

The Effect of ‘Heavy’ Recipient on the Ditransitive Constructions in Five Languages

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Abstract: *The study of ditransitive constructions often focuses on factors that influence their encoding, with the "end-weight" principle playing a key role in organizing informational structure. "End-weight" refers to "a tendency to reserve the final position for the more complex parts of a clause or sentence". This study delves into the effects of the recipient's heavy weight on the encoding of ditransitive patterns in five languages, aiming to uncover both similarities and differences. Our findings indicate that the recipient's heavy weight significantly influences the encoding of ditransitive patterns in Mandarin and English. In contrast, Cantonese, Japanese, and German consistently maintain their canonical patterns regardless of the recipient's heavy weight, running counter to the end-weight principle. These insights significantly enhance our typological understanding of ditransitive constructions. Future research should focus on empirical and theoretical exploration to elucidate the motivations behind these linguistic differences.*

Keywords: Ditransitive construction; Recipient weight; Construction grammar.

1. INTRODUCTION

A ditransitive construction is defined as a construction consisting of a (ditransitive) verb, an agent argument (A), a recipient-like argument (R), and a theme argument (T) [1]. As a universal linguistic phenomenon, ditransitive constructions have been studied extensively from different perspectives. In different languages, these constructions are distinguished morphosyntactically by several strategies: nominal marking, which involves the use of case markers to indicate the roles of the arguments; verbal agreement, where the verb morphologically agrees with one or more of the arguments; prepositional marking, which employs prepositions to delineate argument roles; and word order, which relies on the order of arguments to convey their grammatical functions [1]. Cross-linguistically, ditransitive constructions are also characterized by semantic-pragmatic features including definiteness, animacy, discourse-accessibility, weight and pronominality [2-3]. These features add a dynamic quality to the actual use of ditransitive constructions, resulting in varying degree of cross-linguistic variation.

In this study, we specifically examine one nuanced aspect of ditransitive constructions in Mandarin: the effect of the heavy recipient on the encoding of ditransitive patterns. We make a comparative study between Mandarin and equivalent constructions in Cantonese, English, German, and Japanese, aiming to answer the following two questions:

- (1) What are the effects of a heavy recipient on ditransitive constructions in the five languages?
- (2) What similarities and differences exist among five languages?

After a brief introduction in Section 1, the rest of the article is structured as follows: Section 2 presents an introduction to typological features of the five languages; Section 3 outlines the methods of data collection and the limitation of the method; Section 4 investigates the effects of a heavy recipient on ditransitive constructions in Mandarin and the other four languages. The final section concludes the study. An appendix with a list of abbreviations is attached below the conclusion.

2. TYPOLOGICAL FEATURES OF FIVE LANGUAGES

2.1 Mandarin

Unlike Japanese and German, Mandarin does not employ case marking with subjects or objects. The prototypical word order for double object construction (DOC) in Mandarin follows the pattern "S + V + OR + OT" [4], as

shown in example (1). Prepositional object constructions (POC) often use the preposition *gěi* meaning ‘to give’ as illustrated in example (2) [5].

Example (1): S+V+OR+OT

我	送	张三	一本书
wǒ	sòng	zhāngsān	yī-běn shū.
I	send	Zhangsan	one-clf book

‘I send Lisi a book.’ (Mandarin; personal knowledge)

Example (2): S+V+OT + *gěi* +OR

我	送	一本书	给	张三
wǒ	sòng	yī-běn shū	gěi	zhāngsān
I	send	one-clf book	to	Zhangsan

‘I send a book to Zhangsan.’ (Mandarin; personal knowledge)

In addition to the standard ditransitive patterns outlined above, Mandarin also allows for variations in the ordering of the theme and recipient arguments [6]. The following examples showcase some of these alternative constructions.

Example (3): S+ OT+V+ OR

我	那本书	送了	张三
wǒ	nà-běn shū	song-le	zhāngsān
I	that-clf book	send-pfv	Zhangsan

‘I sent Lisi that book.’ (Mandarin; personal knowledge)

Example (4): S+ *gěi*+ OR+V+ OT

我	给 张三	送了	一本书
wǒ	gěi zhāngsān	song-le	yī-běn shū
I	to Zhangsan	give-pfv	one-clf book

‘I sent a book to Lisi.’ (Mandarin; personal knowledge)

2.2 Cantonese

Cantonese and Mandarin exhibit fundamental differences in pronunciation, dramatic disparities in vocabularies, and minor divergencies in grammar [7]. Both languages typically lack case-marking and agreement morphology. Among the few grammatical distinctions, word order is the key point of divergence and has garnered considerable scholarly attention. In Mandarin, the ditransitive construction commonly follows an indirect object (IO) preceding a direct object (DO) pattern. In Cantonese, DOC is exhibited in two notable ways. The "give-construction" in Cantonese uniquely demonstrates a "theme-recipient" order, distinguishing it from other ditransitive patterns. Furthermore, the range of verbs occurring in DOC are rather limited, including verbs like *bei* ‘give’, *fat* ‘fine’, *gaau* ‘teach’, *man* ‘ask’ etc. [8]. Illustrative examples are provided below.

