

A Simple Phrase Analysis of Psychological Adverbs in Japanese*

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1 Introduction

This study examines the syntactic structure of psychological adverb (PA) constructions in Japanese. The definition of PA is provided in (1) and some examples in (2).

- (1) Definition of psychological adverbs:
Adverbial expressions that express subjective evaluations by the speaker or the experiencers in a sentence.
- (2)
 - a. John-ga hon-o omosiroku yon-da.
J-NOM book-ACC interesting read-PST
'John read the book and considered it interesting.'
 - b. John-ga sono-hanasi-o Mary-nitotte omosiroku hanasi-ta.
J-NOM the-story-ACC M-for interesting tell-PST
'John told Mary the story, and she found it interesting.'

In (2a), the PA *omorisoku* 'interesting' expresses a subjective evaluation by the matrix subject *John*. In (2b), *Mary* serves as the experiencer of *omosiroku*. This type of adverb has not received

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adequate attention in the field of theoretical linguistics. Dragana (2005) is the first to conduct a descriptive analysis of this construction, and Matsuoka (2016, 2021, 2023) and Miura (2020, 2021, 2023) have conducted syntactic research.

The central question of this paper is: What is the syntactic structure of PAs in Japanese? Matsuoka (2021, 2023) argues that PAs in Japanese have a full-fledged CP structure. In this structure, the experiencer PPs occupy Spec, TP of the PAs, and the structure involves a null operator movement to Spec, CP. However, I argue that Matsuoka's (2021, 2023) proposal encounters significant empirical and theoretical problems; therefore, a new analysis is required. I instead propose that PAs in Japanese have a simpler phrase structure, in which neither TP nor CP is projected, and that the experiencer PPs are syntactically separated from PAs and adjoined to VP.

The remainder of this paper is organized as follows. Section 2 reviews Matsuoka (2021, 2023), and Section 3 presents the empirical and theoretical problems with his proposal. Section 4 presents the proposed structure and an analysis. Finally, Section 5 discusses the implications of the proposal and the conclusions of this study.

2 Previous Studies

This section reviews Matsuoka (2021, 2023) and clarifies his proposed structure. First, Matsuoka suggests that PAs in Japanese can be negated by *nai* 'not.' Observe (3):

- (3) a. John-ga sono-ryoori-o mazuku-naku tabe-ta.
 J-NOM the-dish-ACC tasteless-NEG eat-PST
 'John ate the dish, [considering it] not tasteless.'
- b. Mary-ga purezento-o arigataku-naku uketot-ta.
 M-NOM present-ACC welcome-NEG receive-PST
 'Mary received the present, [considering it] not welcome' (Matsuoka 2021: 40)

Matsuoka (2021, 2023) assumes, based on Kishimoto (2017), that in Japanese, the negation marker *nai* 'not' serves as the head of NegP. Additionally, he follows Zanuttini (1996), who argues that the presence of NegP requires a TP. Based on this example, Matsuoka claims that PAs in Japanese have at least a TP structure.

Second, the experiencer PP of PAs can bind the self-reflexive *zibun*. *Zibun* is a subject-oriented reflexive in Japanese, and the binder of *zibun* generally qualifies as the subject, as shown in (4).

- (4) a. Tarooi-ga Hanakoj-ni zibun_i-no koto-o hanasi-ta.
 T-NOM H-DAT self-GEN thing-ACC tell-PST
 'Taro told Hanako about [him]self.'
- b. Tarooi-wa [Hanakoj-ga zibun_i-no koto-o hanasi-ta-to] it-ta.
 T-TOP H-NOM self-GEN thing-ACC tell-PST-COMP say-PST
 'Taro said that Hanako told him about [him/her]self.'

In (4a), *zibun* has only one interpretation, in which the subject *Taro* binds it, and the example is interpreted as 'Taro told Hanako about himself'. (4a) appears to have another potential binder *Hanako*, but *zibun* cannot be interpreted as referring to *Hanako* because *Hanako* is not a subject.

In (4b), *zibun* can be interpreted in two ways: One is bound by the matrix subject *Taro*, and the other by the embedded subject *Hanako*. These two interpretations are possible because both binders are subjects.

