exact test was used to examine whether there was a correlation between registers and either of the constructions. The result of the test showed that there was a highly significant effect of register on the distribution of dative and ditransitive sentences, revealing that datives were more likely to be used in formal contexts whereas ditransitives were more likely to be used in informal contexts ($p <$
This supported the research hypothesis which argued for the systematic relation between registers and the two constructions.

With respect to variation among verbs, all verbs, with only one exception (i.e., the verb မပ ‘present’), displayed the consistent pattern of register distribution; they were more frequent in the dative form when appearing in formal contexts, and they were more frequent in the ditransitive form when appearing in informal contexts. This suggests that formality and informality are characteristics associated with the dative and ditransitive constructions respectively, not with a particular verb. Table 42 shows the number and percentage of dative and ditransitive sentences in formal and informal contexts for each individual verb.

<table>
<thead>
<tr>
<th>Verb</th>
<th>Thai</th>
<th>English equivalent</th>
<th>Formal context</th>
<th>Informal context</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dative</td>
<td>Ditransitive</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dative</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>1. မဟ ‘give’</td>
<td>115 (62.50%)</td>
<td>69 (37.50%)</td>
<td>39 (23.08%)</td>
<td>130 (76.92%)</td>
</tr>
<tr>
<td>2. စီး ‘feed’</td>
<td>16 (64%)</td>
<td>9 (36%)</td>
<td>0 (0%)</td>
<td>14 (100%)</td>
</tr>
<tr>
<td>3. ဝါဝ ‘donate’</td>
<td>11 (100%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>2 (100%)</td>
</tr>
<tr>
<td>4. ဝါ ‘give out’</td>
<td>16 (84.21%)</td>
<td>3 (15.79%)</td>
<td>1 (8.33%)</td>
<td>11 (91.67%)</td>
</tr>
<tr>
<td>5. ဝါ ‘pay’</td>
<td>14 (87.50%)</td>
<td>2 (12.50%)</td>
<td>2 (33.33%)</td>
<td>4 (66.67%)</td>
</tr>
<tr>
<td>6. ဝါ မပ ‘present’</td>
<td>27 (93.10%)</td>
<td>2 (6.90%)</td>
<td>3 (75%)</td>
<td>1 (25%)</td>
</tr>
</tbody>
</table>

5.1.3 Discussion

The corpus and web-board study indicated that there is a highly significant correlation between registers and the dative and ditransitive constructions in Thai. When the situation is formal, the dative is more likely to occur. In contrast, when the situation is informal, the ditransitive is more likely to occur. Therefore, the two argument structure constructions in Thai are differentiated by the social property of
register. The dative construction is more strongly associated with formal contexts whereas the ditransitive construction is more strongly associated with informal contexts.

An important question that follows is what motivates such correlations. That is, why is it the dative, rather than the ditransitive, that is associated with formality, and vice versa? In terms of meaning, the experiment on description selection in Chapter 3 indicated that there is no path vs. possession difference between the dative and ditransitive constructions in Thai as in English. The two constructions are strongly associated with the concept of possessive transfer. Since the dative and ditransitive constructions are associated with the same meaning, this suggests that the correlation between each construction and a particular type of register is not motivated by semantics.

In terms of form, the dative is distinct from the ditransitive in that it is marked by the preposition แกะ. The results of the heaviness study in Chapter 4 suggested that this preposition functions to increase explicitness; it makes the form more transparent, by differentiating one object from the other and thus facilitating the comprehension process especially when one or both objects are heavy. Thus, based on Finegan and Biber's (1994) approach to register variation, the dative construction is a linguistic feature representing explicitness whereas the ditransitive construction is a linguistic feature representing economy. And since explicitness is usually associated with formal situations (Irvine 1979, Finegan and Biber 1994), this explains why the dative tends to occur more frequently in formal contexts. On the other hand, since economy is a
typical characteristic of informal situations (Irvine 1979, Finegan and Biber 1994), this accounts for the predominance of the ditransitive in informal contexts.

Therefore, the results of the register study on the Thai dative and ditransitive constructions support Finegan and Biber's (1994) theory of register variation. Speech situations with the production mandate for clarity such as formal situations (e.g., news articles) are characterized by the frequent use of linguistic features representing explicitness. In contrast, speech situations with the production mandate for ease such as informal situations (e.g., on-line opinions) are marked by the frequent use of linguistic features representing economy. Like modifying clauses, adverbial phrases, or appositives, etc., the dative construction in Thai is a feature of elaboration and explicitness, hence speakers prefer to use it in formal contexts. Conversely, the ditransitive construction represents a feature of ease and economy, the same as do abbreviations and NP omission, etc., hence it is preferred in informal contexts. In this sense, the choice between datives and ditransitives is partly determined by communicative demands to express explicitness. Speakers tend to use the more transparent construction, i.e., the dative construction, in formal contexts in which elaboration and explicitness are required; on the other hand, they are likely to omit the preposition and use the ditransitive construction in informal contexts in which greater ease and economy are allowed.

Moreover, the difference between the two constructions in registers may also be caused by the length of arguments. Consistent with the earlier analysis, the effect of length supports Finegan and Biber's theory. That is, due to communicative demands to express explicitness, complex object arguments should occur more frequently in formal
contexts while simple object arguments should be found more often in informal contexts. As a result, the dative, which is associated with heavy objects, is likely to be used when the context is formal. On the other hand, the ditransitive, which is associated with short objects, is likely to be chosen in informal contexts. The correlation between NP weight and register will be verified in Chapter 6.

5.2 Sex and age differences of Thai dative and ditransitive constructions

5.2.1 Studies of sex and age in language variation

This section deals with the question of how sex and age of speakers influence variation in language. The purpose of the section is to provide background on the previous studies of sex and age differences as conditioning factors that determine the variation, before investigating specifically in the next section how these two social properties have an effect on the dative and ditransitive constructions in Thai.

Sex is one of the most widely used social demographic categories, and categorizing individuals into “males” and “females” has long been standard practice in the social sciences (Cheshire 2002). The term “sex” has often been used to refer to the physiological distinction between males and females; a related term “gender” is defined as “the social and cultural elaboration of the sex difference” (Cheshire 2002:423), or more precisely “the social construction of sex” (Eckert 1989b:246).

The two terms have been used in the variationist literature. Usually, “sex” is preferred in research that relies on a simplistic classification of speakers into males and females, while “gender” is often used in research that takes at least some account of relevant social and cultural factors. In the present study, I decided to use the term “sex” since the analysis focuses more on how males and females are different in their
perception of the dative and ditransitive constructions, rather than on what social and
cultural aspects can give an account of such differences. However, it is necessary to
bear in mind that the dichotomy between the two concepts cannot be always
maintained, since biological distinction is part of cultural history. Moreover, studies
designed with a gross categorization of individuals by their sex often involve the
interpretation of the results in terms of the lifestyles of men and women, or the
interaction of sex with other social factors (Cheshire 2002).

There are very few reports in the variationist literature of the exclusive use of
one linguistic variant by men and another by women (Ochs 1992, Cheshire 2002).
Rather, it is far more frequent to find “sex-preferential variation” (Cheshire 2002:425).
Ochs (1992) described the relation of language to sex difference as “non-exclusive
relation,” by which she meant that often particular variable features of language are
used by/with/for both sexes, but they may be employed more by one than the other sex.
For example, Labov (1966) found out that women in New York City produced the
postvocalic-\(r\) more frequently than men. Women were also reported to overuse the
postvocalic-\(r\) to the extent that they sometimes insert an /\(r\)/ in a word that has no ‘\(r\)’ in
its written form, e.g., \textit{idear} instead of \textit{idea}.

There is a common tendency regarding the relation between language and sex:
male speakers often use socially disfavored variants while women tend to avoid these
in favor of socially more favored variants. Labov (1990:210) summarized this
tendency in the principle below:

\begin{quote}
Principle I: For stable sociolinguistic variables, men use a higher frequency of nonstandard
forms than women.
\end{quote}
Usually, a variant which is considered “standard” is the one that is used with an increased frequency in more formal speech styles (Cheshire 2002). The finding that women tend to use a higher proportion of the standard variants than men has been of very wide general interest, and it is often presented as a fundamental tenet of sociolinguistics. Fasold (1990) referred to this tendency as “the sociolinguistic gender pattern,” and Chambers (1995) as “a sociolinguistic verity.”

Labov’s Principle I has been illustrated in many variationist studies. A wide range of explanations have been offered for this distributional pattern; most of them have directed at explaining the linguistic behavior of women. For example, Trudgill (1974) examined the pronunciation of the phonological variable (η), which occurs in the suffix --ing, in the speech of English speakers in Norwich. Apart from typical patterns of class and style variation, Trudgill also found a difference by sex: generally males used a higher percentage of [n], the nonstandard variant, than females. Table 43 shows the [n] percentage in different categories of class, style, and sex. The scores range from 100, which represents consistent use of [n], to 000, which represents consistent use of [η]. The results show that in 17 out of 20 conditions, male scores were greater than or equal to corresponding female scores. This led Trudgill to conclude that the [n] variant in Norwich is typical of not only working-class speakers but also male speakers.
Trudgill's explanation of the distributional pattern between the two sexes has been very influential. He argued that women have to acquire social status vicariously while men can acquire it directly through their occupation and earning power. As a result, women are more likely to secure and signal their social status linguistically, i.e., through their use of standard, overtly prestigious variants. The higher proportion of nonstandard variants used by men can then be explained as an orientation to the covert prestige of working-class forms, which symbolize the roughness and toughness, supposedly characteristics of both working-class life and masculinity.

Nichols (1983) gave a different account of women's higher tendency to use standard linguistic features. She found that differences in linguistic behavior between men and women are due to different forms of women's and men's participation in the marketplace. In the black community she studied, women holding teaching positions used a higher proportion of standard variants because teaching school required greater
adherence to standard language norms than jobs like construction work which were typically occupied by men.

Other explanations for women's higher tendency to use standard variants include Deuchar (1988), whose interpretation was based on politeness theory, in which women's higher use of standard forms can be seen as a strategy for maintaining face in interactions where women are powerless. Gordon (1997), on the other hand, presented a symbolic association between local accents, nonstandard forms, and promiscuity, and argued that middle-class women may avoid using nonstandard features not as a self-promotion, but rather as a way of avoiding association with the lower-class stereotype.

However, Eckert (1989b) noticed that the picture is not as simple as this generalization suggests. There is every reason to assume that sex differences may vary from one variable to another. Moreover, sex may not have the same effect on language use everywhere in the population. For example, women at the lower end of the socioeconomic hierarchy may differ from those at the upper end in their adherence to standard linguistic forms. Therefore, Eckert suggested that it is a mistake to make a strong claim about any kind of constant constraint associated with sex or gender. Rather, as summarized by Cheshire (2002:428), what we can say is that "there are likely to be gross differences between the linguistic behavior of men in a community on the one hand, and women on the other. Given the social and cultural significance of the male-female dichotomy, these differences are likely to be socially evaluated and to have an important role in the relation between social and stylistic variation."

Like sex, age is a biological category that serves as a fundamental basis for the differentiation of roles, norms, and expectations in all societies (Eckert 1989b). One of
the earlier and influential studies which included age as an important variable is Labov’s (1963) Martha’s Vineyard study. One phonological feature he examined was (at), which could be pronounced as (1) [at], the more standard pronunciation common in the mainland area, and (2) [aɪ], a centralized variant originally very usual among local people on the island. Labov undertook sixty-nine tape-recorded interviews, and he divided his interviewees into age groups. Table 44 shows the percentages of the centralized pronunciation of this diphthong per each age group.

