

Resolving Thematic Underspecification*

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This paper will sketch out how thematically underspecified arguments, i.e., event participants whose manner of participation is unspecified, have their interpretations determined in a non-lexicalist model of grammar. In particular, it will discuss syntactic, semantic, and pragmatic factors involved in resolving thematic underspecification and how the interpretive processes apply at the interface. It will also discuss further issues to be investigated in order to provide a consistent and coherent picture of how thematic underspecification works.

Keywords: Thematic (proto-)roles, Thematic uniqueness, Underspecification

1. Introduction

Thematic roles (or thematic relations) are roles that nominals play in the event described by the predicate that selects them. It is generally assumed that predicates are specified in some way or other as to how many nominals they take and which nominal gets which thematic role, and specific thematic roles, as given in (1), are commonly employed in linguistic analysis across different theoretical frameworks and domains of inquiry.

(1) Agent	<u>Mary</u> left early.	
Experiencer	<u>He</u> likes roses.	
Theme/Patient	Brutus stabbed <u>Caesar</u> .	
Source	We bought it <u>from Agatha</u> .	
Goal	We sold it to <u>Sam</u> .	
Instrument	They opened it <u>with the key</u> .	
Benefactive	We threw <u>her</u> a big party.	
Location	It's hot <u>in the studio</u> .	(Parsons 1995: 638)

* Earlier versions of portions of this work were presented at Niigata University (NULC47) and Hong Kong Polytechnic University (PACLIC32) and later appeared in print (Takehisa 2018a, 2018b). I am grateful to the audience at each of these events for their feedback. I am solely responsible for any inadequacies that remain.

While predicates are typically associated with a set of specific thematic roles, not all roles are specific, and there are cases where an *underspecified* role is involved and an argument bearing it displays variability in thematic interpretation. For instance, English *have*, as in (2) below, is associated with such a role. As Ritter and Rosen (1990) argue, *have* assigns an underspecified thematic role to its subject, which is construed as a causer or an experiencer at LF, depending on how it is related to the event embedded under *have*.

(2) John had the students walk out of his class.

Essentially the same pattern can be observed with the transitive alternant of a verb displaying the causative/inchoative alternation, as in (3), where the subject can be interpreted in one of the two ways: one is that Taro did the breaking of an arm (agent); the other is that Taro underwent the breaking of an arm (affectee) (Inoue 1976).¹

(3) Taroo-ga ude-o or-Ø-ta (>ot-ta)
 T.-NOM arm-ACC √break-CAUS-PST
 ‘Taro broke an arm.’

To put it more generally, when an argument is thematically underspecified, it must be understood either as causing an event (proto-agent) or as undergoing or being affected by an event (proto-patient).² This line of thought can roughly be stated in terms of the interpretive processes in (4), whose outcome must satisfy the requirements in (5) and (6):³

¹ The abbreviations used in the glosses are as follows: ACC = accusative; APPL = applicative; CAUS = causative; DAT = dative; DIM = diminutive; GEN = genitive; GER = gerundive; INST = instrumental; LOC = locative; NEG = negative; NOM = nominative; PASS = passive; PST = past; √ = acategorical root.

² The intuition that lies behind (4) can also be found in Washio (1993). In this paper, Dowty’s (1991) proto role system is adopted in the formulation of the processes in (4), though Dowty’s original system allows an argument without a proto-role. In Takehisa (2018a), I argue that thematic underspecification must be resolved to meet the principle of Full Interpretation (Chomsky 1986).

³ The link requirement in (5), whose name is adopted from McIntyre (2006), is a requirement originally proposed for English *have* subjects, that locational or experiential *have* subjects be coindexed, or identified, with a pronoun or variable somewhere in the complement to *have* (Belvin and den Dikken 1997, Harley 1998, McIntyre 2006, and Ritter and Rosen 1997, among others). I assume this requirement to be semantic/conceptual.