Based on this discussion, Matsuoka argues that experiencers of PAs in Japanese have the property of being syntactic subjects because they can bind *zibun*, as shown in (5).

- (5) a. Mary-ga sono otya-o Johni-nitotte [[zibun_i-ga e_j ireta] otya_j yori] oisiku ire-ta.
M-NOM that tea-ACC J-for self-NOM brew-PST tea than tasty brew-PST
'Mary brewed the tea, and John considered it tastier than the tea he brewed.'
- b. Karera-wa sono siba_i-o Johni-nitotte [[zibun_i-ga e_j enzi-ta] siba_j yori] omosiroku
they-TOP that play-ACC J-for self-NOM perform-PST play than interesting
enzita.
perform-PST
'They performed the play, and John found it more interesting than the play he performed.'
- (Matsuoka 2023: 17–18)

In each example in (5), *zibun* is bound by the experiencer of the PAs, *John*. Matsuoka claims that these data can be explained by positing that the experiencers of PAs are syntactic subjects, which generally occupy Spec, TP. Based on this discussion, Matsuoka further argues that PAs in Japanese involve a TP-structure.

Additionally, Matsuoka argues that PAs in Japanese must contain a null operator interpreted as a covert object. He suggests that the null operator is similar to the one found in object purpose clauses (OCPs) in English. For a comparison, see (6).

- (6) a. I_i bought *War and Peace*_j PRO_i to read e_j to the children. (Bach 1982: 37)
- b. David_i brought some articles_j along PRO_i to discuss e_j in class. (Whelpton 2002: 185)

The PROs in (6) are interpreted as matrix subjects. Moreover, Bach (1982) and Whelpton (2002) suggest that PRO can be controlled by indirect objects, as illustrated in (7a, b). The following two PROs are interpreted as the indirect objects: *you* and *Ruth*, respectively. Note that the subjects can also control PRO when indirect objects are present, as shown in (7c).

- (7) a. I bought you_i *War and Peace*_j PRO_i to read e_j to the children. (Bach 1982: 37)
- b. David brought Ruth_i some articles_j along PRO_i to discuss e_j in class. (Whelpton 2002: 185)
- c. David_i brought Ruth_j some articles_k along PRO_i to discuss e_k with her_j. (Whelpton 2002: 186)

PRO can have another interpretation, that is, an arbitrary interpretation, as illustrated in (8).

- (8) David brought some articles_j along PRO_x to discuss e_j amongst ourselves_x in class.
(Context: David is a teacher, and we are students in a seminar class; David will be away for one week but has supplied the materials for class the day before he leaves.)
(Whelpton 2002: 186–187, cited in Matsuoka 2023: 9)

In (8), PRO is interpreted as a group of individuals, including the speaker but excluding the subject.

Regarding the null element *e* in OCPs in English, Matsuoka (2023) follows Chomsky (1980) and Browning (1987) and suggests that the gap in the object position is created by the movement of a null operator to Spec, CP. This null operator is bound by the matrix object.

- (9) I bought *War and Peace*_i [CP Op_i PRO to read *t_i* to the children] (Matsuoka 2023: 10)

Based on this assumption, Matsuoka argues that PAs in Japanese function similarly to OCPs in English. Both sentential subjects and indirect objects can be the experiencers of the PAs. In some cases, the experiencers of PAs can be interpreted arbitrarily. Observe (10):

- (10) a. John-ga kodomotati-ni sono-hanasi-o omosiro-ku tutae-ta.
J-NOM children-DAT that-story-ACC funny tell-PST
'John told the children the story, and the children found it funny.' (Matsuoka 2023: 2)
- b. John-ga Mary-ni sono-hanasi-o nagekawasiku katat-ta.
J-NOM M-DAT that-story-ACC pitiful tell-PST
'John told Mary the story, and he or she considered it pitiful.' (Matsuoka 2023: 21)
- c. Mary-ga otya-o oisiku ire-ta.
M-NOM tea-ACC tasty brew-PST
'Mary brewed tea and some who drank it considered it tasty.' (Matsuoka 2023: 2)

In (10a), the indirect object *kodomotati-ni* 'the children' functions as the experiencer of the PA *omosiroku* 'interesting'. In (10b), the experiencer of *nagekawasiku* 'pitiful' may be construed either as the sentential subject *John* or the indirect object *Mary*. (10c) does not have an overt experiencer, but the experiencer of the PA *oisiku* 'tasty' has an arbitrary interpretation. These properties are also found in English OCPs. Matsuoka (2023) argues that OCPs in English and PAs in Japanese have the same structure because they share the same properties.