<table>
<thead>
<tr>
<th>Age in years</th>
<th>Centralization of (at)</th>
</tr>
</thead>
<tbody>
<tr>
<td>75+</td>
<td>25</td>
</tr>
<tr>
<td>61-75</td>
<td>35</td>
</tr>
<tr>
<td>46-60</td>
<td>62</td>
</tr>
<tr>
<td>31-45</td>
<td>81</td>
</tr>
<tr>
<td>14-30</td>
<td>37</td>
</tr>
</tbody>
</table>

The results indicated that centralization varied with the age levels of the speakers. The percentage of the centralization increased in successive age levels, except for the last row, the 14-30 age group. The questions Labov tried to answer were why the adult groups, i.e., the 31-45 and 46-60 age groups, had relatively high percentage for the centralized variant and why the older and younger groups, i.e., the 75+, 61-75, and 14-30 age groups, showed less use of the centralized variant.

In answering these questions, Labov cited social relationships between the relatively poor inhabitants of the island and the rich summer tourists. A high degree of centralization of (at) was closely linked with strong resistance to the incursions of the summer people, which had to be tolerated for economic reasons. Using pronunciation
like centralized vowels was "a subconscious affirmation of belonging to the island and being one of its rightful owners" (Labov 1963:304). The reason why the two adult groups showed the highest level of the centralization was because they were the groups experiencing the highest economic pressure. On the other hand, the older and younger groups did not feel the full stress since they were not the breadwinner of the family. Moreover, compared to the adult groups who had grown up in a declining economy and made a choice to stay and work on the island, the younger group, which included many high school pupils, had not yet made a decision whether to leave or remain on the island. This indecision was unconsciously reflected in their pronunciation of the variable (ar).

Similarly, Chambers and Trudgill’s (1980) analysis of variation in Norwich English showed that differences in language usage often vary with age groups of speakers. One of the variables they studied was the suffix –*ing*, which was reported to vary between a velar [ŋ], the standard variant, and an alveolar [n], the nonstandard variant. They divided speakers into seven age groups: 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, and 70+. The results showed that the 40-49 age group had very low usage of the nonstandard variant whereas the youngest and oldest groups had the strongest tendency to use the nonstandard variant especially in the casual speech style. These results were consistent with their study of three linguistic variables in English of black speakers carried out in Washington, D.C. (1980). In this study, when the 47 informants were divided into three age groups, the same pattern of variation in which adults were least likely to use nonstandard variants became clear.
Chambers and Trudgill (92) explained the distributional differences among age groups in terms of adherence to the standard vs. nonstandard variants in the community they studied as follows:

We can probably account for this by supposing that for younger speakers the most important social pressures come from the peer group, and that linguistically they are more strongly influenced by their friends than by anybody else. Influence from the standard language is relatively weak. Then, as speakers get older and begin working, they move into wider and less cohesive social networks, and are more influenced by mainstream societal values and, perhaps, by the need to impress, succeed, and make social and economic progress. They are also, consequently, more influenced linguistically by the standard language. For older, retired people, on the other hand, social pressures are again less, success has already been achieved (or not, as the case may be), and social networks may again be narrower.

According to their explanation, middle-aged speakers are more likely to use standard variants than teenage speakers and older speakers because they are more influenced by societal values and are more pressured to make social and economic progress.

In sum, sex and age have been used as social demographic categories in many variationist studies. Typically both variables have a non-exclusive relation to language; particular language features are not exclusively used by one sex or age group, but rather they tend to be employed more frequently by one particular sex or age group. In terms of sex, one tendency found in several studies involves women's stronger preference, compared to men, to use standard variants. This sociolinguistic gender pattern has been explained in various ways; most of them focus on women's linguistic behavior, such as
women's attempt to secure and signal their social status through language, women's access to the marketplace, and women's strategies in maintaining face and avoiding being associated with negative social values. With respect to age, several studies indicated that uses of language vary across age groups, and that this variation is inconsistent from one context to another. For example, in Martha's Vineyard study, adults tended to use more of the nonstandard variant than other age groups as a way to show their strong loyalty to the local identity. In Chambers and Trudgill (1980), the opposite pattern was found. Adults experienced the highest social and economic pressures, thus they were more influenced by societal values and used more of the standard language. In the next section, we will see whether the sociolinguistic gender pattern commonly found in previous studies has an effect on the use of the dative and ditransitive structures in Thai. Also, we will see whether the use of the two constructions varies across speakers of different age groups.

5.2.2 Experimental studies of sex and age: Grammaticality judgments and description selection

This section deals with the question of how dative and ditransitive constructions in Thai are influenced by sex and age of speakers. The purpose of the section is to distinguish the two constructions by these social factors. The results of the register study showed that the constructions in Thai differ in the type of register in which they tend to occur. The former is more frequently found in formal contexts whereas the latter is more often used in informal contexts. In this section, we will see whether other external constraints, i.e., sex and age of speakers, further differentiate between this pair of alternating constructions which are very similar in form and meaning.
The specific question that I tried to answer was: is there any difference among speakers of different sex and age groups in their perception of the dative and ditransitive constructions in Thai? Toward this end, data were drawn from two sources: one was the experiment on grammaticality judgments and the other was the experiment on description selection. Data in the first experiment served to show differences in “grammatical perceptions” of the two constructions, i.e., whether the sex and age factors had any effect on the grammaticality ratings of dative and ditransitive sentences. Data from the second experiment aimed to show differences in “semantic perceptions” of the constructions, i.e., whether the speakers differed in the way they perceived the meaning of each construction.

For the experiment on grammaticality judgments, the subjects were divided into four groups according to their sex and age: teenage females, adult females, teenage males, and adult males. The subjects in the teenager groups were undergraduate students, aged 18 to 21; those in the adult groups were graduate students, aged 30 or older. There were 11 subjects in each of the two female groups, and there were 10 subjects in each of the two male groups. Each subject saw one of the two lists, which contained the same 90 test sentences but they were presented in different orders. About half of the subjects in each group saw List 1 while the other half saw List 2. They were to rate each sentence in the list on a 1-5 scale (see more details of this experiment in Chapter 3, Section 3.1.2).

In order to avoid any influence of the first experiment, the subjects for the experiment on description selection were a different group of subjects who did not participate in the first experiment. Similarly, these subjects were divided into four
groups according to their sex and age: teenage females, adult females, teenage males, and adult males. The subjects in the teenager groups were undergraduate students, aged 18 to 21; those in the adult groups were graduate students, aged 30 or older. There were 12 subjects in the teenage male group, and 10 subjects in each of the other groups. Each subject saw one of the four lists, which contained 16 test sentences and a number of filler sentences. Each test sentence was followed by a pair of description statements; one was consistent with the meaning of path and the other with the meaning of possession. The test sentences appeared in four different versions across the lists according to two factors: sentence structure (dative vs. ditransitive) and the order of description statements (path-possession vs. possession-path). Each list was distributed to about 2-3 subjects in each group. The subjects were to choose the statement that best described each of the test sentences (see more details of this experiment in Chapter 3, Section 3.2.2).

The results of the experiments, which involve sex and age differences, are summarized as follows:

Results of the studies on sex-age differences

Grammaticality judgments: Differences in grammatical perceptions

The mean ratings of dative and ditransitive sentences for different sex-age categories of subjects were measured. In terms of sex differences, the mean rating of men for dative sentences was 3.51 and for ditransitive sentences was 2.18; the mean rating of women for dative sentences was 3.21 and for ditransitive sentences was 1.76. With respect to age differences, the mean rating of adults for dative sentences was 3.39 and for ditransitive sentences was 2.17; the mean rating of teenagers for dative
sentences was 3.31 and for ditransitive sentences was 1.74. Thus, on average, men’s ratings of each of the two constructions were higher than women’s, and adults’ ratings of each of the constructions were higher than teenagers’. The mean ratings of dative and ditransitive constructions for all sex and age categories and also their standard deviations are summarized in Table 46.

### Table 46. Means and Standard Deviations of Datives and Ditransitives in All Sex-Age Categories of Subjects.

<table>
<thead>
<tr>
<th>Age</th>
<th>Sex</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>No. of subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean-rating dative</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adults</td>
<td>F</td>
<td>3.04</td>
<td>.73</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>3.78</td>
<td>.46</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.39</td>
<td>.71</td>
<td>21</td>
</tr>
<tr>
<td>Teenagers</td>
<td>F</td>
<td>3.38</td>
<td>.85</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>3.23</td>
<td>.77</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.31</td>
<td>.79</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>F</td>
<td>3.21</td>
<td>.79</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>3.51</td>
<td>.68</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.35</td>
<td>.75</td>
<td>42</td>
</tr>
<tr>
<td>Mean-rating ditransitive</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adults</td>
<td>F</td>
<td>1.90</td>
<td>.67</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>2.47</td>
<td>.51</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>2.17</td>
<td>.65</td>
<td>21</td>
</tr>
<tr>
<td>Teenagers</td>
<td>F</td>
<td>1.61</td>
<td>.29</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>1.88</td>
<td>.51</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.74</td>
<td>.42</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td>F</td>
<td>1.76</td>
<td>.52</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>2.18</td>
<td>.58</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>1.96</td>
<td>.58</td>
<td>42</td>
</tr>
</tbody>
</table>

A repeated-measures ANOVA was used to examine the effects of speakers’ sex and age on the ratings of dative and ditransitive sentences. The results revealed that the main effect of sex was significant; men’s ratings of dative and ditransitive sentences were higher than women’s ratings, $F(1, 38) = 5.56, p = .024$. However, although on average adults’ ratings of dative and ditransitive sentences were higher than teenagers’ ratings, the test showed that the main effect of age was not statistically significant, $F(1,
38) = 3.27, \( p = .079 \). The two-way interaction of sex and age was almost significant. Of the four sex-age categories of subjects, adult males' ratings of both dative and ditransitive constructions were highest, \( F(1, 38) = 3.85, p = .057 \).

In which condition might the social factors of sex and age have stronger effects? The results in Chapter 3 indicated that in contrast to the dative, the average rating of the ditransitive was very low, and only two semantic subclasses of verbs (i.e., verbs of inherent acts of giving and verbs of communicated message) got high ratings when used in this construction. Due to the very limitation in distribution, there may be noticeable differences among speakers in their judgments of verbs or verb subclasses with high ditransitive mean-ratings. That is, some speakers may be very strict in grammaticality judgments and allow only verbs belonging to the two conventional subclasses to occur in the ditransitive form; whereas other speakers may be more flexible, and tend to use and accept this construction with the two conventional subclasses and some other verbs or subclasses. Only in the case where there are clear differences in judgments could we expect to find the strong effects of social factors like sex and age on dative-ditransitive ratings.