- (4) In the structure [_{XP} DP X vP], where X is a head introducing a thematically underspecified argument and vP is a verb phrase to the exclusion of optional constituents and is a saturated predicate:
- a. Integrate DP into the event denoted by vP by construing it as a proto-agent.
 - b. Integrate DP into the event denoted by vP by construing it as a proto-patient.
- (5) Link Requirement
For DP to be construed as a proto-patient, its inclusion in the event must be represented.
- (6) Unique Role Requirement (or Thematic Uniqueness) (Carlson 1984, Landman 2000)
If a thematic role is specified for an event, it is uniquely specified. (Landman 2000: 38)

In this paper, given that an underspecified thematic role, which we assume to be a mere event participant, receives further interpretation through (4), (5), and (6), I will discuss how thematic underspecification is resolved in terms of syntactically encoded cues and post-syntactic interpretive processes, in an attempt to elucidate further issues in this domain of investigation. In so doing, I will argue that the approach adopted in this paper, which assumes an underspecified thematic role along with specific thematic roles, is superior to approaches assuming only specific thematic roles.

The paper is organized as follows: section 2 discusses cases involving syntactically encoded cues that contribute to resolving thematic underspecification, while section 3 discusses less obvious interpretive processes involved in underspecification resolution. Section 4 concludes the paper by pointing out further issues to be explored.

2. Encoded Meaning

2.1 Adjuncts

As they provide additional descriptive content by means of modification, syntactic adjuncts often serve as cues to resolve thematic underspecification. Consider (7).

- (7) Taroo-ga ziko-de ude-o or-Ø-ta (>ot-ta)
T.-NOM accident-CAUSE/LOC arm-ACC $\sqrt{\text{break}}$ -CAUS-PST
'Taro broke an arm due to the accident.'
'Taro broke an arm in the accident.'

(7) involves an adjunct phrase headed by the postposition *-de*, which can be taken as either a cause (i.e., due to the accident) or a spatiotemporal location (i.e., at the site/time of the accident). If the phrase is understood as a cause, then the subject argument must be a proto-patient (affectee) due to

the restriction that there is only one agent/cause per event, which may be subsumed under thematic uniqueness, broadly construed. On the other hand, the locational interpretation of the adjunct does not affect the subject interpretation in any way.⁴

-De phrases can denote an instrument as well, as (8) shows. Since instruments need to be controlled, the instrument denoted by the *-de* phrase necessitates the presence of an agent, thus serving to exclude the proto-patient reading.

- (8) Taroo-ga baaru-de ude-o or-Ø-ta (>ot-ta)
 T.-NOM bar-INST arm-ACC √break-CAUS-PST
 ‘Taro broke an arm with a bar.’

Moreover, the combination of a subject-oriented reflexive anaphor *zibun* (or its complex version *zibun-zisin*) with *-de* corresponds to (*by*) *oneself* in English, and thus it can serve to force the agentive reading of the subject, as given in (9).

- (9) Taroo-ga zibun(-zisin)-de ude-o or-Ø-ta (>ot-ta)
 T.-NOM self(-self)-INST arm-ACC √break-CAUS-PST
 ‘Taro broke an arm (by) himself.’

The same works for English, and, as indicated in the translation, emphatic reflexives in English force the agentive reading of the subject as well.⁵

In this connection, it is worth mentioning cases involving the possessive marker *own* in English. Consider (10).⁶

- (10) He broke his own arm.

Own in (10) can be interpreted in at least two ways. One is that it is an anti-assistive intensifier on a par with an adverbial emphatic reflexive, as in the English translation of (9), and the reading is that no agent other than John did the breaking. The other is that *own*, as a marker of intrinsic possession, serves to exclude alternative possessors, whereby (10) is understood as John broke his own arm,

⁴ However, adjuncts denoting a particular kind of location can facilitate the proto-patient reading of the subject. See (29) below for such a case.

⁵ See Baker (1995), Zribi-Hertz (1995), Safir (1995), and Spathas (2014) for emphatic reflexives.

⁶ The discussion on *own* is based on Spathas (2014).

but no one else's, and the subject can only be construed as an agent. Thus, under either interpretation of *own*, the agentive reading of the subject is the only possible option.

2.2 Arguments

The interpretation of a thematically underspecified argument is determined relative to those of other syntactic arguments. This results from thematic uniqueness. Thus, in the presence or with the implication of a proto-agent, an underspecified argument must be interpreted as a proto-patient. Likewise, it must be interpreted as a proto-agent if it is to be interpreted relative to a proto-patient argument. On the other hand, an underspecified argument can be interpreted either way, if there is no other argument to consider in terms of thematic uniqueness, as in (3) above. We will turn to each of these cases in the following.