Matsuoka (2023) provides the following example as evidence of a null operator in Japanese PAs.

- (11) a. John-ga [zibun-i-nituute-no hanasi]_j-o [[[e]_j kiki-tai-to it-ta] seito_i]-nitotte e_j omosiroku]
J-NOM self-about-GEN story-ACC hear-want-COMP say-PST student-for interesting
hanasi-ta.
tell-PST
'John told the story about [him/her]self [and] the student who said (s)he wanted to hear about e [found it] funny.'
- b. Mary-ga [otagai-nituute-no hanasi]_j-o [[[e]_j kiki-tai-to itta] hutari-no kodomo_i]-nitotte e_j
M-NOM each.other-about-GEN story-ACC hear-want-COMP two-GEN children-for
natukasiku katat-ta.
nostalgic tell-PST
'Mary told the stories about each other [and] the two children who said they wanted to hear about e [felt] nostalgic [about them].'
(Matsuoka 2023: 29–30)

In the examples in (11), the reflexives *zibun* and *otagai* ‘each other’ are in the matrix clause and are bound by the experiencers of the PAs—*seito* ‘students’ and *hutari-no kodomo* ‘two children’, respectively. Additionally, Matsuoka claims that the relative clauses *kiki-tai-to itta seito* ‘students who want to hear e’ and *kiki-tai-to itta hutari-no kodomo* ‘the two children who want to hear e’ do not have overt objects, and that the null objects are interpreted as referring to the matrix objects *zibun-nituite-no hanasi* ‘the story about [him/her]self’ and *otagai-nituite-no hanasi* ‘the stories about each other’. Matsuoka argues that these properties are the same as those found in English OCPs, asserting that, like English OCPs, PAs in Japanese must involve a null operator.

Based on the observations above, Matsuoka proposes the following structure for Japanese PAs.

- (12) John-wa [VP [CP Op_i [TP [PP PRO- \emptyset /Mary-nitotte]_i [AP t_i t_j omosiro]-ku]] [VP hon-o yon-da]].

Matsuoka argues that Japanese PAs have a CP structure adjoined to VP. In this structure, the experiencers are base-generated in Spec, AP and moves to Spec, TP because they possess the properties of subjects. A nonexplicit experiencer PP is employed when an overt experiencer phrase is absent. Moreover, the null operator enters the derivation as a complement of the adjectival head before moving to Spec, CP.

In the next section, I demonstrate the problems associated with Matsuoka’s (2021, 2023) analysis. Furthermore, I argue that a new approach is urgently required.

3 The Problems of Previous Studies

This section presents examples that challenge Matsuoka’s (2021, 2023) proposal. The first problem is related to the size of the PA structure. According to Matsuoka, PAs in Japanese have a full-fledged CP structure. As we have observed in the previous section, Matsuoka argues that PAs in Japanese can be negated by *nai* ‘not’, which requires the presence of TP, suggesting that the PAs have at least a TP structure. However, PAs in Japanese actually cannot be negated. The examples in (3) sound awkward to many native Japanese speakers, and the following example with a negated PA is ungrammatical. Additionally, a single lexical item that expresses the same meaning renders the sentence acceptable.¹

- (13) John-ga sono-hanasi-o *omosiroku-naku/?tumaranaku kata-ta.
 John-NOM the-story-ACC interesting-NEG boring tell-PST
 Intended: ‘John told us the story, and we found it not interesting/boring.’