Thus, in an attempt to obtain the stronger effects of sex and age, I measured the ditransitive mean-rating of all test verbs and selected 11 verbs with the highest rating. Of these 11 verbs, five are from the conventional subclasses of inherent acts of giving and communicated message; the others are from various subclasses, which are related indirectly to the sense of possessive transfer.
TABLE 47. Verbs with High Ditransitive Mean-Ratings.*

<table>
<thead>
<tr>
<th>Thai</th>
<th>Verb English equivalent</th>
<th>Semantic subclass</th>
<th>Ditransitive mean-rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>สอน</td>
<td>teach</td>
<td>6</td>
<td>4.38</td>
</tr>
<tr>
<td>ให้</td>
<td>give</td>
<td>1</td>
<td>3.93</td>
</tr>
<tr>
<td>คืน</td>
<td>return</td>
<td>1</td>
<td>3.90</td>
</tr>
<tr>
<td>รายงาน</td>
<td>report</td>
<td>6</td>
<td>3.76</td>
</tr>
<tr>
<td>ให้</td>
<td>tell</td>
<td>6</td>
<td>2.98</td>
</tr>
<tr>
<td>ยืนยัน</td>
<td>assert</td>
<td>12</td>
<td>2.48</td>
</tr>
<tr>
<td>หูสั่น</td>
<td>whisper</td>
<td>11</td>
<td>2.48</td>
</tr>
<tr>
<td>ยิง</td>
<td>fax</td>
<td>7</td>
<td>2.31</td>
</tr>
<tr>
<td>ยืนยัน</td>
<td>confirm</td>
<td>12</td>
<td>2.29</td>
</tr>
<tr>
<td>มอบหมาย</td>
<td>assign</td>
<td>5</td>
<td>2.24</td>
</tr>
<tr>
<td>ส่ง</td>
<td>email</td>
<td>7</td>
<td>2.14</td>
</tr>
</tbody>
</table>

*See the references of these subclasses in Chapter 3, Section 3.1.2.

The mean ratings of dative and ditransitive sentences containing these 11 verbs under different conditions of sex (males and females) and age (teenagers and adults) were measured. In terms of sex differences, the mean rating of men for dative sentences was 4.01 and for ditransitive sentences was 3.28; the mean rating of women for dative sentences was 3.83 and for ditransitive sentences was 2.74. With respect to age differences, the mean rating of adults for dative sentences was 3.99 and for ditransitive sentences was 3.16; the mean rating of teenagers for dative sentences was 3.84 and for ditransitive sentences was 2.82. Thus, similar to the previous results, on average, men’s ratings of each of the two constructions were higher than women’s, and adults’ ratings of each of the constructions were higher than teenagers’. The difference between these results and the previous ones is that the mean-ratings for all sex-age categories are higher when only sentences containing verbs with high ditransitive ratings were included in the analysis. The mean ratings and standard deviations of the
A repeated-measures ANOVA was used to examine the effects of speakers' sex and age on the ratings of these particular dative and ditransitive sentences. Contrary to the prediction, we could not find the stronger effects of sex and age on the rating patterns of these sentences. The results revealed that the main effect of sex was not significant, $F(1, 38) = 2.97, p = .093$. The main effect of age was not significant either, $F(1, 38) = 1.67, p = .204$. However, the two-way interaction of sex and age was significant: adult males' ratings of both dative and ditransitive constructions were higher than the other groups, $F(1, 38) = 4.83, p = .034$. Since these results could not
reveal the stronger effects of the two factors, they will be excluded in the further analysis.

Therefore, based on the results of the analysis which included all test sentences, we can conclude that there were sex differences between men and women, but not age differences between adults and teenagers, in their grammatical perception of the dative and ditransitive constructions. Men tend to rate dative and ditransitive sentences higher than women (see these results in detail on pages 174-6).

Description selection: Differences in semantic perceptions

Overall, the results were consistent across all sex-age categories of subjects; both the dative and ditransitive constructions were more strongly associated with the meaning of possession than with the meaning of path. Table 49 presents the percentages of construction-meaning responses in all subject categories.

<table>
<thead>
<tr>
<th></th>
<th>Dative-path</th>
<th>Dative-poss</th>
<th>Ditransitive-path</th>
<th>Ditransitive-poss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teenage female</td>
<td>15</td>
<td>85</td>
<td>21.25</td>
<td>78.75</td>
</tr>
<tr>
<td>Adult females</td>
<td>16.25</td>
<td>83.75</td>
<td>18.75</td>
<td>81.25</td>
</tr>
<tr>
<td>Teenage males</td>
<td>18.75</td>
<td>81.25</td>
<td>26.04</td>
<td>73.96</td>
</tr>
<tr>
<td>Adult males</td>
<td>15</td>
<td>85</td>
<td>11.25</td>
<td>88.75</td>
</tr>
<tr>
<td>Total</td>
<td>16.37</td>
<td>83.63</td>
<td>19.64</td>
<td>80.36</td>
</tr>
</tbody>
</table>

Since possession was overwhelmingly chosen to be associated with both constructions, it was used to run the analysis. The means and standard deviations of possession responses to the dative and ditransitive constructions, expressed as percentages, for all sex-age categories of subjects are shown in Table 50.
A repeated-measures ANOVA was used to examine the effects of sex and age of speakers on the semantic responses to dative and ditransitive sentences. The results of the test revealed that the main effect of sex was not significant, $F(1, 38) = .00, p = .989$. Similarly, the main effect of age was not significant, $F(1, 38) = 1.80, p = .188$; and the two-way interaction of sex and age was not statistically significant either, $F(1, 38) = 1.37, p = .249$.

Therefore, the results of description selection indicated that there was no significant difference among the subjects of different sex-age categories in their semantic perception of the dative and ditransitive constructions. The subjects in all categories strongly associated both constructions with the meaning of possession. These results were not surprising given that the main results of the experiment were
very consistent: both constructions were found to be strongly associated with possession for both subject analysis and item analysis (see Chapter 3, Section 3.2.2 for more details of the main results).

5.2.3 Discussion

The experiment on grammaticality judgments indicated that there is a significant effect of the speaker’s sex, but no significant effect of the speaker’s age, on the grammatical perception of the dative and ditransitive constructions in Thai. Male speakers tend to rate dative and ditransitive sentences higher than female speakers.

As for the experiment on description selection, the results indicated that there is no significant effect of the speaker’s sex and age on the semantic perception of the dative and ditransitive constructions. Speakers of all sex-age categories – teenage females, adult females, teenage males, and adult males – tend to strongly associate both constructions with the meaning of possession.

How can we explain the association between the grammatical perception of the constructions and the speaker’s sex? In other words, why do men tend to rate the grammaticality of dative and ditransitive sentences higher than women? An answer to this question can be related to the general tendency of sex differences in adherence to standard language. It has been observed in the variationist literature that women are generally more conscious of standard language and use more of the standard forms than men (Labov 1990, Fasold 1990, Chambers 1995). Consistent with this “gender-pattern” tendency (Fasold 1990), the fact that men’s ratings are higher than women’s suggests that men are more lenient than women in their notion of grammatical, proper, or standard language, and thus they are more likely to accept (and possibly produce)
datives and ditransitives in more varieties of contexts, including with more verbs or verb subclasses.

With respect to the factor of age, why can’t we see the significant effect of the speaker’s age on the grammatical perception of the dative and ditransitive constructions? One possible reason is because the gap between the teenagers and the adults who participated in the experiment was not large enough to reveal any difference in language use. Since all teenager subjects were undergraduate students, they were older than 18 years old. The average age of the teenager subjects was 19.9 while that of the adult subjects was 38.4. The previous studies which found variation of language in terms of speakers’ age covered a much bigger gap of age differences, for example, Labov’s (1963) study of subjects aged between 14 and 75+; Chambers and Trudgill’s (1980) study of subjects aged between 10 and 70+. Moreover, the fact that there was no significant difference in the grammatical judgments among speakers of different age groups may also be caused by the interference of other factors, such as education. Since all subjects had a higher education (either undergraduate or graduate study), they all were exposed to standard language. Despite being instructed to rate sentences based on their impression instead of on Standard Thai, the subjects might more or less be influenced by the notion of standard language in their judgments.

Therefore, the sex-age study of the dative and ditransitive constructions in Thai indicated that the two constructions can be differentiated by the speaker’s sex, in contrast to the speaker’s age. Male speakers differ from female speakers in their grammatical perception, but not in their semantic perception, of the constructions. While speakers of both sexes tend to associate the two constructions with the sense of
possession, men are more likely than women to accept datives and ditransitives as grammatical sentences, suggesting that they are more lenient in the notion of standard language.

5.3 Social factors and syntactic variation

This section serves to discuss how the study of social properties associated with the constructions contributes to the understating of the dative-ditransitive alternation in Thai. Specifically, the study reveals that the dative and ditransitive constructions in Thai are not simply alternating constructions which are interchangeable in certain types of linguistic contexts. According to Lavandera (1978), when the use of a variable correlates with certain positions of a socio-economic scale, this variable carries social significance; and when the use of a variable correlates with higher or lower positions on a scale of formality, this variable is interpreted as a carrier of stylistic variation. Since the dative and ditransitive constructions can systematically be differentiated by the sex of speaker and the formality of situation, they are also proved to be carriers of social and stylistic significance. There is a higher tendency for one sex than the other sex to accept and possibly produce the two constructions in a variety of contexts; there is a strong association of each construction with a particular type of context. Thus, the choice of one construction over the other reflects not only speakers’ syntactic knowledge but also their gender identity and attitudes towards the speech situation.

In a broader respect, this study has a theoretical implication for variationist study; it provides another case of evidence that it is feasible to extend the concept of the linguistic variable substantially proved to exist on the level of phonology to the
level of syntax. This further suggests that variation is everywhere in language (Bod et al. 2003), even in the use of argument structure constructions.

Moreover, for linguistics as a whole, the exploration of the boundaries of sociolinguistic variation and syntax demonstrates the value of bridging the gaps between the subfields. In this case, the incorporation of social factors into the study of the dative and ditransitive constructions shows that the alternation is constrained by both external and internal factors, and the choice of this syntactic variable reflects both syntactic and social aspects of the speaker's linguistic knowledge.

In conclusion, the study of the social properties of the dative and ditransitive constructions in Thai provides answers to two important questions in the following ways. First, register has an effect on the two constructions: the dative is likely to be used in formal contexts while the ditransitive is preferred in informal contexts. Second, the sex of the speaker, in contrast to the age of the speaker, has an effect on the two constructions. Male speakers tend to be less constrained in their grammatical perception of both constructions, thus they are more likely to rate dative and ditransitive sentences higher than female speakers. These answers point out that the study of datives and ditransitives in Thai can never be complete without taking into consideration the social properties associated with the constructions. The study demonstrates that alternating syntactic constructions can be constrained by not only linguistic and pragmatic but also social factors, suggesting the need to incorporate the theory of social variation into the study of syntax.
CHAPTER 6
CONCLUSION: INTERPRETING THE OVERALL RESULTS

The two important questions I began this study with were: (1) is there any interaction among different types of properties associated with argument structure constructions, and (2) what does such an interaction reveal to us about the speaker's linguistic knowledge, i.e., the aspects of knowledge required in order to choose the grammatical and appropriate variant? The preceding chapters have laid the groundwork for answering these questions through a case study of datives and ditransitives in Thai. Chapter 2 presents the theoretical frameworks used for the study, CG and the Variationist. Chapter 3 examines the linguistic properties – distribution and meaning – of these two constructions. The results of the study on grammaticality judgments indicate that the dative usually occurs with more semantic subclasses of verbs than the ditransitive; it occurs with not only verbs denoting the basic sense of transfer (i.e., successful transfer) but also with those denoting extended senses of transfer. As for meaning, the results of the experimental study on description selection show that both constructions are strongly associated with the sense of possessive transfer.

Chapter 4 investigates the pragmatic properties – heaviness and information structure – of the Thai constructions. In terms of heaviness, the results of the corpus and web-board study indicate that the dative tends to be used more frequently when NP1 and/or NP2 are heavy whereas the ditransitive tends to be used more frequently when both object NPs are short. With respect to information structure, the study shows that the dative is likely to occur with discourse-new NP2 while the ditransitive with discourse-given NP2.
Chapter 5 studies the social properties – register, sex, and age of speakers – associated with the constructions. The results of the corpus and web-board study and the experimental studies indicate the significant effects of register and sex. Speakers tend to choose the dative in formal contexts and the ditransitive in informal contexts. In terms of sex, on average men’s grammaticality ratings of dative and ditransitive sentences are higher than women’s, suggesting that male speakers tend to be less strict in their grammatical perception of the dative and ditransitive constructions than are female speakers.