Example (5): give + OT + OR

ngo	bei-zo	bun syu	ngo gaaze
I	give-pfv	clf book	1sg elder.sister

‘I gave my elder sister the book.’ [8]

Example (6): teach + OR + OT

ngo	gaau	siupangjau	pouhtungwa
I	teach	children	mandarin

‘I teach children Mandarin.’ [8]

Building on the discussion of DOC in Cantonese, it is important to note that POC also plays a role in the language’s grammar. However, the verbs that appear in DOC are not universally applicable in POC. Specifically, only a

selection of verbs such as dai ‘pass’, lo ‘take’, ling ‘carry’, paai ‘distribute’ etc. are used in POC [8]. In these constructions, the recipient is typically marked by "BEI", as demonstrated in the examples below. The exact grammatical status of "BEI" is subject to debate, and for the purposes of this study, it is simply denoted as "BEI".

Example (7):

ngo	cyun	bun syu	bei	keoi
I	pass	clf book	BEI	3sg

‘I pass a/the book to him/her.’ [8]

2.3 English

In English, ditransitive constructions are primarily presented through two kinds: DOC and POC. [9] In the DOC, both the theme and the recipient are expressed as unmarked noun phrases (NPs), positioned closely to the verb as shown in (8a), with the recipient generally preceding the theme. In contrast, in the POC, the recipient is typically introduced via the preposition "to", and the theme is also represented as a noun phrase like (8b). Illustrative examples of each type are shown below:

Example (8):

a. Mary	sent	Lily	the book
A		R	T
b. Mary	sent	the book	to Lily
A		T	R

2.4 German

In German ditransitive constructions, the grammatical encoding is notably distinct from that of English. German grammar emphasizes the use of case marking, specifically employing dative for the recipient and accusative for the theme in DOC [10]. This clear case marking is beneficial to the identification of the roles of each noun phrases, allowing for flexibility in word order in both POC and DOC. Furthermore, German also shows variability in its POCs, with the use of different prepositions in the POC. Some verbs require "an" in the accusative case, others "zu" in the dative case, and some accept both prepositions [11]. Examples that demonstrate these varied constructions are included for reference:

Example (9):

a: Indirect object construction (IOC)

Der Mann	schickte	seinem Bruder	ein Buch
the.nom man	sent	his.dat brother	a.acc book

‘The man sent his brother a book.’ [11]

b: Prepositional object construction (POC)

Die Mann	schickte	ein Buch	an	seinen Bruder
the.nom man	sent	a.acc book	to	his.acc brother

‘The man sent a book to his brother.’ [11]

c: Prepositional object construction (POC)

Der Mann	schickte	ein Buch	zu	seinem Bruder
the.nom man	sent	a.acc book	to	his.dat brother

‘The man sent a book to his brother.’ [11]

2.5 Japanese

In contrast to Mandarin and Cantonese, Japanese predominantly employs a specific structure in ditransitive constructions. This structure typically involves marking the recipient with the dative particle and the theme with the accusative case marker [12]. The canonical order is recipient-theme, supported by findings from [13-15], as

shown in (10 a). However, Japanese displays syntactic versatility, allowing for an alternative order of theme followed by recipient, as indicated in (10 b).

Example (10):

a:

Mary-wa	Lily-ni	hon-o	okutta
Mary-nom	Lily-dat	hon-acc	sent

‘Mary sent Lily a book.’

b:

Mary-wa	hon-o	Lily-ni	okutta
Taro-nom	book-acc	Lily-dat	sent

‘Mary sent a book to Lily.’

Table 1 below gives an overview of five languages and their basic order in ditransitive constructions.

