

A Study on the co-occurrence constraints of the "to omou" construction

Chaoyu Lin

Kyoto University of Foreign Studies, Kyoto, Japan

lincyoyu@gmail.com

Abstract. This study examines the "to + omo-u" construction and investigates the co-occurrence conditions among its internal components on the basis of corpus data. Unlike previous studies that focused solely on the formal analysis of case particles or tense forms, this paper approaches the issue from the perspective of the construction as a whole, treating such elements as case particles, predicate types, and verb forms as analytical variables in order to explore their combinatory patterns in actual language use. Through a comparative analysis of the two constructions "Noun + o + V + to + omo-u." and "Noun + o + V + to + omot-ta.", the study finds that the former exhibits a relatively high degree of freedom in verb selection, whereas the latter shows a clear tendency to co-occur with transitive verbs characterized by object orientation and resultativity, displaying a markedly concentrated distribution pattern. Previous studies have shown that "to + omo-u" primarily functions to express the speaker's attitude, while "to + omot-ta" emphasizes the confirmation and narration of past cognitive activity. Based on these findings, this paper argues that the elements within the "to + omo-u" construction do not combine freely; rather, their co-occurrence is constrained by semantic and pragmatic factors. More specifically, a correspondence can be observed among the objectivity marked by "o", the unrealized nature expressed by the volitional form, and the retrospective memory-evoking function represented by "to + omot-ta". This correspondence, in turn, influences verb selection and the naturalness of sentences. From the perspective of the interaction between constructions and lexical items, this study reveals the collocational mechanisms and co-occurrence patterns within the "to + omo-u" construction and provides a new perspective for understanding the usage of cognitive verb constructions in Japanese.

Keywords: co-occurrence construction, cognitive verbs, modality

1. Introduction

In contemporary society, where globalization and informatization continue to advance, the importance of accurately grasping actual language use has become increasingly prominent. In Japanese in particular, the cognitive verb "omo-" is a highly frequent verb in everyday communication, exhibiting diverse syntactic behaviors and semantic functions. Masuoka Takashi [1] defines structures containing verbs such as "omo-" and "kangaer-" as "cognitive verb constructions" and points out that such constructions play an important role in Japanese.

Among cognitive verb constructions, the "to omo-" structure containing a quoted clause is widely used as an important form for expressing the speaker's subjective judgment and emotional evaluation. However, the relationship between the case marking within the quoted clause and the tense and aspect of "omo-" has not yet been sufficiently clarified. For example, Takahashi [2] points out that differences in case marking and tense in "omo-" constructions with quoted clauses can affect sentence acceptability, yet the reasons for these differences remain unclear.

Against this background, the present study takes the cognitive verb construction "omo-" with quoted clauses as its object of investigation and aims to clarify the co-occurrence relationship between case marking within the quoted clause and the tense of "omo-". More specifically, it examines how the distinction between the case particles "wa" and "o", together with differences in the tense of "omo-", influences constructional co-occurrence.

Using the "to omo-" construction as its research target, this study analyzes corpus data in order to investigate the co-occurrence conditions among the internal elements of the construction. Unlike formal analyses that focus exclusively on case particles or tense, this paper adopts a corpus-based approach and pays particular attention to the interaction among word classes, verb forms, and constructional semantics, examining the combinatory patterns of these elements in actual language use. By analyzing the distribution and co-occurrence patterns of different types of elements, this study seeks to demonstrate that the "to omo-" construction is not a freely assembled structure, but rather a co-occurrence construction constrained by semantic and pragmatic factors.

2. Previous studies and research questions

In discussing the meanings and usages of the "omo-" and "kangaer-" constructions containing quoted clauses, Takahashi [2] pointed out that differences in case marking and tense may affect sentence acceptability. The following examples were presented [2]:

- (1) a 太郎君のアイデアは花子さんのアイデアより優れていると思う。
- b?太郎君のアイデアを花子さんのアイデアより優れていると思う。
- c 太郎君のアイデアを花子さんのアイデアより優れていると思った。

To clarify the characteristics of this construction and facilitate understanding for non-native learners of Japanese, the present study provides grammatical annotation for these examples in accordance with the Leipzig Glossing Rules.