In this chapter, I will look at the relationships among all of these three different types of properties specific to the dative and ditransitive constructions in Thai in order to answer the two big questions outlined at the beginning. I will propose that each of these properties not only influences the use of a construction independently, but they also interact in two specific manners. That is, the presence of one property is motivated by the presence of another property associated with the same construction; and different types of properties simultaneously influence the choice of a construction. Moreover, by examining the nature of the relationship and the choice of a construction, I will argue that when deciding to choose an argument structure, speakers need to know not only conventional units and categorical rules in language, but also knowledge about interactions and probabilities as part of their linguistic knowledge.

The chapter consists of three main sections. The first section analyses the interaction among linguistic, pragmatic, and social properties. The second section discusses the inclusion of interactions and probabilities in the realm of linguistic knowledge. The third section serves as the conclusion of the overall study.
6.1 Interaction of linguistic, pragmatic, and social properties

6.1.1 Motivating interaction

This section deals with the first type of interaction, “motivating interaction,” of the linguistic, pragmatic, and social properties associated with the dative and ditransitive constructions in Thai. It examines the relationships of properties of the same type and also those of different types. The purpose of the section is to argue that all these properties interact in such a way that some can be motivated, and thus predicted, on the basis of others.

The first two relationships to be discussed hold between properties of the same type: (1) linguistic properties: meaning and distribution, and (2) pragmatic properties: heaviness and newness. Since these relationships have already been accounted for in Chapters 3 and 4, they will be succinctly summarized here in order to support the main argument of the section. The last type of relationship, which will be discussed in detail, involves heaviness, a pragmatic property, and register, a social property. This discussion serves to illustrate that a property can be influenced by another property of a different type associated with the same construction.

Linguistic properties: Meaning and distribution

The analysis of the relationship of these two linguistic properties suggests that the meaning associated with the dative and ditransitive constructions greatly influences the distribution of the constructions. The results of the experiment on description selection indicate that the two constructions are strongly associated with the sense of possessive transfer. Consistent with these results, the experiment on grammaticality judgments shows that only verbs belonging to the semantic subclasses having the
meaning compatible with the constructional sense are conventionally used in both constructions. The ditransitive is likely to occur with verbs of Subclass 1 (inherent acts of giving), which encode literal transfer, and those of Subclass 6 (communicated message), which encode metaphorical transfer. The dative tends to be used with verbs of these two semantic subclasses and also those of the subclasses having extended senses of transfer. That the dative is preferred with more subclasses than the ditransitive is explained by arbitrary, conventional associations of each construction with a set of verb subclasses (see more details of the relation between meaning and distribution in Chapter 3, Section 3.3).

These results support CG's proposal of the relation between meaning and distribution, which focuses on the existence and role of meaning derived directly from abstract clausal patterns. Also, they point out an important fact about the relationships among properties inherent to argument structure constructions; the presence of one property can be motivated by the presence of another property associated with the same construction. In this case, the distribution of the dative and ditransitive is motivated by the meaning specific to the constructions.

Moreover, we may consider the relationship between meaning and distribution as reciprocally motivating. On one hand, the constructional meaning, i.e., the sense of transfer, restricts a set of verbs that tend to be acceptable in the dative and ditransitive constructions. On the other hand, since the two constructions are usually used with verbs having the meaning of transfer, speakers are influenced by the core meaning of these verbs and extract the meaning of the constructions on the basis of their distribution (Goldberg 1999). The result of the collocation study by Stefanowitsch
and Gries (2003) supported this argument: verbs that are strongly attracted to the ditransitive construction “provide a good indicator of its meaning” (229).

Pragmatic properties: Heaviness and newness

Similar to the case of linguistic properties, the relationship between pragmatic properties, heaviness and newness, associated with the dative and ditransitive constructions in Thai, can be accounted for in terms of the motivating interaction. The corpus and web-board study suggests that heaviness and newness significantly correlate with the two constructions. A logistic regression test was used to evaluate the effects of these factors on the constructions. The result of the test indicates that the weight of the object is the real cause that influences the choice of a construction. The dative construction is preferred when either of the objects is long whereas the ditransitive construction is preferred when the two objects are short. Such different patterns of weight are motivated by the desire to facilitate efficient communication; the dative preposition serves to separate the two objects, making the structure more transparent. These weight patterns in turn motivate the discourse status of the objects specific to the constructions; long NP2s tend to be discourse-new while short NP2s tend to be discourse-given (see more details of the relation between heaviness and newness in Chapter 4, Section 4.3).

These results support the correlation between heaviness and newness that is generally found in many languages; items that are new tend to be complex whereas items that are given tend to be simple (Givón 1983, Ariel 1990, Arnold et al. 2000). Moreover, they strengthen the argument that certain properties associated with
particular argument structure constructions are motivated by the presence of other properties associated with those constructions.

**Pragmatic and social properties: Heaviness and register**

According to Irvine (1979) and Finegan and Biber (1994), there is a relation between explicitness of linguistic forms and formality of speech situations. A formal situation is usually characterized by linguistic features representing explicitness and elaboration whereas an informal situation is typically marked by linguistic features representing ease and economy. Applying this relation to the case of Thai datives and ditransitives, I hypothesize that there is a systematic correlation between NP heaviness and register associated with the constructions. Given that long and complex objects represent explicitness and elaboration, they should be frequently found in formal contexts. On the other hand, since short and simple objects represent ease and economy, they should occur more often in informal contexts.

To examine the relation between the pragmatic property, i.e., NP weight, and the social property, i.e., formality of situation, I compared the number of objects under different conditions of heaviness and register, and used a chi-square test to analyze the relationship of the two factors. The hypothesis underlying this study is that there is a systematic association between these two different types of properties associated with the constructions. The details and results of the weight-register analysis – specific to NP1 and NP2 – are discussed below.

*Weight of NP1 and register*

To investigate the correlation between weight of NP1 and register, the patient objects in each of the following weight-register groups were counted.
Table 51: Number of NP1s in Different Weight-Register Groups.

<table>
<thead>
<tr>
<th>Register</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>186</td>
<td>29</td>
<td>29</td>
<td>18</td>
<td>22</td>
</tr>
<tr>
<td>Informal</td>
<td>181</td>
<td>15</td>
<td>7</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 52 and Figure 15 compare the percentages of the patient objects that occur in formal vs. informal contexts in each weight group.

Table 52: Percentages of NP1s in Each Weight-Register Group.

<table>
<thead>
<tr>
<th>Register</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>50.68</td>
<td>65.91</td>
<td>80.56</td>
<td>90.0</td>
<td>91.67</td>
</tr>
<tr>
<td>Informal</td>
<td>49.32</td>
<td>34.09</td>
<td>19.44</td>
<td>10.0</td>
<td>8.33</td>
</tr>
</tbody>
</table>

Figure 15. Percentages of NP1s in Each Weight-Register Group.

A chi-square test was used to examine whether there was a correlation between the weight of NP1 and the type of register. The result of the test showed that there was a significant correlation between these two factors, revealing that longer NP1s tended to occur in formal contexts whereas shorter NP1s tended to occur in informal contexts, $\chi^2 (4, N = 491) = 36.25, p \leq .001$. This supported the research hypothesis which argued for the systematic relation between the weight of NP1 and the type of register.
Weight of NP2 and register

To investigate the correlation between weight of NP2 and register, the recipient objects in each of the following weight-register groups were counted.

<table>
<thead>
<tr>
<th>NP2 Weight</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Register</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal</td>
<td>111</td>
<td>43</td>
<td>39</td>
<td>18</td>
<td>73</td>
</tr>
<tr>
<td>Informal</td>
<td>140</td>
<td>27</td>
<td>18</td>
<td>7</td>
<td>15</td>
</tr>
</tbody>
</table>

Table 54 and Figure 16 compare the percentages of the recipient objects that occur in formal vs. informal contexts in each weight group.

<table>
<thead>
<tr>
<th>NP2 Weight</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Register</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal</td>
<td>44.22</td>
<td>61.43</td>
<td>68.42</td>
<td>72.0</td>
<td>82.95</td>
</tr>
<tr>
<td>Informal</td>
<td>55.78</td>
<td>38.57</td>
<td>31.58</td>
<td>28.0</td>
<td>17.05</td>
</tr>
</tbody>
</table>

A chi-square test was used to examine whether there was a correlation between the weight of NP2 and the type of register. The result of the test showed that there was a significant correlation between these two factors, revealing that longer NP2s tended...
to occur in formal contexts whereas shorter NP2s tended to occur in informal contexts, $\chi^2 (4, N = 491) = 46.89, p \leq .001$. This supported the research hypothesis which argued for the systematic relation between the weight of NP2 and the type of register.

Therefore, the chi-square test reveals a significant correlation between NP heaviness and register. Long objects tend to occur in formal contexts while short objects tend to occur in informal contexts. The corpus and web-board study in Chapter 4 and 5 indicates that each of these properties correlates independently with the distribution of the dative and ditransitive constructions. In terms of heaviness, the dative is likely to be used when one or two objects are long whereas the ditransitive is preferred when the two objects are short. With respect to register, the dative is likely to occur in formal contexts whereas the ditransitive is preferred in informal contexts. Given the correlation between NP heaviness and register, we should expect to find the dative most often when the objects are heavy and when the context is formal. On the other hand, the ditransitive should be chosen most frequently when the objects are short and when the context is informal.

Table 55 shows the numbers of dative and ditransitive sentences under different conditions of NP1 weight and register.

<table>
<thead>
<tr>
<th>Register</th>
<th>NP1 Weight</th>
<th>Dative</th>
<th>Ditransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>1 word</td>
<td>109</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>90</td>
<td>8</td>
</tr>
<tr>
<td>Informal</td>
<td>1 word</td>
<td>28</td>
<td>153</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>17</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 56 and Figure 17 compare the percentages of dative and ditransitive sentences in each weight-register group.
TABLE 56. Percentages of Dative and Ditransitive Sentences in Each NP1 Weight-Register Group.

<table>
<thead>
<tr>
<th>Register</th>
<th>NP1 Weight</th>
<th>Dative</th>
<th>Ditransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>1 word</td>
<td>58.60</td>
<td>41.40</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>91.84</td>
<td>8.16</td>
</tr>
<tr>
<td>Informal</td>
<td>1 word</td>
<td>15.47</td>
<td>84.53</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>65.38</td>
<td>34.62</td>
</tr>
</tbody>
</table>

As expected, the percentage of datives was highest when NP1 was long and when the context was formal; on the other hand, the ditransitive was used mostly when NP1 was short and when the context was informal.

A binary logistic regression was performed to evaluate the effects of NP1 weight and register on the choice between the dative and ditransitive constructions. The results revealed that the overall model was significant according to the Model chi-square, $p < .01$, and the model predicted 75.2% of the responses correctly. The weight of NP1 was a significant factor, $p < .01$; and the type of register was also a significant factor, $p < .01$. The two-way interaction of NP1 weight and register was almost significant, $p = .07$.

Table 57 shows the numbers of dative and ditransitive sentences under different conditions of NP2 weight and register.
Table 57 and Figure 18 compare the percentages of dative and ditransitive sentences in each weight-register group.