Table 1: Different orders of R and T in SVO and SOV [16]

language	Languages	basic order type	Canonical R-T order	value
<i>Mandarian</i>	Sino-Tibetan	SVO	S V O _R O _T	mixed construction
<i>Cantonese</i>	Sino-Tibetan	SVO	S give O _T O _R ; S V O _R O _T	mixed construction
<i>English</i>	Indo-European	SVO	S V O _R O _T	mixed construction
<i>German</i>	Indo-European	SVO	S V O _R O _T	Indirect-object construction
<i>Japanese</i>	Japanese	SOV	S O _R O _T V	Indirect-object construction

3. METHOD

According to [3], the difference in length between recipient and theme was quantified as the difference between the natural logarithm of the recipient’s graphemic word count and that of the theme’s. This metric provides a standardized measure to compare the relative length of these components in the ditransitive constructions. For the sake of comparison, data were mainly sourced from literature in the five languages to ensure the reliability and credibility of data. A comparative study was conducted between Mandarin and corresponding usage of ditransitive constructions in other four languages. Although this study is limited to these languages, it offers valuable insights into ditransitive constructions. Future study is expected to expand the discussion to include a broader range of languages and conduct more empirical test.

4. RESULTS

The preceding section has highlighted that the five languages under discussion—Mandarin, Cantonese, English, German, and Japanese—display varied features in ditransitive constructions. This section aims to investigate the extent to which the heavy recipient influences the encoding of ditransitive construction across these languages. Following the end-focus principle, speakers and writers tend to place new, and hence ‘heavier’, informational elements towards the end of the clause [17]. As a result, lengthier and more complex constituents, such as a ‘heavier’ recipient, are generally placed in the final position of the sentence, except when the theme is heavier. This study aims to examine the impact of heavy recipient on the encoding of ditransitive constructions in Mandarin and to conduct a comparative analysis across Cantonese, English, German, and Japanese.

4.1 Mandarin

Example (11):

a:

我	送了	那个 去年	给 我们	上 现代汉语 的 王老师	一束 花
wǒ	sòng-le	Nàgè qù-nián	gěi wǒmén	shàng xiàndài-hànyǔ de wáng-lǎoshī	yī-shù huā

I	send-pfv	[def last-year to us	teach modern-Chinese gen	Wang-	one-clf
			teacher]R		follower

'I sent a bunch of flowers to teacher Wang who taught us Modern Chinese last year.' [18]

b:

我	送了	一束花	给	那个	去年	给我们	上	现代汉语	的	王老师
wǒ	sòng-le	yī-shù huā	gěi	nà-gè	qù-nián	gěi wǒmēn	shàng	xiàndài-hànyǔ	de	wáng-lǎoshī.
I	send-pfv	one-clf flower	to	that-clf	last-year	to us	teach	modern-Chinese gen	Wang-	teacher]R

'I sent a bunch of flowers to teacher Wang who taught us Modern Chinese last year.' [18]

Analyzed variant patterns within Mandarin ditransitive constructions [18], concluding that (11a) tends to be disfavored, while (11b) is more grammatically acceptable. Specifically, they observed that when the recipient is 'heavier'—that is, when it carries more informational weight - Mandarin exhibits a strong preference for POC as opposed to DOC [19]. Reached the same conclusion. They adopted mixed-effects logistic model, showing that when the recipient is longer than the theme, POC is preferred.

4.2 Cantonese

Contents that in Cantonese ditransitive constructions [8], the weight of the recipient does not significantly influence the post-verbal argument structure. Instead, the verb used, such as "give" or others plays a key role in determining the recipient's position. As previously mentioned, the prototypical structure for the verb bei (give) follows the pattern: S+give+OT+OR. Consequently, an increase in the recipient's weight does not automatically lead to a change in this sequence, as illustrated in example(12a). However, the construction may be restructured into a prepositional object construction with the proposition bei as demonstrated in (12b). In contrast, when the theme carries more information weight in the give ditransitive construction, it usually occupies the clause's final position, overriding the canonical order and transforming into S+give+OR+OT. For other verbs in ditransitive constructs, when the recipient carries more weight, the syntax rigidly adheres to the canonical S+V+OR+OT pattern, regardless of the recipient's weight, as shown in (12c). This consistency suggests that the DOC construction in Cantonese does not transform into a POC due to an increase in the weight of the recipient.

Example (12):

a:

ngo	bei-zo	bun	syu	go	go	ngaamngaam	haang	jap	lai	ge	leoizai
I	give-pfv	clf	book	that	clf	just	walk	enter	come	gen	girl

'I gave a book to the girl who just walked in.' [8]

b:

ngo	bei-zo	bun	syu	bei	go	go	ngaamngaam	haang	jap	lai	ge	leoizai
I	give-pfv	clf	book	BEI	that	clf	just	walk	enter	come	gen	girl

'I gave a book to the girl who just walked in.' [8]

c:

ngo	gaau	go	go	ngaamngaam	haang	jap	lai	ge	leoizai	honjyu
I	teach	rel	clf	just	walk	enter	come	gen	girl	Chinese

'I teach the girl who just walked in Chinese.' [8]