- (1a) 太郎君のアイデアは花子さんのアイデアより優れていると思う。
tarō-kun-no aidea-wa hanako-san-no aidea-yori sugure-te iru to omou
Taro-HON-gen idea-top Hanako-HON-gen idea-than excellent-te be quot think-prs
'I think Taro's idea is better than Hanako's'.
- (1b) ?太郎君のアイデアを花子さんのアイデアより優れていると思う。
tarō-kun-no aidea-o hanako-san-no aidea-yori sugure-te iru to omou
Taro-HON-gen idea-acc Hanako-HON-gen idea-than excellent-te be quot think-prs
'I think Taro's idea to be better than Hanako's'.
- (1c) 太郎君のアイデアを花子さんのアイデアより優れていると思った。
tarō-kun-no aidea-o hanako-san-no aidea-yori sugure-te iru to omot-ta
Taro-HON-gen idea-acc Hanako-HON-gen idea-than excellent-te be quot think-pst

'I thought Taro's idea was better than Hanako's'.¹

Through the above grammatical annotation, the "to omo-" construction can be formally divided into several key elements, including noun phrases, case particles, the predicate within the quoted clause, and the cognitive verb "omo-". Such formal decomposition not only clarifies the internal structure of the construction, but also provides operational units for subsequent co-occurrence analysis.

Based on this structural classification, the following analysis examines the combinations among different elements, focusing particularly on the co-occurrence distributions of case particles, predicate types, and verb forms in actual corpus data, in order to determine whether systematic collocational relationships exist among these elements.

Although all of the above sentences are grammatically acceptable, sentence (1b) sounds less natural than (1a) and (1c). Takahashi [2] did not provide a clear explanation for this phenomenon, and the underlying reason therefore remains unresolved. Accordingly, the present study takes Example (1) as a starting point for investigating the co-occurrence conditions of the "X + to omo-" structure.

A closer examination of Example (1) reveals that (1a) and (1b) constitute a minimal pair, differing only in the case marking of "aidea" ("wa" versus "o"). Likewise, (1b) and (1c) also form a minimal pair, differing only in the tense of the verb "omou" (present versus past). This suggests that, within this construction, the case marking inside the quoted clause and the tense of the main-clause verb are important factors influencing sentence naturalness.

Furthermore, although both (1a) and (1c) are relatively natural sentences, the naturalness of (1c) is slightly lower than that of (1a). If the low naturalness of (1b) is attributed to the difference in case marking, then the improved naturalness of (1c) relative to (1b) may be associated with the change in tense. As shown in Table 1, this indicates that case marking and tense are not mutually independent, but may instead exhibit a certain co-occurrence relationship.

Table 1. Degrees of naturalness corresponding to different elements in example (1)

	Case Marking of 「アイデア」	Tense of 「思う」	Degree of Naturalness
1a	は	present	highest
1b	を	present	lowest
1c	を	past	medium

Based on the issues outlined above, the present study takes these observations as its point of departure and aims to investigate the co-occurrence relationship between case marking and the tense of "omo-" in cognitive verb constructions containing quoted clauses.

In order to examine this relationship more systematically, the structure in Example (1) is further abstracted. The case markers (「は」 「を」), adjective types (イ-adjectives and ナ-adjectives), and the tense of the main-clause verb 「思う」 (「思う」 and 「思った」) are established as the principal variables. On the basis of combinations among these variables, the following eight search patterns are proposed:

(2)

- 1) Noun + は + イ-adjective + と思う.
- 2) Noun + は + イ-adjective + と思った.
- 3) Noun + を + イ-adjective + と思う.

¹ All English translations of Japanese examples in this paper are provided by the author.

- 4) Noun + を + イ-adjective + と思った.
- 5) Noun + は + ナ-adjective + と思う.
- 6) Noun + は + ナ-adjective + 思った.
- 7) Noun + を + ナ-adjective + と思う.
- 8) Noun + を + ナ-adjective + 思った.

By controlling these variables and conducting corpus searches, it is possible to systematically examine how differences in case marking, adjective type, and tense influence distributional tendencies in actual usage, as shown in Tables 2 and 3.

Table 2. Frequencies of 「Noun+wa+i-adj+to+omou./ omot-ta.」 「Noun+o+i-adj+to+omou./ omot-ta.」

tense case	to+omou.	to+omot-ta.	total
o	1	12	13
wa	53	12	65

Table 3. Frequencies of 「Noun+wa+na-adj+to+omou./ omot-ta.」 「Noun+o+na-adj+to+omou./ omot-ta.」

tense case	to+omou.	to+omot-ta.	total
o	1	0	1
wa	2	0	2

First, as shown in Table 3, constructions involving na-adjectives occur at an extremely low frequency overall. Therefore, in order to clarify the focus of analysis, patterns containing na-adjectives are excluded from the subsequent investigation.