**TABLE 57. Number of Dative and Ditransitive Sentences in Different NP2 Weight-Register Groups.**

<table>
<thead>
<tr>
<th>Register</th>
<th>NP2 Weight</th>
<th>Dative</th>
<th>Ditransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>1 word</td>
<td>75</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>124</td>
<td>49</td>
</tr>
<tr>
<td>Informal</td>
<td>1 word</td>
<td>19</td>
<td>121</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>26</td>
<td>41</td>
</tr>
</tbody>
</table>

Table 58 and Figure 18 compare the percentages of dative and ditransitive sentences in each weight-register group.

**TABLE 58. Percentages of Dative and Ditransitive Sentences in Each NP2 Weight-Register Group.**

<table>
<thead>
<tr>
<th>Register</th>
<th>NP2 Weight</th>
<th>Dative</th>
<th>Ditransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formal</td>
<td>1 word</td>
<td>67.57</td>
<td>32.43</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>71.68</td>
<td>28.32</td>
</tr>
<tr>
<td>Informal</td>
<td>1 word</td>
<td>13.57</td>
<td>86.43</td>
</tr>
<tr>
<td></td>
<td>2+ words</td>
<td>38.81</td>
<td>61.19</td>
</tr>
</tbody>
</table>

**FIGURE 18. Percentages of Dative and Ditransitive Sentences in Each NP2 Weight-Register Group.**

Similarly to the case of NP1, the percentage of datives was highest when NP2 was long and when the context was formal; on the other hand, the ditransitive was used mostly when NP2 was short and when the context was informal.

A binary logistic regression was performed to evaluate the effects of NP2 weight and register on the choice between the dative and ditransitive constructions. The results revealed that the overall model was significant according to the Model chi-square, $p < .01$, and the model predicted 74.5% of the responses correctly. The weight
of NP2 was a significant factor, $p < .01$; and the type of register was also a significant factor, $p < .01$. The two-way interaction of NP2 weight and register was significant, $p < .005$.

All of these results reveal the relationship between heaviness and register. Based on Biber (1994), the association between register and linguistic form is bidirectional, with the situational characteristics influencing the linguistic form, while the form in turn helping to create the situation. In this specific case of the Thai constructions, one possible explanation is that heaviness and register motivate each other. That is, the type of register (formal vs. informal situations) might motivate the weight of the objects (long vs. short objects), and the length of the object in turn might increase the formality of the situation. Due to this relationship, the dative tends to be used most frequently when the objects are heavy and the context is formal; whereas the ditransitive is likely to be chosen most frequently when the objects are short and the context is informal.

In sum, the analysis of the linguistic, pragmatic, and social properties associated with the dative and ditransitive constructions in Thai indicates that these properties do not independently exist and influence the constructions. The presence of a certain property can be motivated by the presence of another property that is associated with the same construction. Such a relationship can be found not only among properties belonging to the same type, but also those of different types. Thus, the analysis suggests a need to examine different properties and their relationships in the study of argument structure constructions.
6.1.2 Structured interaction: Simultaneous influence

This section deals with the "structured interaction" of linguistic, pragmatic, and social properties associated with the dative and ditransitive constructions in Thai. It begins with two previous studies on interactions between linguistic and social factors, one concerned with a phonological variable, t/d deletion (Kemmer and Israel 1994), and the other with a syntactic variable, copula absence (Bender 2000). The present study of Thai datives and ditransitives differs from these two studies in that it involves the interaction of more types of factors and it deals with a higher level of linguistic unit, argument structure constructions. The purpose of the section is to show that despite such differences, a pattern of structured interaction similar to that found in the previous studies is relevant to the case of the dative and ditransitive constructions in Thai. This interaction suggests that different types of properties simultaneously influence the choice of a construction.

Kemmer and Israel (1994) presented an analysis of grammatical and social constraints on t/d deletion within the usage-based model as proposed by Langacker (1987, 1988). On this model, all linguistic units are pairings of form and meaning; speakers learn such units by experience and gradually extract general rules over these units. Langacker described the process of learning as follows (1987:46).

The grammar lists the full set of particular statements representing a speaker's grasp of linguistic convention, including those subsumed by general statements... Speakers do not necessarily forget the forms they already know once the rule is extracted, nor does the rule preclude their learning additional forms as established units. Consequently, particular statements (specific forms) coexist with general statements (rules accounting for those forms) in a speaker's representation of linguistic convention, which incorporates a huge inventory of specific forms learned as units (conventional expressions).

Following Bybee (1988), Kemmer and Israel assumed that two quite general cognitive abilities play crucial roles in structuring the grammar: "the ability to form
networks among stored elements of knowledge and the ability to register frequency of individual items and patterns” (Bybee 1988:125). Moreover, consistent with the original observations by Weinreich, Labov, and Herzog (1968), Kemmer and Israel assumed that variation is a fundamental linguistic phenomenon which exists at all levels of language: phonology, morphology, and syntax.

Based on all these assumptions, Kemmer and Israel accounted for the variable rule of t/d deletion, which says that a coronal stop is variably deleted after a word-final consonant. They proposed that all common words subject to variable t/d deletion have two representations in speakers’ grammar, one with the final t/d and the other without the final consonant. The repeated experience of particular phonological tokens leads to the elaboration of a network in which alternate pronunciations of lexical items are listed together. When this network consists of many such pairs of lexical items, it leads to the abstraction of a general schema of t/d deletion.

Since the grammar contains multiple forms of the same word, some mechanism is needed to determine which one will win out in any given usage event. Generally, an item’s degree of entrenchment, i.e., its frequency of use, serves to determine the likelihood of the selection. For example, a pair of forms like [fɪst] and [fɪs] for fist compete for selection when the speaker goes to pronounce the word. Given that the network indicates that deletion is quite likely after a sibilant, the deleted variant is more heavily entrenched, and thus more likely to win out.

However, other information associated with the forms may affect the selection. It has been found in several studies (e.g., Wolfram 1969, Guy 1980) that certain social factors influence the probability of deletion, for example, the formality of the speech
situation (less formal registers favoring more deletion). If the characteristics of the social situation match the specification on the less frequent form, the less frequent item will be promoted and win out. Thus, which form is selected for any given usage event depends not only on the linguistic factors, but also on "how well this particular usage event fits the idealized speech act situation associated with the form" (174). In a more formal context, the non-deleted variant may be preferred, since the formal character of the speech situation matches the prototypical context type associated with non-deleted forms. Kemmer and Israel (174) summarized the effects of social factors on the choice between alternating form as follows:

Thus, social contexts of particular kinds (defined by genre, level of formality, group membership of interlocutors, etc.) may systematically encourage or inhibit the selection of particular variants in just the same way that linguistic contexts do. It is important to emphasize that while these social parameters vary independently of the phonological and morphophonological factors, their effect on the selection of deleted or undeleted alternants is strictly analogous to the effects of the more straightforwardly linguistic factors. In both cases, it is the matching of usage events to the complex specifications of conventional linguistic units that drive the probabilistic selection of the alternating forms.

In sum, Kemmer and Israel's account of t/d deletion illustrates the existence of the interaction between linguistic and social factors in the speaker's representation of grammar. The speaker's grammar comprises a particular set of conventional units, including alternating forms and relative differences in entrenchment for related units. These networked, differentially-entrenched units have different likelihoods of selection typically under the influence of linguistic factors, and these likelihoods are affected by the presence of other specific factors such as aspects of the speech situation. On this account, the choice between alternating forms is not a result of a single variable rule, but rather it is conditioned by the interaction of several factors, each represented as an independent schema in the grammar. Thus, Kemmer and Israel concluded that the
selection of the right phonological variant becomes a problem of "simultaneous constraint satisfactions" (176).

Bender (2000) studied grammatical and social constraints on variable copula absence in African American Vernacular English (AAVE). She referred to the grammatical constraints as "non-categorical constraints" since copula absence is not ungrammatical but only uncommon in certain grammatical environments. Her analysis of this type of constraints was based on Wolfram (1969), who examined usage frequency and proposed a hierarchical list of grammatical environments on copula absence. As shown below, these environments are arranged according to the ranking, where the ones to the left are the least favorable to copula absences and the ones to the right are the most favorable.

\[
\text{NP} < \text{Loc} < \text{Adj} < \text{V+ing} < \text{gonna}
\]

The following examples, taken from Wolfram, illustrate each of the environments.

(1) \text{NP:} \quad \text{She a nurse.}
(2) \text{Loc:} \quad \text{They out there in space.}
(3) \text{Adj:} \quad \text{She real nice.}
(4) \text{V+ing:} \quad \text{Do anything if you fighting.}
(5) \text{gonna:} \quad \text{I really don't think John gonna make it.}

As for the social constraints, based on previous studies including Wolfram (1969) and Rickford and McNair-Knox (1994), Bender hypothesized that people tend to have negative attitudes towards copula absence and their speakers (e.g., not well-educated, not confident, not having a good job, not likeable, impolite); conversely, they
tend to have positive attitudes towards copula presence and their speakers (e.g., well-educated, confident, having a good job, likeable, polite).

Through a matched-guise experiment, she compared four cases different in terms of the type of the predicate and the presence of the copula: copula presence and NP predicate, copula absence and NP predicate, copula presence and V+ ing predicate, and copula absence and V+ ing predicate. The results of the experiment showed that listeners based their social evaluation of the talkers in part on the presence vs. absence of the copula. Moreover, the results indicated that grammatical and social constraints interact: copula absence/presence in AAVE is more strongly associated with its social value the more marked the environment is for each variant. These led to Bender’s concluding statement: “social constraints are conceptualized as the social meaning of the variable, and grammatical constraints as the intensifying or attenuating effect of the grammatical environment on the social meaning or social value of the variable” (148).

Bender accounted for the interaction of grammatical and social constraints as follows. The grammatical constraints remain constant. That is, based on Wolfram’s ranking, a following NP favors copula presence more strongly than a following ing-form verb; on the other hand, a following ing-form verb favors copula absence more strongly than a following NP. However, the desire to express the social value associated with the disfavored variant can override the bias against that variant. The stronger the bias against the variant, the more the speaker has to want to express the social value in order to overcome it.
Bender provided the following formalization as an illustration.

<table>
<thead>
<tr>
<th>copula be</th>
<th>silent copula</th>
</tr>
</thead>
<tbody>
<tr>
<td>_NP social: educated</td>
<td>_NP</td>
</tr>
<tr>
<td>.4</td>
<td>.6</td>
</tr>
</tbody>
</table>

**FIGURE 19.** Competing Entries for Copula Sentences with NP Predicates (adapted from Bender 2000:292).

<table>
<thead>
<tr>
<th>copula be _V+ing</th>
<th>silent copula _V+ing</th>
</tr>
</thead>
<tbody>
<tr>
<td>social: educated</td>
<td></td>
</tr>
<tr>
<td>.2</td>
<td>.8</td>
</tr>
</tbody>
</table>

**FIGURE 20.** Competing Entries for Copula Sentences with V+ ing Predicates (adapted from Bender 2000:292).

The two entries in Figure 19 are in competition with each other, as are the two in Figure 20. In these entries, social value is associated only with copula presence, and indicated by the word “educated” as a short hand for something that is more complicated. The numbers to the left of the entries represent different degrees of resting activation, or frequency (varying between 0 and 1); these values are only for the purpose of illustration and not based on any particular data set.