Presumably, the simplest case is direct passivization. I assume that *niyotte* passives in Japanese involve suppression of an external argument (i.e., a proto-agent argument) (Kuroda 1979) and that *-rare* is a realization of the passive Voice head with a suppressed external argument, as given in (11).⁷ Adjunct *niyotte* phrases are optional, as are English *by*-phrases. Since a proto-agent is implied in *niyotte* passives, an underspecified argument must be interpreted as a proto-patient, as shown in (12), where the underspecified argument is the nominative subject and the passive Voice head is realized as *-are*.

(11) $[[\text{Voice}_{\text{PASS}}]] = \lambda e \exists x [\text{Agent}(e, x)]$

(12) Taroo-ga Ziroo-niyotte ude-o or- \emptyset -are-ta
 T.-NOM Z.-by arm-ACC $\sqrt{\text{break-CAUS-PASS-PST}}$
 'Taro had his arm broken by Ziro.'

Notice that (12) is derived by adding the passive Voice head (and the adjunct *niyotte* phrase) to active (3). In both, for the proto-patient reading to be possible, the subject must be in some relation (i.e., inalienable possession relation) with the object, as imposed by the link requirement.

Moreover, (12) is a possessor passive (Kubo 1990), which is a kind of indirect passive and has no active counterpart where the possessor argument appears as a verbal argument, as (13) shows.

⁷ The passive Voice head in (11) is a bundled head composed of a thematically specified argument introducer and the existential binder (See Landau 2010a for such an assumption). In contrast, it is assumed that English passives are derived in syntax, where the existential binder is combined with an active transitive structure that has not yet projected an external argument (e.g., Bruening 2013).

- (13) *Ziroo-ga Taroo-o/ni ude-o or-Ø-ta (> ot-ta)
 Z.-NOM T.-ACC/DAT arm-ACC √break-CAUS-PASS-PST
 Intended: ‘Ziro broke Taro’s arm.’

Takehisa (2018a) argues that (13) is ruled out because it involves the structure in (14), which is ultimately in violation of thematic uniqueness, with two identical argument-introducing heads occurring in the same domain.⁸

- (14) [_{XP1} DP₁ X₁ [_{XP2} DP₂ X₂ vP]]

A peculiar characteristic of possessor passives, as in (12), is that they involve valency reduction and valency augmentation, i.e., external argument suppression and addition of a possessor argument, respectively, at the same time. If we adopt the underspecification approach to external arguments, possessor passives are on a par with canonical passives in that they involve valency reduction by the passive Voice head, and the emergence of an extra possessor argument results from a thematically underspecified argument being construed as a proto-patient due to the implication of an agent by the passive Voice head. Approaches assuming thematically specified possessors in possessor passives must explain why the possessor argument cannot appear as a verbal argument in actives, as shown in (13) above.⁹

The transitive/ditransitive alternation presents another pattern. First, consider (15), which involves the transitive alternant of a transitive/ditransitive verb pair.

- (15) Taroo-ga mizu-o abi-ta
 T.-NOM water-ACC pour-PST
 ‘Taro poured water over himself.’
 ‘Taro got water poured over him.’

The subject in (15) is ambiguous and can be interpreted as a proto-agent (agent) or a proto-patient (affectee or goal). On the other hand, in (16) below, where the transitive subject in (15) is realized as a dative indirect object, the thematically underspecified nominative subject can only be

⁸ The ban on the structure in (14) is also responsible for the unavailability of possessor passives in English: given that English passive formation is an operation on an active transitive structure, an iteration of identical argument introducers is inevitable. See footnote 7.

⁹ See Takehisa (2016) for arguments against the possessor raising approach, which assumes possessor arguments to be originated from possessed nominals in the verbal domain.

construed as a proto-agent (agent), given that the indirect object is thematically specified as a proto-patient ((intended) goal).¹⁰

- (16) Ziroo-ga Taroo-ni mizu-o abi-se-ta
 Z.-NOM T.-DAT water-ACC pour-APPL-PST
 ‘Ziro poured water over Taro.’

Yet another pattern can be observed when the ditransitive alternant is passivized, as shown in (17), where the passive Voice head serves to force the nominative subject to be a proto-patient, which is related to the dative indirect object via the possession relation, due to the link requirement.

- (17) Taroo-ga Ziroo-niyotte kao-ni mizu-o abi-se-rare-ta
 T.-NOM Z.-by face-DAT water-ACC pour-APPL-PASS-PST
 ‘Taro had Ziro pour water over his face.’