Second, Table 2 shows that the structure "Noun + wa + i-adjective + to omo-u." exhibits a relatively high frequency, indicating a high degree of naturalness in actual language use. In contrast, "Noun + o + i-adjective + to omo-u." appears only once, suggesting that even within the same structural configuration, differences in case marking significantly affect usage tendencies.

In addition, "Noun + wa + i-adjective + to omot-ta." occurs relatively frequently (12 instances), which is clearly higher than "Noun + o + i-adjective + to omo-u." (1 instance), indicating that tense differences also have a significant impact on co-occurrence tendencies.

Taken together, these results suggest that case marking and tense are not independent of each other, but instead form an interrelated co-occurrence pattern. This finding is consistent with the acceptability differences pointed out by Takahashi [2], indicating that the corpus-based analysis in this study partially supports previous observations.

A chi-square test was conducted, and the results indicate that the differences are statistically significant ($\chi^2(1) = 27.733, p < 0.001$). Furthermore, the effect size ϕ was calculated as 0.596, which constitutes a large effect size.

These results demonstrate a significant association among the relevant variables, supporting the hypothesis that case marking and tense jointly influence co-occurrence tendencies. Therefore, it is necessary to further investigate the relationships among these factors in greater depth.

3. Research procedure

From the perspective of Construction Grammar, basic sentence patterns are regarded as form–meaning pairings. Goldberg Adele E. [3] argues that argument structure does not arise purely from independent rules of verbs or case particles, but is instead grounded in specific verb–construction pairings. Furthermore, Croft William [4] emphasizes that high-frequency lexical items and fixed collocations reinforce particular constructions, making certain verbs and case particles more likely to co-occur. Therefore, in analysis, it is necessary not only to consider formal factors such as case marking and tense, but also to attend to the meanings and habitual collocational patterns of the nouns and adjectives involved.

Based on this understanding, the present study first fixes the target sentence pattern at a formal level, and then focuses on variations in the elements within the quoted clause—specifically, the constituents preceding "to"—in order to examine their influence on sentence naturalness. More concretely, the basic structural frame is defined as "Noun + o + X + to + omo-u / omot-ta.", where the X position is initially assigned to verbs. Future work will further extend this variable slot to include adjectives and nouns. By controlling this position, differences in the interaction between verbs and case marking can be observed.

During the analysis of verbal data, a salient tendency was observed: when verbs occur in the quoted clause, as shown in Table 4, the frequency of volitional forms ("-yo", "-o") is significantly higher than that of other verbal forms. This result suggests that, within the "to + omo-" construction, verb form selection is not randomly distributed, but is instead constrained by semantic and pragmatic factors to a certain extent.

Table 4. "Noun + o/wa + V + to + omo-u / omot-ta."

	Construction	Occurrences of volitional form	Total	Ratio (.00%)
1	Noun + o + V + to + omot-ta .	43	50	86.00%
2	Noun + o + V + to + omo-u .	21	41	51.20%
3	Noun + wa + V + to + omot-ta .	2	8	25.00%
4	Noun + wa + V + to + omo-u .	1	40	2.50%

From a semantic perspective, the "to + omo-" construction is a typical cognitive verb construction whose basic function is to express the speaker's judgment, conjecture, or intention toward a proposition. According to Chūnagon Kazuhiro [5], modality refers to the speaker's psychological attitude at the moment of utterance, while all other content belongs to propositional content. In other words, "to + omo-" expresses the speaker's attitude toward a proposition rather than the proposition itself.

Within this framework, the intentionality expressed by volitional forms clearly belongs to the domain of subjective attitude and is highly compatible with the essence of modality. Therefore, the structure combining volitional forms with "to + omo-" can be interpreted as a "recognition or confirmation of one's own intention", namely a dual-layered subjective attitude structure. This structural congruence contributes to its semantic coherence and, consequently, to its higher acceptability and frequency of use.