Bender (292-3) compared the entries in these figures and argued for the interactive effects of grammatical environments and social meaning on copula absence:

According to the model sketched here, all else being equal, copula absence would prevail in both cases. However, should the speaker desire to express the social value of copula presence (e.g., should the speaker want to sound educated), there is the option of using an overt form of the copula. In the case of an NP predicate, the two options are relatively close in their activation, and so it doesn’t take much to override the resting probabilities. In the case of the V+ ing predicate, however, there is a much stronger bias towards copula absence and therefore the speaker must be much more emphatic about the social value of copula presence to override this bias. Listeners who have experience with this pattern (and have reason to believe that the speaker is working with the relevant set of probabilities) can interpret this as copula presence with V+ ing sounding more educated than copula presence with an NP complement.
Thus, like Kemmer and Israel's account of t/d deletion, Bender accounted for
the competition of alternating forms in terms of the interaction of linguistic and social
factors. These forms are different in their frequency, typically under the influence of
linguistic factors; for example, copula presence in V+ ing predicate is less favored than
copula presence in NP predicate. However, the choice of the form depends not only on
the linguistic constraints but also on their interaction with the social value associated
with the variants; for example, disfavored variants like copula presence with V+ ing
may be chosen in order to sound educated. Bender emphasized such an interaction: the
stronger the bias against the variant is, the more the speaker has to want to express the
social value in order to overcome it. In this case, since copula presence is more
disfavored with V+ ing complements than with NP complements, it takes more desire
to express the social value of copula presence to use it in the V+ ing environment. As a
result, copula presence with V+ ing should sound more educated than copula presence
with an NP complement.

Based on these two previous studies on interactions, I suggest that the case of
the dative and ditransitive constructions in Thai can be accounted for in a similar way.
Every speaker's grammar comprises a set of conventional units in the language; these
units include alternating forms and their associated relative degrees of entrenchment.
Specifically, through their language experience, speakers know that datives and
ditransitives are alternating constructions with the same denotational meaning of
possessive transfer; they also know that the two constructions differ in degrees of
entrenchment when used with various verb semantic subclasses. Given that
grammaticality judgments are usually biased by the number of occurrences (Bresnan
and Nikitina 2003), the results of dative and ditransitive ratings in Chapter 3 reflect speakers' knowledge of the constructions' different degrees of entrenchment. That is, verbs that occur more frequently in either construction should be rated higher than those that occur less frequently. Speakers' knowledge about the relative association-strength of the constructions with different verb subclasses, which is presented in Table 7, is repeated here for reference in Table 59.

**TABLE 59. Dative-Ditransitive Mean Ratings of Semantic Subclasses of Verbs.**

<table>
<thead>
<tr>
<th>Semantic subclass</th>
<th>Mean rating-dative</th>
<th>Semantic subclass</th>
<th>Mean rating-ditransitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>4.16</td>
<td>6</td>
<td>3.71</td>
</tr>
<tr>
<td>6</td>
<td>4.14</td>
<td>1</td>
<td>3.17</td>
</tr>
<tr>
<td>1</td>
<td>4.04</td>
<td>12</td>
<td>2.38</td>
</tr>
<tr>
<td>11</td>
<td>3.74</td>
<td>11</td>
<td>2.26</td>
</tr>
<tr>
<td>7</td>
<td>3.62</td>
<td>7</td>
<td>2.11</td>
</tr>
<tr>
<td>3</td>
<td>3.51</td>
<td>5</td>
<td>1.95</td>
</tr>
<tr>
<td>2</td>
<td>3.41</td>
<td>18</td>
<td>1.9</td>
</tr>
<tr>
<td>8</td>
<td>3.39</td>
<td>8</td>
<td>1.7</td>
</tr>
<tr>
<td>12</td>
<td>3.36</td>
<td>10</td>
<td>1.64</td>
</tr>
<tr>
<td>17</td>
<td>3.31</td>
<td>16</td>
<td>1.63</td>
</tr>
<tr>
<td>9</td>
<td>3.24</td>
<td>3</td>
<td>1.59</td>
</tr>
<tr>
<td>18</td>
<td>3.19</td>
<td>14</td>
<td>1.59</td>
</tr>
<tr>
<td>13</td>
<td>3.18</td>
<td>9</td>
<td>1.56</td>
</tr>
<tr>
<td>14</td>
<td>3.06</td>
<td>17</td>
<td>1.54</td>
</tr>
<tr>
<td>15</td>
<td>3.04</td>
<td>4</td>
<td>1.46</td>
</tr>
<tr>
<td>10</td>
<td>2.86</td>
<td>2</td>
<td>1.45</td>
</tr>
<tr>
<td>16</td>
<td>2.36</td>
<td>13</td>
<td>1.45</td>
</tr>
<tr>
<td>4</td>
<td>1.82</td>
<td>15</td>
<td>1.42</td>
</tr>
</tbody>
</table>

This knowledge about meaning and distribution, also referred to as linguistic constraints, remains quite constant across contexts. That is, there are only two subclasses whose average ditransitive ratings are high: Subclass 1 (inherent acts of giving) and Subclass 6 (communicated message). This suggests that regardless of the context, speakers are likely to restrict the use of the ditransitive construction to verbs belonging to these two subclasses. On the other hand, they tend to use the dative construction with verbs of these two subclasses and also other subclasses having the
extended senses of transfer, e.g., Subclass 5 (future having), Subclass 11 (manner of speaking), Subclass 7 (instrument of communication). And this accounts for the high ratings of these verb subclasses when they appear in the dative form.

However, similar to the cases of t/d deletion and copula absence, the relative likelihood of the dative and ditransitive constructions does not depend only on these linguistic constraints. Rather, it is often affected by the pragmatic and social properties associated with each of the variants. The interaction between linguistic properties and pragmatic and social properties result in the preference of one construction over the other in particular contexts.

In terms of pragmatic properties, the mean ratings in the table above indicate that both constructions are strongly associated with Subclass 1 (verbs of inherent acts of giving), suggesting that the use of these verbs in the two constructions is very common, with the dative slightly more favored than the ditransitive (4.04 vs. 3.17). However, as revealed in the corpus and web-board study, speakers show a strong preference for one construction under the influence of pragmatic factors. For example, they are more likely to use these verbs in the dative form when one or both objects are heavy. Conversely, they prefer to use this same set of verbs in the ditransitive form when both objects are short.

Social properties have similar effects on the choice between the two constructions. For example, the corpus and web-board study shows that in informal contexts, speakers prefer to use verbs of inherent acts of giving with the ditransitive variant; whereas when the context is more formal, they prefer to use this set of verbs in the dative form. Based on Finegan and Biber's (1994) account of register variation, the
ditransitive structure is marked by ease and economy, the characteristics associated with informality. In contrast, the dative structure is marked by explicitness and elaboration, the characteristics associated with formality. Thus, a construction may be chosen because its prototypical context type matches the formal or informal character of the speech situation (Kemmer and Israel 1994).

Therefore, like Kemmer and Israel's proposal of a phonological variable, the selection of the right construction variant is a matter of "simultaneous constraint satisfactions." The speaker's knowledge comprises a set of conventional units, which includes the alternating dative and ditransitive forms, and their associated relative degrees of entrenchment typically under the influence of linguistic constraints. These differently-weighted forms result in different likelihoods of selection, and these likelihoods are often affected by the presence of pragmatic and social factors: heaviness, newness, register, and sex of speakers.

I refer to such an interaction of linguistic, pragmatic, and social properties as "structured interaction" for two reasons. First, they reflect the sociolinguistic notion of "structured heterogeneity," which is considered a typical characteristic of linguistic patterning and behavior. All three types of properties impose non-categorical constraints on the dative and ditransitive constructions. However, the examination of these constraints in the previous chapters reveals that they are systematically associated with each of the constructions. Moreover, due to such systematic patterns of association, their interaction results in a tendency to choose one construction over the other in a particular context.
The second reason concerns variation in the use of the two alternating constructions. While variation at the individual level occurs as a result of the interaction between linguistic factors and particular pragmatic or social factors that come into play in a given context, variation across speakers is inevitable and mainly caused by the individual's unique linguistic experience. However, this kind of variation is systematic; differences among speakers are constrained by the effects of mutual interactions and the need for successful communication (Kemmer and Israel 1994). Accordingly, it is not surprising to find that throughout the study, variation across speakers in the use of the dative and ditransitive constructions is relatively small.

For example, grammaticality judgments show an overall preference for the dative structure; the mean rating of the dative is 3.34 while that of the ditransitive is 1.95. These differences in judgments are quite consistent across subjects; only two of the 42 subjects showed the reverse pattern in which the ditransitive was rated higher than the dative. Similarly, the experiment on description selection shows that there is no variation across speakers in their interpretation of the constructions: all subjects associated both constructions more strongly with the meaning of possession than with the meaning of path.

In sum, the analysis of the linguistic, pragmatic, and social properties associated with the dative and ditransitive constructions in Thai suggests that these different types of properties interact. Generally, the linguistic constraints, concerned with meaning and distribution, remain constant regardless of the context. However, the likelihood of choosing a particular construction is often influenced by pragmatic and social constraints, which results in the preference of one construction over the other in a
particular context. Thus, the choice between the constructions is influenced simultaneously by different types of properties. The interaction of different properties is referred to as structured interaction since all three types of properties are systematically associated with the constructions, and their interaction results in the consistent likelihood of using one particular construction in one particular context. Moreover, variation across speakers in the use of the constructions is also systematic; there is no great variation among speakers in their use of the constructions.

6.1.3 Conclusion

The analysis of the linguistic, pragmatic, and social properties associated with the dative and ditransitive constructions in Thai suggests that these properties not only influence the constructions independently, but also they interact in two specific manners. First, certain properties motivate other properties. Thus, the occurrence of one property may be predicted on the basis of the existence of another. Second, they have the structured interaction. The selection of one construction over the other is determined by the interplay of linguistic, pragmatic, and social factors that are systematically associated with the constructions, suggesting that different types of properties simultaneously influence the choice of a construction.

6.2 Interactions and probabilities as parts of linguistic knowledge

This section deals with the question of what aspects of knowledge speakers need when they choose an argument structure construction. The purpose of the section is to argue that apart from conventional units and categorical rules in language, interactions and probabilities should be considered as essential components of speakers' linguistic knowledge.
Weinreich et al. (1968) observed that the structure in variation is apparent only when the language of the whole community is studied. What looks random and meaningless at the level of the individual speaker becomes part of a pattern when the speech of many speakers in a community is considered. The study of the dative and ditransitive constructions gives support to this argument. Examination of these constructions across many different speakers suggests that variation in the use of the constructions in fact involves a pattern that is systematically associated with various linguistic and non-linguistic properties.

Hymes (1974) pointed out a goal in the study of sociolinguistic variation which has established the interrelationship and codependence between different properties of a linguistic unit as a major theoretical concern in the field, that is, “to identify rules, patterns, purposes, and consequences of language use, and to account for their interrelations” (71). With this goal, the central questions to ask then became: what factors affect a speaker’s decision to use one variant over another; and how we can model the simultaneous influence of different factors at that particular decision point (Mendoza-Denton et al. 2003). While such questions have been dealt with throughout the previous sections, this section discusses another important question also relevant to the above goal set up by Hymes: what does the interrelation between different properties of a linguistic construction tell us about the components of the speaker’s linguistic knowledge?

Based on my case study of the dative and ditransitive constructions in Thai, I propose that two aspects of knowledge should also be considered as essential parts of

30 Notice that with this goal, the central questions in Sociolinguistics become overlapping with those in Psycholinguistics.
the speaker’s linguistic competence. The first is knowledge about the interaction of different properties associated with a construction. In order to choose between alternating constructions, speakers need to know linguistic properties influencing each of the variants; moreover, they need to know other types of properties, including pragmatic and social meanings, and also how all these different types of properties interact and have an effect on the selection of a construction.