The same pattern can be seen in the case of the transitive alternant of a *pass*-type verb, in the sense of Matsuoka (2003), as in (18). In this case, the *ni*-phrase is a goal PP, and the underspecified subject argument is related to the inalienably possessed nominal inside the PP.

- (18) Taroo-ga Ziroo-niyotte kao-ni mizu-o kak-e-rare-ta
 T.-NOM Z.-by face-to water-ACC √splash-CAUS-PASS-PST
 ‘Taro had Ziro throw water over his face.’

The cases we have seen so far suggest that direct internal arguments may play a role in satisfying the link requirement by providing a link to the event for an argument construed as a proto-patient, but they are irrelevant as to resolving thematic underspecification. Moreover, an underspecified argument is interpreted relative to another argument which is the highest available in the same domain, be it realized or suppressed. These observations, if they are valid, demand an explanation, and, if deemed appropriate, should be incorporated in the formulation of the interpretive processes in (4). I leave this task for future research.

¹⁰ The morpheme *-se* in the ditransitive alternant in (16) and (17) is analyzed and glossed as APPL, which is responsible for introducing an indirect object. See Takehisa (2018a, 2018b).

3. Enriched Meaning

3.1 Derived Relational Nouns and Contextually Salient Relations

Canonical cases displaying the ambiguity between an agent and an affectee involve nouns of inalienable possession such as body-part nouns as an object, as in (3), repeated here as (19).

- (19) Taroo-ga ude-o or-Ø-ta (>ot-ta)
 T.-NOM arm-ACC √break-CAUS-PST
 ‘Taro broke an arm’

For the proto-patient reading to be possible, the link requirement must be satisfied, and in (19), the object argument, which is intrinsically relational, provides the underspecified subject argument with a link to the event, as represented in (20), where *arm* is assumed to have the following denotation: $[[arm]] = \lambda x \lambda y [arm(x) \ \& \ R(y,x)]$.

- (20) $\exists e [Participant(e, Taro) \ \& \ Breaking(e) \ \& \ [Theme(e, an \ arm) \ \& \ R(Taro, an \ arm)]]$

Sortal nouns which can be regarded as “extended body parts” can also provide a link, as shown by the following example.¹¹

- (21) Taroo-ga (nagur-are-te) megane-o kowa-s-ta (>kowa-si-ta)
 T.-NOM punch-PASS-GER glasses-ACC √break-CAUS-PST
 ‘Taro (got punched and) broke his glasses.’

In (21), the object noun is intrinsically sortal, and, for the proto-patient reading to be felicitous, the subject referent must have worn the item this noun denotes at the time of the breaking event. In cases like this, I assume that the inherent lexical semantic property associated with the object noun supplies a relation, which satisfies the link requirement. More specifically, following Pustejovsky (1995) in spirit, I assume that nouns denoting items for clothing or fashion items have as part of their inherent lexical semantics the functional aspect of meaning (i.e., the telic quale in qualia structure in Pustejovsky’s Generative Lexicon Theory), which in this case is wearing.¹² I further

¹¹ Thus, clothes or fashion items that are being worn count as inalienably possessed in Japanese and English. See Tsunoda (1996) for what counts as an inalienable relation from a cross-linguistic perspective.

¹² I assume that this aspect of knowledge is stored as part of the post-syntactic Encyclopedia component that interfaces with the C/I system within the framework of Distributed Morphology (Halle and Marantz 1993).

assume that this aspect of meaning is accessed and activated so that it can provide a link for the underspecified argument, which can be represented as in (22).^{13,14}

(22) $\exists e[\text{Participant}(e, \text{Taro}) \ \& \ \text{Breaking}(e) \ \& \ \text{Theme}(e, \text{glasses})$
 $\ \& \ \exists e'[\text{Wearing}(e', \text{glasses}) \ \& \ \text{Holder}(e', \text{Taro})]]$

The nouns involved in the case of the proto-patient reading, as in (19) and (21), are quite reminiscent of nominal bases involved in denominal *-ed* adjectives in English, as given in (23) below (Hudson 1975, Ljung 1976, and, Nevins and Myler 2014 among others). Specifically, the adjectives in (23a), meaning “having N,” involve body-part nouns as their nominal bases, while in (23b), the nominal bases are nouns denoting clothing or fashion items, and the resulting *-ed* adjectives mean “wearing N.” In both cases, the adjectivizer *-ed* semantically takes a relation as its first argument and outputs a predicate (Nevins and Myler 2014), in effect restricting their nominal bases to relational nouns. Thus, in the case of the sortal nouns in (23b), they undergo type shifting to relational nouns, as required by the adjectivizer, with the concomitant meaning-shift operation capitalizing on the telic quale of these nouns (i.e., wearing) (Takehisa 2017). This is the reason why they must be understood as being worn, not just being possessed.