4.3 English

Factors predicting the encoding of ditransitive construction in English have been extensively studied in English. [20-23] Recent advancements in corpus analysis tools have enabled a more granular examination of these factors, particularly regarding the alternation between ditransitive patterns [24]. Utilized linear regression modeling to analyze English data, uncovering a pronounced preference for POC when the recipient is more lexically 'heavier' than the theme, thus supporting the end-weight principle. This finding is in line with previous studies by [2] and [23]. However, the influence of argument weight on construction choice can vary with different English dialects and other linguistic constraints [25]. Observed that the rise of the POC is partly due to its ability to reduce argument ambiguity, as the use of a preposition identifies the indirect object's role. Consequently, when the recipient phrase

is lengthier, a more concise expression introduced first is often preferred. The following examples from English illustrate this tendency.

Example (13):

In 1987, I founded the prestigious First Turkey of the Christmas Season award and

gave [it] to [the British banker who had lent (and lost) 500,000 to a penniless student]

T R

for him to play stock market futures. [19]

4.4 German

Examined the correlation between the length of constituents and their ordering within German ditransitive constructions [26]. Their study reveals that when the recipient is more lexically longer than the theme, there is no significant preference for the theme-recipient order. In contrast, the recipient-theme sequence tends to be favored when the theme is lexically longer than the recipient. However, it's important to note that these tendencies are based on probabilities rather than being absolute rules. Examples illustrating these patterns are provided below:

Example (14):

a:

Die Stadt Wolfsburg	will	[das Grundstück]	<an einen Privatinvestor>	
the city Wolfsburg.nom	want.prs.3sg	the property.acc	to a private investor.acc	

geben	der dort 23 Wohnungen	in Stadtvillen bauen will
give.inf	who there 23 flats	in urban villas build wants to

'The city of Wolfsburg wants to give the property to a private investor who intends to build 23. Flats in urban villas there.' [26]

On the contrary, when the theme is longer than the recipient, it is encoded as recipient-theme order.

Der Besuch in Schweden	hat	< ihm >
the visit in Sweden.nom	have.prs.3sg	he.dat

b:

[Auftrieb und Energie]	gegeben	[dranzubleiben]
boost and energy.acc	give.ptcp	hold on.inf

'The visit in Sweden has given him a boost and the energy to continue his efforts.' [26]

4.5 Japanese

The recipient-theme sequence is recognized as the canonical order in ditransitive constructions in Japanese. Therefore, the influence of the recipient's weight on this conventional order requires further investigation [27]. Observed that in Japanese, longer phrases are often positioned before shorter ones, sometimes even leading to a reordering that departs from the canonical pattern. This observation stands in contrast to English preferences and the general "end-weight" principle observed in other languages [28]. The following example shows that in Japanese ditransitive constructions, when the recipient is lengthier than the theme, no instance of sentence scrambling is observed [29]. This suggests that the presence of a 'heavier' recipient does not significantly alter the canonical recipient-theme order within these constructions.

Example (15):

a:

watashi-wa	kyonen-no	kurasu-de	ichiban seiseki-ga	yoka-tta gakusei-ni	sono hon-o	age-mashita
I-nom	last year-gen	class-loc	the best scores-nom	good-pfv student-dat	that book-acc	give-pfv

'I gave that book to the student who had the best grades in last year's class.' [29]

4.6 Interim summary

This section has examined the impact of a lexically ‘heavy’ recipient on the selection and grammatical encoding of ditransitive constructions across five languages. As these languages each demonstrate unique canonical orders for ditransitive constructions, their responses to recipient ‘heaviness’ vary. The table below presents a comparative overview of these variations.

Table 2: A summary of heavy recipient on the canonical order of ditransitive constructions in five languages

Languages	Canonical order	Heavy recipient	End-weight principle
Mandarin	S V OR OT	S V OT Prep. OR	yes
Cantonese	S V OR OT	S V OR OT	no
	S give OT OR	S give OT OR	yes
English	S V OR OT	S V OT Prep. OR	yes
German	S V OR OT	S V OR OT	no
Japanese	S OR OT V	S OR OT V	no

5. CONCLUSION

Although ditransitive constructions are widely found across languages, this study has uncovered significant variations in the heavy weight of the recipient on the encoding of ditransitive constructions. It is clear that end-weight principle is not universally applicable in five languages. Mandarin and English follow the end-weight principle. In contrast, Cantonese, German, and Japanese fail to follow the end-weight principle. There is a myriad of factors at play in leading to differences in ditransitive constructions among five languages. Future study, on the one hand, should incorporate more languages under investigating, so as to provide a more comprehensive picture about the typological feature of ditransitive construction. On the other hand, the empirical and theoretical exploration to elucidate the motivations behind these linguistic differences is required.

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