Bender (2000) argued for the inclusion of extra types of properties like pragmatic and social meanings in the representation of grammar. Although she focused on social evaluation of linguistic variants, the implication of her argument can be applied to both pragmatic and social meanings. She suggested that general characteristics of pragmatic/social meanings are not different from those of denotational or referential meanings, the type of meaning conventionally regarded as an essential component of linguistic knowledge.

First, pragmatic/social meanings are derived from contexts of use. Similarly, the meanings of ordinary words get concrete and specific in everyday use (Marantz 1984). Bender (273) gave the following sentence as an example.

(6) Craig cut the lawn/hair/cocaine/record/rookie.

Here the meaning of *cut* is quite different depending on the object. In the first three cases, the sense of *cut* involves separating a single thing or mass into two parts. The latter two senses of *cut* can be seen as metaphorical. However, even among literal and metaphorical senses themselves, the actual actions that Craig engages in each individual case are different. For example, on hearing that Craig cut the lawn, we do not imagine that “he got down on hands and knees with a pair of scissors and trimmed
the blades of grass so as to make the lawn more stylish” (273). This argument was supported by the experimental studies by Stanfield and Zwaan (2001) and Zwaan et al. (2002), which demonstrated that people activate visual imageries during language comprehension. The result of their experiments showed that subjects represented the implied shape of the object when comprehending a sentence. An object (e.g., *an eagle*) is represented differently (e.g., with wings outstretched vs. with wings drawn in) depending on the context where it appears (e.g., *the ranger saw the eagle in the sky* vs. *the ranger saw the eagle in its nest*). All of these suggest that like pragmatic/social meanings, denotational meanings are subject to vivification in actual contexts of use.

Second, pragmatic/social meanings usually involve only particular groups of interlocutors. For example, knowledge about differences of datives and ditransitives in terms of formality of situations are specific to Thai speakers. Here again, there is a similarity with denotational meaning. There are many ordinary words that are also used as technical terms, for example, *daughter* (as a node of a tree), *mouse* (attached to a computer), and *government* (of a dependent by a head). The use of these words with these technical senses is restricted to a group of interlocutors. “Speakers who know the technical meanings of these words probably also know which interlocutors are likely to share that meaning” (274).

Third, pragmatic/social meanings are expected to be fluid and subject to disagreement between speakers, especially those speakers who do not have regular contact. For example, Thai speakers and English speakers may differ in their interpretations of dative and ditransitive sentences in various pragmatic/social contexts. Similarly, denotational meanings can be fluid and subject to (re)negotiation. Words
that have undergone semantic change provide evidence of past renegotiation. Bender's examples of these words include will (once meaning 'wish'), mistress (once parallel to master), and awesome (once meaning 'awe-inspiring', now having meaning similar to cool, a word which itself is also a consequence of renegotiation).

Due to these similarities, Bender concluded that there is no clear distinction between pragmatic/social meanings and denotational meanings; all these types of meanings should be considered not as "a difference in kind, but rather a difference in degree" (275). Thus, given such similarities, pragmatic/social meanings, like denotational meanings, should also constitute part of speakers' linguistic knowledge.

This conclusion automatically implies that when choosing between alternating constructions, speakers will make use of all types of knowledge they have about the competing variants, including their linguistic, pragmatic, and social characteristics. The study of datives and ditransitives in Thai demonstrates that there are interactions between these different types of properties. Speakers choose one construction over the other depending on the interactive effects of linguistic, pragmatic, and social factors. Since speakers' choice of a construction is influenced by these interactions, there is no reason to set the knowledge of interactions apart from other aspects of linguistic knowledge.

The second aspect of knowledge speakers need when choosing a construction is knowledge about probabilities. The study of dative and ditransitive constructions illustrates clearly that acquiring a language involves not just recognizing linguistic units, but also learning subtle "patterns of production" relevant to each unit in the language (Mendoza-Denton et al. 2003). Within a particular language, production
patterns differ across speakers, depending on the individual’s language experience. Within individuals, production patterns differ on the basis of pragmatic and social factors such as information structure, formality, and gender, etc. that come into play in a given speech situation. These patterns reflect not only variants but also their associated frequency: speakers differ not only in the specific variants they use in different contexts, but also in the frequency with which they use them. Thus, the ability to use language involves both the knowledge of variation and also the knowledge of frequency, or the probability of choosing a specific construction in a particular context.

Previous literature suggested that there are two main reasons why probabilities should be included as components of linguistic knowledge. The first reason is the evidence that probabilities are something people automatically learn and make use of throughout processes of language learning and using. The evidence that people can learn probabilities has been discussed in several studies. For example, Hasher and Chromiak (1977) conducted an experiment in which participants were shown a list of words, including some repeats, and then asked to judge how many times each word appeared. Neither of the participants was told before seeing the list that they would be asked about frequencies. The result showed that there was no difference among the subjects in their ability to learn frequencies; 2nd grade students did as well as college students. Hasher and Chromiak concluded that “frequency counting” is largely an automatic and basic skill that every individual has. However, I understand that counting in this sense does not necessarily refer to literal counting. Rather, its effects are simply felt indirectly in the strength of particular activations. Due to the result of
Hasher and Chromiak, the more important question about probabilities to be concerned with is not whether people can learn probabilities, but whether they do (Bender 2000).

MacDonald (1994) provided evidence that speakers have knowledge of probabilities and make use of this knowledge in sentence processing. She conducted an experiment to examine whether the relative frequency of different argument structures of verbs has an effect on the processing of the main verb. In this experiment, the reading times of sentences like the following were compared.

(7)  a. The rancher knew that the nervous cattle moved into the crowded pen were afraid of the cowboys.
    b. The rancher knew that the nervous cattle pushed into the crowded pen were afraid of the cowboys.
    c. The rancher knew that the nervous cattle driven into the crowded pen were afraid of the cowboys.

In (a) and (b), there is an ambiguity at the italicized word. This word could be interpreted either as a main verb, taking the NP the nervous cattle as its subject, or a passive participle, functioning as the head of a reduced relative clause into the crowded pen. The latter part of the sentence provides disambiguating information in favor of the reduced relative reading. (c) is unambiguous because driven can serve only as a participle, and not as a past tense main verb. (a) and (b) differ in that move occurs more frequently as an intransitive verb, while push occurs more frequently as a transitive verb. Since the passive, reduced relative reading requires a transitive argument structure, MacDonald predicted that (a) should have more of a garden-path effect than (b). This prediction was borne out; reading times at the point of disambiguation were longer with the move-type verbs than the push-type verbs, whose reading times at the same point do not differ from the unambiguous sentence. This result shows an effect of relative frequency of argument structures on processing; it
gives evidence that speakers have knowledge of probabilities and make use of it during sentence comprehension.

The study of datives and ditransitives gives further evidence of speaker's knowledge and use of frequencies. The results of the study show that speakers make a choice between these constructions by taking into consideration the frequency to use each of the constructions with particular verb subclasses and in particular pragmatic and social contexts. This results in the likelihood of using one construction over the other in a given context and the systematic variation across speakers in their use of the constructions.

The second reason for the inclusion of probabilities in the speaker's linguistic knowledge involves the existence of probabilities on many levels of representation of grammar. Bod et al. (2003) argued that probabilities permeate the linguistic system. For example, the use of phonemes and allophones involves probabilities. Learning phonemes and their allophonic variants requires recognizing the probability of using each variant in a specific environment. Similarly, probabilities occur at the word level. MacDonald's study above shows that verbs vary in the frequency with which they take different argument structures; the probability that a given verb takes various argument structures affects sentence processing and ambiguity resolution.

The study of dative and ditransitive argument structures demonstrates that probabilities also exist on the level of sentence structure. As mentioned previously, when making a choice of a construction, speakers are concerned with the frequency of each variant with particular verb subclasses and in different pragmatic and social contexts.
Therefore, it can be concluded that interactions of different types of properties and probabilities should be considered as essential components of linguistic knowledge. As for the interactions, the observation that there is no clear distinction between denotational meanings and pragmatic/social meanings implies that both the linguistic properties and also pragmatic and social properties should constitute the speaker's linguistic competence. And since the selection of the right variant is usually influenced by the interaction of all these properties, this suggests that interactions should be included as parts of linguistic knowledge. With respect to probabilities, two main reasons support the inclusion of probabilistic constraints in linguistic knowledge. First, there is evidence that speakers learn and are influenced by probabilities in their use of language. Second, probabilities can be found in many levels of representation. The study of dative and ditransitive constructions presents empirical evidence for this whole argument. It demonstrates that the choice between the constructions is influenced by the interplay of linguistic, pragmatic, and social properties. Moreover, the study argues that speakers are sensitive to relative tendencies to use the variants. All these suggest that interactions and probabilities are essential components of speakers' linguistic knowledge.

6.3 Conclusion

In this chapter, I have considered the interaction of different types of properties and the inclusion of interactions and probabilities in linguistic knowledge in light of the results presented in Chapters 3, 4, and 5. My goals are to show that (1) different types of properties interact: the presence of a certain property of a construction is motivated by another property associated with that construction, and different properties
simultaneously influence the choice of one construction over another; and (2) speakers need knowledge about interactions and probabilities as essential parts of their linguistic knowledge when making a choice between alternating argument structure constructions.

Traditional studies often separate linguistic properties (e.g., meaning and distribution) from other types of properties (e.g., pragmatic and social meanings) and consider only the former properties as components of linguistic competence. Accordingly, most works on argument structure concentrate on one type of properties, and overlook the question of whether and how different types of factors interact with each other.

The results of this dissertation suggest that there is in fact no clear-cut boundary between various factors. All linguistic, pragmatic, and social properties contribute to the representation of a construction, and all constitute the speaker's linguistic knowledge. Speakers have the ability to pick up on all the properties associated with a construction. Moreover, they rely on the interaction of these properties when choosing the right construction. Thus, the present study shows that narrowing down the distinction between linguistic, pragmatic, and social types of factors will give us a better understanding of argument structure constructions and the notion of linguistic knowledge.

The results of this dissertation support the usage-based model of grammar (Langacker 1987, 1988), in which the relation between grammar and usage is direct. The grammar directly licenses usage events, and usage events directly influence the form of the grammar. Thus, grammar emerges as an inherently dynamic phenomenon,
"shaped in accordance with a speaker's previous experience and...continually adapted to accommodate changing experiential patterns" (Langacker 1987:380). Accordingly, grammar does not comprise only conventional units and categorical rules of language. Instead it is understood as "a complex network of forms" (Kemmer and Israel 1994:165), which includes linguistic and non-linguistic features, and also extra aspects of knowledge learned from experiencing language in actual context, i.e., interactions and probabilities. All of these constitute linguistic competence and simultaneously influence the speaker's choice of a construction. Thus, which construction is selected depends on the interaction of different types of factors and the relative probability associated with each alternating linguistic units.

However, this dissertation has certain limitations, which suggest directions for future research. First, one remark pointed out from the results of grammaticality judgments is that the ratings of dative sentences were unusually low. I suggested in Chapter 3 that such low ratings may be due to the fact that Thai is a pro-drop language, in which triadic verbs tend to drop one or more of their arguments. This suggestion was supported by an analysis of frequencies of a number of triadic verbs when they occurred with two overt objects versus when they occurred with one or no overt objects. However, the analysis is intended to give a rough idea of how NP omission may affect the dative ratings. It should be supplemented by a study which examines carefully whether a verb is triadic and contains an omitted argument, or whether the verb is not used in the triadic pattern and hence does not require the presence of two overt objects.
Second, the hypothesis underlying my experiment of description selection was based on the semantic difference between English dative and ditransitive constructions. Since the Thai constructions are different from English in several respects, the result that there is no path-possession contrast between the constructions in Thai is not very surprising. Still, this does not mean that Thai datives and ditransitives share exactly the same meaning. Studies which explore other aspects of the semantic differences may give an interesting perspective on the dative-ditransitive alternation in Thai.