- (23) a. blue-eyed, one-armed, blonde-haired, etc.
 b. black-jacketed, top-hatted, beautiful-kimonoed, etc.

In contrast, in the case of the sortal noun in (21) above, type shifting is not involved, since nothing forces it to take place. Instead, I tentatively assume that an interpretive process akin to free pragmatic enrichment (Carston 2002) is responsible for making the relevant inherent lexical semantic properties (e.g., the telic quale) of a sortal noun present in the representation and rendering them part of the truth condition, as in (22). While the process of free pragmatic enrichment is argued to supply the truth-conditional content of “unarticulated constituents,” which are not traceable to syntactically encoded meaning, the interpretive process involved in (22) is

¹³ The compositional nature of the subject interpretation leads us to assume that the semantic/conceptual operation capitalizing on the telic quale applies post-syntactically at the C/I interface, but the exact nature of this operation remains to be explored.

¹⁴ The added telic quale part in (22) is represented in neo-Davidsonian fashion, with the Holder role (Kratzer 1996) adopted. Note that the temporal relation between events is omitted in (22).

constrained in such a way that it can only apply to the inherent lexical semantic properties of syntactically encoded items.^{15,16}

Contextually salient relations can also supply a relation (typically, a part-of relation) required for the proto-patient reading of the subject, making the reading possible in otherwise impossible cases. For instance, under the context where Ziro’s arm is understood as part of Taro’s body, say, as a result of transplantation, the subject in (24) can be construed as a proto-patient (affectee), as can be represented in (25). This indicates that the contextual information can play a role in resolving thematic underspecification.

(24) Taroo-ga Ziroo-no ude-o or-Ø-ta (>ot-ta)
 T.-NOM Z.-GEN arm-ACC √break-CAUS-PST
 ‘Taro broke Ziro’s arm’

(25) $\exists e[\text{Participant}(e, \text{Taro}) \ \& \ \text{Breaking}(e) \ \& \ [\text{Theme}(e, \text{Ziro's arm}) \ \& \ \text{R}(\text{Ziro's arm}, \text{Taro's body})]]$
 (R: a contextually salient, part-of relation)

3.2 Conceptually Understood Agents

Some verb phrases denoting an externally caused event allow a non-agentive subject as well as an agentive subject, as (26) shows.

(26) Taroo-ga kami-o kir-Ø-ta (>kit-ta)
 T.-NOM hair-ACC √cut-CAUS-PST
 a. ‘Taro cut his hair (by himself).’
 b. ‘Taro had a haircut.’

The sentence in (26) is two-way ambiguous in that the subject is interpreted as an agent or a proto-patient (undergoer/affectee or benefactive).¹⁷ Under the proto-patient interpretation, the

¹⁵ The relevant level of representation is different as well: the process of free pragmatic enrichment is assumed to apply in the language of thought or the conceptual representation dealing with the output of semantic interpretation, while the interpretive process considered here applies at the semantic representation.

¹⁶ The existence of free pragmatic enrichment has been intensely debated in the literature. See Elbourne (2021) for a lucid survey of this topic.

¹⁷ In the literature, it is quite common to refer to the indirect causer reading as the significantly relevant reading of the subject, with an unexpressed direct agent identified as an intermediate cause (e.g., Sato 2005). Although it is reasonable to assume the indirect causer subject in cases like (i), the higher, indirect cause interpretation is not necessarily involved in cases like (ii), given the context where the baby has no control over the event whatsoever.

presence of an agent is conceptually understood but syntactically absent (cf. implicit agents of passives; Landau 2010b). This is possible because we know, as part of our knowledge about events, that hair-cutting is an externally caused event that necessarily involves an agent.

Note that verbs are not limited to the transitive alternants of verbs displaying the causative/inchoative alternation, and non-alternating verbs are also possible, as shown by the following examples.