The example in (13) is acceptable with *tumaranaku* ‘boring’, but it is completely ungrammatical when *omosiroku-naku* ‘not interesting’ is present, even though *omosiroku-naku* and *tumaranaku* express the same meaning. If PAs in Japanese involve a TP structure, all the PAs must be negatable; however, contrary to what Matsuoka’s (2021, 2023) proposal predicts, negating PAs is impossible. Example (13) shows that Japanese PAs do not have a TP structure.

Additionally, Matsuoka (2021, 2023) claims that experiencer PPs of PAs in Japanese occupy Spec, TP because they behave similarly to subjects, which are generally assumed to be located in

¹ See Miura (2023) for the relevant discussion.

Spec, TP. He provides examples of anaphor binding in (5) as a piece of evidence. However, *zibun*, for example, can be bound by elements other than the subjects, and it may lack overt binders.

- (14) Zibun_i-no hatumei-ga George_i-ni bakudaina zaizan-o moratasi-ta.
 self-GEN invention-nom G-DAT big fortune-acc bring-PST
 ‘His invention brought George a big fortune.’ (Oshima 2004: 12)

In (14), *zibun* is not bound by a subject because it is embedded within the relative clause that modifies the subject. Instead, it is bound by the dative argument *George-ni*. This example demonstrates that the binder of *zibun* is not always restricted to subjects. Therefore, Matsuoka’s (2021, 2023) claim regarding the subjecthood of PA experiencers is insufficiently supported.²

The second point is regarding the size of PA structures. Matsuoka (2021, 2023) argues that PAs in Japanese have a CP structure; however, this argument again faces an empirical problem. His proposal predicts that elements requiring a clause-mate condition cannot be associated with elements within the CP structure of PAs because they are in different clauses. For example, in Japanese, a focus particle *sika* ‘only’ is assumed to require a clause-mate condition with negation (cf. Muraki 1978). When the negation marker *nai* ‘not’ and an element with *sika* are in the same clause, *sika* is appropriately licensed, generating a grammatical sentence. However, when they are not in the same clause, the clause-mate condition of *sika* is not satisfied, and the sentence is rendered ungrammatical, as shown in (15).

- (15) a. John-wa [Mary-sika ko-nai-to] it-ta.
 J-TOP M-only come-NEG-COMP say-PST
 ‘John said that only Mary came.’
 b. * John-wa [Mary-sika kuru-to] iwa-nakat-ta.
 J-top M-only come-COMP say-NEG-PST
 Intended: ‘John said that only Mary came.’

In (15a), *Mary-sika* ‘only Mary’ and *nai* are in the same clause, and *sika* is licensed properly. In contrast, in (15b), *sika* cannot be licensed because it is not in the same clause as *nai*. Matsuoka’s (2021, 2023) proposal predicts that *sika* attached to the element within PAs cannot be licensed by negation in the matrix clause because they are not in the same clause. However, this prediction is not borne out; negation in the matrix clause can be associated with *sika* within the PA clause. Observe (16) for the sentences including PAs and *sika*.

- (16) a. Mary-ga otya-o John-nitotte-sika oisiku ire-rare-nakat-ta.
 M-NOM tea-ACC J-for-only tasty brew-can-NEG-PST
 ‘Mary could brew tea, but it was tasty only for John.’
 b. Mary-ga otya-o John-nitotte oisiku-sika ire-rare-nakat-ta.
 M-NOM tea-ACC John-for tasty-only brew-can-NEG-PST
 ‘Mary could brew tea, and it was always tasty for John.’

² See Oshima (2004) for the binding of *zibun* by elements other than subjects.

In (16), *sika* is attached to the experiencer *John-nitotte* ‘for John’ and the PA *oisiku* ‘tasty’, respectively, and the negation is in the matrix clause. These examples demonstrate that PAs, their experiencers, and the negation in the matrix clause must be in the same clause, suggesting that PAs do not have a CP structure.

The third point is that the presence of null operators in Japanese PAs are not adequately proven. Matsuoka (2021, 2023) argues in (11) that PAs in Japanese and OCPs in English have the same structure, suggesting that Japanese PAs involve null operators. However, (11) does not serve as an argument for a null operator in the PAs because it is not possible to deny that the matrix objects in (11) are elided, and the NPs *zibun-nituite-no hanasi* ‘the story about self’ and *otagai-nituite-no hanasi* ‘the stories about each other’ are interpreted as the object of the verb in the relative clause *kiki-tai* ‘want to hear’.