In addition, Chūnagon Kazuhiro [5] also notes that modality does not operate within the scope of the proposition but rather lies outside it, evaluating the proposition as a whole. This further indicates that, in the "to + omo-" construction, the semantic type of the quoted clause directly affects the realization of the higher-level modal structure. Accordingly, when volitional forms are used within the quoted clause, they more naturally align with the modal function carried by "to + omo-", thereby enhancing overall sentence naturalness.

Table 5. Distribution of volitional verbs in "Noun + o + V + to + omot-ta." and their transitivity

ID	Lexeme	Frequency	Transitivity	ID	Lexeme	Frequency	Transitivity
1	作る	7	transitive	16	楽しむ	1	transitive
2	書く	3	transitive	17	立てる	1	transitive
3	止める	3	transitive	18	売る	1	transitive
4	変える	2	transitive	19	描く	1	transitive
5	掛ける	2	transitive	20	遣る	1	transitive
6	買う	2	transitive	21	取る	1	transitive
7	為る	2	transitive	22	勧める	1	transitive
8	纏める	1	transitive	23	確かめる	1	transitive
9	出す	1	transitive	24	殺す	1	transitive
10	諦める	1	transitive	25	温める	1	transitive
11	付ける	1	transitive	26	信ずる	1	transitive
12	掴む	1	transitive	27	尋ねる	1	transitive
13	稼ぐ	1	transitive	28	押す	1	transitive
14	見付ける	1	transitive	29	言う	1	transitive
15	開ける	1	transitive				

In examining the "Noun + o + V + to + omot-ta". Construction, it was found that verbs in the quoted clause are characterized not only by a predominance of volitional forms but also by a strong tendency toward transitive verbs with clear object orientation. This phenomenon suggests that the construction tends to express intentional actions directed toward specific objects, constituting an object-centered, intentional cognitive linguistic structure.

Regarding the semantic function of "to + omot-ta", Miyazaki Kazuo [6] points out that its basic meaning lies in the "confirmation and description" of the overall past cognitive activity. Moreover, as illustrated in Example (3) [6], "to + omot-ta" does not merely denote a past mental process; rather, it also involves the construction of a relationship between cognition and reality, and in certain contexts it exhibits a property of "correspondence between cognition and reality", thereby developing a modality-like function akin to "explanatory" meaning. Based on corpus data, Examples (4) and (5) are further analyzed below.

(3) 太郎は,答えはわかっているつもりだったが,一応確かめるために尋ねた.

「子供自身よ」

「そう言うだろうと思った」(曾野綾子「太郎物語 大学編」)

Taro thought he already knew the answer, but asked just to make sure.

"The child himself".

"I thought you'd say that".

(4) 仕事に復帰したかった.だから有り金でできるだけのものを作ろうと思った.

I wanted to return to work. So I thought I would make as much as I could with the money I had.

(PB37_00001)

(5) 昭和三十二年に故郷の大阪へ.「自分の音楽を作ろうと思った.物まねじゃなく『笹田和子』が大事だったの.

In 1957, I went back to my hometown, Osaka. I thought I would create my own music. Not imitation—what mattered was "Sasada Kazuko".

(PN1d_00026)

A closer look at Examples (4) and (5) further supports the analysis above. In (4) "有り金のできるだけのものを作ろうと思った" and (5) "自分の音楽を作ろうと思った", the quoted clauses both employ the volitional form "作ろう", and the verb in question is a prototypical transitive verb with a clearly defined object orientation.

From a semantic perspective, these examples all express the intention to carry out an action directed toward a specific object. Accordingly, there is a natural semantic correspondence between the object marked by the case particle "o" and the "patient/theme" required by transitive verbs. Within this theoretical framework, the observed data can be further interpreted as follows: the volitional form inherently carries the semantic feature of "unrealized intentionality", while "to + omot-ta" serves to retrospectively confirm or report that intention. When combined, they form a retrospective expression of "an intention to act that arose at a certain point in the past".

At the same time, since such intentions are typically directed toward a specific object to be acted upon or transformed, transitive verbs with clear object orientation are preferentially selected. This semantic configuration leads to a strong co-occurrence tendency of the "Noun + o + V + to + omot-ta." construction in corpus data.