Third, the data of the present study are from four sources: an experiment on grammaticality judgments, an experiment on description selection, a corpus, and web-boards. Data from these sources have been used to analyze different factors. A problem that arises is that certain factors cannot be easily compared and analyzed together since they come from different sources (e.g., sex of speakers and register, age of speakers and heaviness). The overall pattern of interactions among different factors might become clearer if all factors were from the same source of data.

Fourth, the corpus and web-board study looks at only one semantic subclass, i.e., verbs that inherently signify acts of giving. In order to clearly demonstrate the effects of pragmatic and social factors and their interaction with verb subclasses, a study should include several subclasses in its analysis.

Moreover, the study of syntactic variation with extensive data including diachronic development of linguistic units may reveal language change in progress (e.g., Rickford et al. 1995). Due to the limited period of data collection and the limited amount of data, the present work could not capture, if it exists, any tendency of change that is going on in the use of the dative and ditransitive constructions. It is interesting
to see whether variation in the use of the constructions has anything to do with language change.

Finally, the present study argues that probabilistic constraints should be included in linguistic knowledge, just like categorical rules, which have traditionally been considered as essential components of linguistic competence. However, the study does not focus on differences between these two types of constraints. Examination in greater detail of how they are similar and different may lead to a clear idea of their boundaries and roles in the speaker’s knowledge and use of language.
APPENDIX A: IPA FONTS

The following orthographic system is used to represent Thai phonemic transcription throughout the study. These symbols do not represent a definite analysis of the phonemic system of the language, but serve only as a reference for the transcription of the data in this study. There are 21 consonants, 9 vowels, 3 diphthongs, and 5 tones in the Thai orthography.

Consonants:

<table>
<thead>
<tr>
<th></th>
<th>Bilabial</th>
<th>Labiodental</th>
<th>Alveolar</th>
<th>Palatal</th>
<th>Velar</th>
<th>Glottal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voiced unaspirated stops</td>
<td>b</td>
<td>d</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voiceless unaspirated stops</td>
<td>p</td>
<td>t</td>
<td>c</td>
<td>k</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>Voiceless aspirated stops</td>
<td>ph</td>
<td>th</td>
<td>ch</td>
<td>kh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fricatives</td>
<td>f</td>
<td>s</td>
<td></td>
<td>h</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nasals</td>
<td>m</td>
<td>n</td>
<td></td>
<td>η</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquids</td>
<td></td>
<td>r, l</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glides</td>
<td>w</td>
<td></td>
<td></td>
<td>y</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vowels:

<table>
<thead>
<tr>
<th></th>
<th>Front</th>
<th>Central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>i</td>
<td>y</td>
<td>u</td>
</tr>
<tr>
<td>Mid</td>
<td>e</td>
<td>ø</td>
<td>o</td>
</tr>
<tr>
<td>Low</td>
<td>æ</td>
<td>a</td>
<td>ø</td>
</tr>
</tbody>
</table>

Diphthongs:
ia, yo, ua

Tones:
Mid unmarked
Low
Falling`
High`
Rising`
APPENDIX B: TEST SENTENCES IN THE EXPERIMENT

GRAMMATICALITY JUDGMENTS

(order as appeared in List 1)

Thai sentences

1. ได้รับหนังสือ
2. ได้รับบันทึก
3. ได้รับหนังสือเพื่อ
4. ได้รับหนังสือ
5. ได้รับหนังสือ
6. ได้รับหนังสือ
7. ได้รับหนังสือ
8. ได้รับหนังสือ
9. ได้รับหนังสือ
10. ได้รับหนังสือ
11. ได้รับหนังสือ
12. ได้รับหนังสือ
13. ได้รับหนังสือ
14. ได้รับหนังสือ
15. ได้รับหนังสือ
16. ได้รับหนังสือ
17. ได้รับหนังสือ
18. ได้รับหนังสือ
19. ได้รับหนังสือ
20. ได้รับหนังสือ
21. ได้รับหนังสือ
22. ได้รับหนังสือ
23. ได้รับหนังสือ
24. ได้รับหนังสือ
25. ได้รับหนังสือ
26. ได้รับหนังสือ
27. ได้รับหนังสือ
28. ได้รับหนังสือ
29. ได้รับหนังสือ
30. ได้รับหนังสือ
31. ได้รับหนังสือ
32. ได้รับหนังสือ
33. ได้รับหนังสือ
34. ได้รับหนังสือ

English equivalents*

1. Dang gave me a letter.
2. Dang consulted this matter to me.
3. Dang threw that book to me.
4. Dang arranged me these flowers.
5. Dang sent this letter to me.
6. Dang smuggled me these watches.
7. Dang brought the book to me.
8. Dang drew this picture to me.
9. The boss assigned his staff a new project.
10. Dang washed me this shirt.
11. Dang taught me math.
12. Dang chose this book to me.
13. Dang emailed me the good news.
14. Dang asserted the good news to me.
15. Dang knitted a sweater to me.
16. Dang whispered me the good news.
17. Dang ordered this drink to me.
18. Dang pulled that box to me.
19. Dang returned the book to me.
20. Dang consulted me this matter.
21. Dang tossed me that ball.
22. Dang arranged these flowers to me.
23. Dang mailed this letter to me.
24. Dang stole these watches to me.
25. Dang brought me the book.
26. Dang sang me this song.
27. The company guaranteed an uncharged repair to customers.
28. Dang fixed me this radio.
29. Dang told the way to the library to me.
30. Dang picked me this book.
31. Dang faxed the good news to me.
32. Dang confirmed the good news to me.
33. Dang poured me this drink.
34. Dang shouted the good news to me.
35. Dang ordered me this drink.
36. Dang lifted that box to me.
37. Dang sold me this book.
38. Dang debated this matter to me.
39. Dang threw me that book.
40. Dang placed these flowers to me.
41. Dang sent me this letter.
42. Dang smuggled these watches to me.
43. Dang took the book to me.
44. Dang drew me this picture.
45. Dang bequeathed his son one million.
46. Dang held this book to me.
47. Dang reported the news to his boss.
48. Dang chose me this book.
49. Dang telephoned me the good news.
50. Dang confirmed me the good news.
51. Dang made a cake to me.
52. Dang whispered the good news to me.
53. Dang bought me this drink.
54. Dang hauled that box to me.
55. Dang gave the letter to me.
56. Dang debated me this matter.
57. Dang tossed that ball to me.
58. The boss assigned a new project to his staff.
59. Dang fixed this radio to me.
60. Dang reported his boss the news.
61. Dang picked this book to me.
62. Dang emailed the good news to me.
63. Dang asserted me the good news.
64. Dang knitted me a sweater.
65. Dang shouted me the good news.
66. Dang found this apartment to me.
67. Dang sold this book to me.
74. แห่งศรีจันทร์แก่ล้าน
Dang kicked that ball to me.
75. แห่งศรีจันทร์แก่ล้านแก่ลูกชาย
Dang bequeathed one million to his son.
76. แห่งศรีจันทร์แก่ล้าน
Dang washed this shirt to me.
77. แห่งศรีจันทร์แก่ล้านแก่ลูกชาย
Dang told me the way to the library.
78. แห่งศรีจันทร์แก่ล้าน
Dang telephones the good news to me.
79. แห่งศรีจันทร์แก่ล้าน
Dang made me a cake.
80. แห่งราชินีภูมินีดี
Dang found me this apartment.
81. แห่งราชินีภูมินีดี
Dang hauled me that box.
82. แห่งราชินีภูมินีดี
Dang returned me the book.
83. แห่งราชินีภูมินีดี
Dang kicked me that ball.
84. บริษัทประกันชีวิตศรีลูกค้า
The company guaranteed customers an uncharged repair.
85. แห่งราชินีภูมินีดี
Dang held me this book.
86. แห่งราชินีภูมินีดี
Dang taught math to me.
87. แห่งราชินีภูมินีดี
Dang faxed me the good news.
88. แห่งราชินีภูมินีดี
Dang poured this drink to me.
89. แห่งราชินีภูมินีดีแก่ลูกชาย
Dang bought this drink to me.
90. แห่งราชินีภูมินีดีแก่ลูกชาย
Dang pulled me that box.

*The English translation is intended to reflect the structure of the Thai sentences.
## APPENDIX C: TEST SENTENCES IN THE EXPERIMENT

**DESCRIPTION SELECTION**

*(form and order as appeared in List 1)*

<table>
<thead>
<tr>
<th>Sentences</th>
<th>Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. น้ำทองสำริดเร็วช้านั้นแล้วไม่ได้แล้ว ‘Nam sold Dang that watch.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>2. ดินตื้นเสียกันว่าจะชี้แล้ว ‘Lin returned Jip the sweater.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>3. ข้ารัฐญาคองส์ร่ายกรงเสียดีอกกร้า ‘Chai donated toys to the orphanage.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>4. จ้างให้เจิ้งผู้ป่วยนี้มั่นใจมากยิ่งขึ้น ‘Ja gave her sister a new-year gift yesterday.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>5. ครูใหญ่ผู้สอนที่ระลึกเสียกุกยาวนี้ ‘The principal presented souvenirs to those children.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>6. ยุตจ้างทำพิจารณาของทองเบ็นจิม ‘Yut paid the dorm owner rent this morning.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>7. ปริแคมสมุนไพรที่คั่นเมื่อวานนี้ ‘Prim gave out diaries to all colleagues.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>8. พนักงานแปรรูปเรื่องเต็มอุดมค่า ‘The waiter served the customer a drink.’</td>
<td>Ditransitive</td>
</tr>
<tr>
<td>9. ในหลวงพระราชทานเม็ดพืชเจ้าที่กล้าละตรอก ‘The King gave (used by King) rice seeds to farmers.’</td>
<td>Dative</td>
</tr>
<tr>
<td>10. เอกวาดยาชักฟ้ากล้าแต่กระปุกนี้ ‘Ek presented (used with monks) medicines to that monk.’</td>
<td>Dative</td>
</tr>
<tr>
<td>11. ผู้ประชุมสังเกตในปีสืบปีที่ผู้ช่วย ‘The demonstrators distributed leaflets to the crowd.’</td>
<td>Dative</td>
</tr>
<tr>
<td>12. หม่องส่งข้อเสนอผู้รู้ ‘Noi turned in the paper to the teacher.’</td>
<td>Dative</td>
</tr>
<tr>
<td>13. วิชัยฝันรายงานแพร่หัวหน้า ‘Wichai handed the report to his boss.’</td>
<td>Dative</td>
</tr>
<tr>
<td>14. วิชาภาคเอกษัตรย์ ‘Wipa handed (used with monks) food to a monk.’</td>
<td>Dative</td>
</tr>
<tr>
<td>15. นิทรรศน์เชิญถ้ำแม่แคลอมพิลิวด ‘Nat fed new information into the computer.’</td>
<td>Dative</td>
</tr>
<tr>
<td>16. เจ้าชายทรงประสานเครื่องอาญังแผ่ผู้ชนะ ‘The prince granted a gold medal to the winner.’</td>
<td>Dative</td>
</tr>
</tbody>
</table>
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