- (17) a. John-ga [[zibun_i-nituite-no hanasi-o kiki-tai-to it-ta] seito_i]-nitotte] ~~sono-hanasi-o~~
 J-NOM self-about-GEN story-ACC hear-want-COMP say-PST student-for the-story-ACC
 omosiroku hanasi-ta.
 interesting tell-PST
 ‘John told the story about the students to those who said they wanted to hear it, and they found the story interesting.’
- b. Mary-ga [[otagai-nituite-no hanasi-o kiki-tai-to it-ta] hutari-no kodomo]-nitotte
 M-NOM each.other-about-GEN story-ACC hear-want-COMP say-PST two-GEN child-for
~~sono-hanasi-o~~ natukasiku katat-ta.
 the-story-ACC nostalgic tell-PST
 ‘Mary told the stories about each other to the two children who said they wanted to hear it, and they found the story nostalgic.’

Japanese allows for the extensive use of argument ellipsis, and Matsuoka’s (2021, 2023) analysis cannot refute this possibility. If his analysis is correct, and the NPs *zibun-nituite-no hanasi* and *otagai-nituite-no hanasi* are the objects in the matrix clause, the word order of the objects and the PAs should be able to change to PA-Obj, as Japanese permits relatively free word order due to scrambling. Additionally, even when the word order is changed to PA-Obj, it is predicted that *zibun* and *otagai* should be bound by *seito* ‘students’ and *hutari-no kodomo* ‘two children’. However, this prediction is not borne out; their word order is restricted to Obj-PA in the interpretation in which *zibun* and *otagai* are bound by *seito* and *hutari-no kodomo*.

- (18) a. * John-ga [[[e_j kiki-tai-to itta] seito_i]-nitotte e_j omosiroku] [zibun_i-nituite-no hanasi_j-o] hanasi-ta.
- b. * Mary-ga [[[e_j kiki-tai-to itta] hutari-no kodomo_i]-nitotte e_j natukasiku] [otagai_i-nituite-nohanasi-o]_j katat-ta.

The ungrammaticality of these examples strongly indicates that the NPs *zibun-nituite-no hanasi* and *otagai-nituite-no hanasi* are located within the relative clauses, suggesting that Matsuoka’s (2021, 2023) argument that Japanese PAs involve a null operator is not sufficiently supported.

The fourth point is related to the position of the PA experiencers. According to Matsuoka’s (2021, 2023) proposal, the PA experiencers reside in Spec, TP of the PAs. As PAs are adjuncts, it is predicted that the word order of experiencer-PAs should not be separated because movement

from PAs always results in Adjunct Island Condition violations. However, the PA experiencers can undergo movement to the sentence-initial position, as shown in (19).

- (19) Mary-nitotte_i, John-wa sono-hanasi-o _{t_i} omosiroku hanasi-ta.
 M-for J-TOP the-story-ACC interesting tell-PST
 ‘John told Mary the story, and she considered it interesting.’

In (19), the experiencer PP of the PA *Mary-nitotte* ‘for Mary’ is in the sentence-initial position. To derive this word order in Matsuoka’s (2021, 2023) analysis, the experiencer PP must move from the adjunct PA. However, as stated above, this kind of movement should result in ungrammaticality because extractions from adjuncts are generally prohibited. Therefore, the experiencers of PAs should not reside within PAs, contrary to Matsuoka’s (2021, 2023) proposal.

To summarize, Matsuoka’s (2021, 2023) analysis has significant empirical and theoretical flaws. Therefore, a new approach is required.

4 Proposal and Analysis

In this section, I propose an account for the properties of PAs in Japanese. First, let us review the properties of PAs observed in the previous section.

- (20) a. PAs cannot be negated.
 b. *Sika* ‘only’ attached to PAs and their experiencers can be licensed by matrix negation.
 c. PAs do not involve null operator movement.
 d. Experiencers of PAs can be scrambled to the sentence-initial position.