Table 6. Distribution of volitional verbs in the "Noun + o + V + to + omo-u." construction and their transitivity

ID	Lexeme	Frequency	Transitivity	ID	Lexeme	Frequency	Transitivity
1	始める	2	transitive	10	明かす	1	transitive
2	為る	2	transitive	11	遣る	1	transitive
3	続ける	2	transitive	12	入れる	1	transitive
4	残す	1	transitive	13	食べる	1	transitive
5	費やす	1	transitive	14	試みる	1	transitive
6	焚く	1	transitive	15	送る	1	transitive
7	付ける	1	transitive	16	引き締める	1	transitive
8	加える	1	transitive	17	終える	1	transitive
9	講ずる	1	transitive	18	作る	1	transitive

Table 6 shows that in the "Noun + o + V + to + omo-u." construction, verb distribution is relatively dispersed. It includes not only result-oriented transitive verbs but also process-oriented verbs expressing initiation, continuation, and trial, indicating a relatively high degree of combinatorial flexibility when expressing present or general intentions. As Example (6) illustrates, even when describing past events, the use of "to + omo-u" tends to emphasize a more experiential or immersive perspective.

(6)その時、私はコンゴの森で見たような、やさしいたき火をたこうとう。昔話のテープを聞いて、もう一人発奮した者がいた。

At that time, I thought I would make a gentle campfire like the one I had seen in the forests of the Congo. After listening to the recording of old tales, there was another person who felt inspired as well.

(LBn4_00013)

From the distributional differences between Tables 5 and 6, it is evident that "Noun + o + V + to + omot-ta." and "Noun + o + V + to + omo-u." differ markedly in verb selection patterns.

First, in the "to + omot-ta" construction, verb distribution is highly concentrated, with creation-oriented transitive verbs such as 「作る」 dominating. It also includes verbs such as 「書く」「描く」「売る」

「建てる」, all of which involve clear object manipulation. These verbs share the property of explicit object orientation and resultativity, in which the intended action is directed toward the creation or modification of a specific entity. This suggests that the "Noun + o + V + to + omot-ta." construction semantically tends to express intentions directed toward concrete objects, with "to + omot-ta" providing retrospective confirmation of such intentions.

In contrast, the "Noun + o + V + to + omo-u." construction exhibits a more dispersed distribution, including not only 「作る」 but also verbs such as 「始める」「続ける」「残す」「試みる」「終わる」, which are processual, phase-oriented, or exploratory in nature. These verbs do not center on the transformation of a single object but rather emphasize the unfolding of an action or its procedural aspect. Accordingly, this construction tends to express current or general intentions rather than retrospective accounts of completed intentional actions.

This difference can be explained in pragmatic terms. Miyazaki Kazuo [6] notes that "to + omo-u" is more likely to express present or general judgments and intentions, with relatively weak pragmatic restrictions, allowing it to combine freely with a wide range of verb types. This contrast further demonstrates that the relationship between constructions and lexical items is not random but systematically constrained by semantic and pragmatic factors. As corpus-based studies suggest, there exist stable co-occurrence preferences between verbs and constructions, which constitute an essential aspect of language use.

4. Conclusion

In summary, this study takes the "to + omo-u" construction as its research object and examines, based on corpus data, the co-occurrence distribution of its internal elements in order to clarify its collocational properties. The analysis of verb distribution reveals that different constructions do not select verbs randomly; rather, they exhibit stable co-occurrence tendencies. Specifically, in the "Noun + o + V + to + omot-ta." construction, verbs are highly concentrated in transitive verbs with clear object orientation and resultativity. In contrast, the "Noun + o + V + to + omo-u." construction shows a relatively high degree of distributional freedom, allowing broad combinations with processual or phase-oriented verbs.

This contrast indicates that the formal combination of "case particle + tense" alone is insufficient to account for differences in sentence naturalness and usage frequency. Instead, the collocational relations among internal elements of the construction constitute a crucial factor influencing language use. In other words, the "Noun + o + V + to + omo-u / omot-ta." pattern should be regarded as a co-occurrence construction with certain semantic constraints, in which systematic correspondences exist among verb semantics, object orientation, and the overall cognitive function of the construction.

On this basis, the present analysis remains preliminary. Future research should further expand the scope of investigation, not only focusing on volitional verb forms, but also systematically examining verb forms appearing in other construction types, as well as the distributional characteristics of adjectives and nouns within the quoted clause. Through a more comprehensive analysis of the relationship between different lexical categories and constructions, it will be possible to further elucidate the interaction between constructions and pragmatics in language use, and to provide a more systematic explanatory framework for the study of Japanese cognitive verb constructions.

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