To capture these properties, I propose the following structure.

- (21) John-ga [_{VP} [_{PP} Mary-nitotte] [_{VP} [_{AP} omosiroku] [_{VP} hon-o yon-da]]]

I argue that PAs do not involve a CP structure but have a simpler AP structure. Additionally, the experiencer PP is adjoined to VP. A crucial point is that PAs and their experiencers do not form constituents, contrary to Matsuoka’s (2021, 2023) proposal in (12).

Let us observe how the properties of PAs are accounted for. First, the structure in (21) has neither CP nor TP; therefore, the properties in (20a–c) can be properly explained. Following Matsuoka’s (2021, 2023) assumption that *nai* ‘not’ in Japanese is the head of NegP, which requires the presence of TP, the impossibility of PA negation naturally follows because PAs lack TP.

Second, as shown in the previous section, the presence of a null operator is not sufficiently proven. I claim that Japanese PAs and English OCPs are superficially similar and do not share the same structure. For example, Japanese PAs can undergo topicalization, while English OCPs cannot.

- (22) a. Oisiku, John-ga sakana-o _{t_i} tabe-ta.
 tasty J-NOM fish-ACC eat-PST
 ‘John ate the fish and considered it tasty.’

- b. * To nibble with the beer, Alice baked some nachos. (Landau 2021: 42)

Furthermore, non-c-commanding control is possible in English OCPs, but such elements cannot be the experiencers of Japanese PAs.

- (23) a. I left it in [her_i mailbox] [PRO_i to look over once she returned from the Bahamas]. (Landau 2021: 43)
- b. John-ga kodomotati-no oya-ni sono-hanasi-o omosiroku katat-ta.
 John-NOM children-GEN parent-DAT the-story-ACC interesting tell-PST
 i. ‘John told the children’s parents the story, and the parents considered it interesting.’
 ii. *‘John told the children’s parents the story, and the children considered it interesting.’

If Japanese PAs and English OCPs have identical structures, then they should exhibit identical behavior, contrary to the fact. Therefore, it is reasonable to conclude that Japanese PAs and English OCPs do not share the same structure, and that their similarities should be attributed to factors other than syntax.

Third, the possibility of the experiencer raising can naturally be accounted for because, as I propose, experiencer PPs are not embedded within the PAs; therefore, the movement of PA experiencers does not induce ungrammaticality.

Fourth, the licensing of *sika* ‘only’ attached to PAs and their experiencers theoretically follows as is expected, because both PAs and their experiencers do not form a clause independently and are adjoined to VP in the matrix clause. Therefore, the clause-mate condition required by *sika* is properly satisfied.

5 Conclusion and Implications

In conclusion, I have demonstrated that my proposal can overcome the theoretical and empirical problems of Matsuka (2021, 2023): PAs in Japanese do not involve a full-fledged CP structure.

PAs are different from typical adverbs such as manner adverbs in that they involve a subjective evaluation by the speaker or other elements in the sentence. In terms of differences from other adverbs, PAs are similar to secondary depictive and resultative predicates, as exemplified in (24).

- (24) a. Taroo-ga katuo-o **namade** tabe-ta.
 Taroo-NOM bonito-ACC raw eat-PST
 ‘Taro ate a bonito raw.’ (Koizumi 1994: 27)
- b. Hanako-ga gurasu-o **konagonani** wat-ta.
 Hanako-NOM glass-ACC into.pieces break-PST
 ‘Hanako broke the glass into pieces.’ (Hasegawa 2021: 4)

If my analysis is correct, it will contribute to the issues regarding secondary predicate constructions. For example, it has been debated whether primary predicates and secondary predicates form a complex predicate, or whether secondary predicates and their semantic subjects form a small clause. If my analysis is applied to the secondary predicate constructions in (24), it predicts that such constructions do not involve complex predicates or small clause structures. In some studies, resultative predicates and their semantic subjects are considered to form a complex predicate

comprising the resultative predicate and the primary predicates. However, the analysis of this paper may serve as an argument in favor of an anti-complex predicate approach to resultative constructions in Japanese. This issue will be addressed in future studies.

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