(27) Taroo-ga suutu-o {sitate-ta / tukur-ta (>tukut-ta) }

T.-NOM suit-ACC tailor-PST/ make-PST

a. ‘Taro made a suit.’

b. ‘Taro got a suit made.’

(28) a. Taroo-ga (me-o) syuzyutu-s-ta (> -si-ta)

T.-NOM eye-ACC surgery-do-PST

b. Taroo-ga (me-no) syuzyutu-o s-ta (> si-ta)

T.-NOM eye-GEN surgery-ACC do-PST

i. ‘Taro performed a surgery (on eyes).’

ii. ‘Taro underwent a surgery (on eyes).’

(Takehisa 2018b: (17))

It appears that a proto-patient subject is possible with an externally caused event that necessarily involves an agent if the event is associated with a prototypical agent, e.g., someone with expertise in the relevant activity. Thus, in (26)–(28), unexpressed agents are expected to be more specified than implicit agents in passives, and, their (cancellable) interpretation varies depending on the event involved: a barber in (26), a tailor in (27), and a(n) (ophthalmic) surgeon in (28).¹⁸ This suggests that, as long as the implication of a prototypical agent is maintained, the underspecified subject can be construed as a proto-patient.

(i) Hideyoshi-ga Osaka.zyoo-o tat-e-ta
 H.-NOM Osaka Castle-ACC √build-CAUS-PST
 ‘Hideyoshi built Osaka Castle.’

(ii) Akachan-ga hazimete kami-o kir-Ø-ta (>kit-ta)
 baby.DIM-NOM for.the.first.time hair-ACC √cut-CAUS-PST
 a. #‘The baby cut {his/her} own hair for the first time.’
 b. ‘The baby had a haircut for the first time.’

I assume that the subject in (i) is a proto-agent and involves metonymy, while the interpretation identified as a higher indirect cause, though sometimes available, is not relevant in (ii) and the cases discussed in the text.

¹⁸ I assume that prototypical associations between agents and events (e.g., the one between barbers and hair-cutting, as in (26)) are stored as part of the Encyclopedia and serve as resources for conventional interpretation.

Thus, a phrase denoting the location where the relevant expertise is practiced serves to imply the presence of an unexpressed expert agent, facilitating the proto-patient reading of the subject, as in (29). Note, however, that, although the agentive reading in (29) is very hard to obtain as it is, it is not impossible. For instance, *zibun-de* ('by self'), a phrase which forces the agentive reading of the subject, can be added to (29).

- (29) Taroo-ga sanpatuya-de kami-o kir-Ø-ta (>kit-ta)
 T.-NOM barbershop-LOC hair-ACC √cut-CAUS-PST
 a. 'Taro cut his hair in the barbershop (by himself).'

b. 'Taro had a haircut in the barbershop.'

As we saw in (8) above, an instrumental phrase forces the underspecified argument to be construed as agentive. (30) shows the same point, and in this case, the instrumental phrase prevents the agent argument from being unexpressed.

- (30) Taroo-ga barikan-de kami-o kir-Ø-ta (>kit-ta)
 T.-NOM hair Clippers-INST hair-ACC √cut-CAUS-PST
 'Taro cut his hair with hair clippers (by himself).'

This line of thought can be implemented as follows: Consider (26) again with the structure in (31) below. Since the event denoted by vP in (26), as represented in (32a), is externally caused, the involvement of an agent is required, as expressed in the meaning postulate in (32b). (33a) is formed on top of (32a) as an underspecified Participant argument is introduced by X. In this case, the thematic underspecification can be resolved by (32b), yielding (33b). Alternatively, as given in (34a), vP can receive a conventional interpretation with an already saturated agent, due to the special information stored in the Encyclopedia, satisfying the requirement imposed by (32b). Then, (34b) is formed from (34a) at the XP level, and due to (4b) in conjunction with thematic uniqueness, an underspecified argument can only be construed as a proto-patient. The link requirement in (5) is satisfied by the subject being related to the object, in this case, via the relation of inalienable possession.

- (31) [_{XP} DP X vP] (DP: an underspecified Participant argument)

(32) a. [[vP]] = $\lambda x \lambda e [\text{Cutting}(e) \ \& \ \text{Theme}(e, \text{hair}) \ \& \ \text{R}(x, \text{hair})]$

b. $\Box \forall e [\text{Cutting}(e) \rightarrow \exists x [\text{Agent}(e, x)]]$

- (33) a. $[[XP]] = \lambda e[\text{Participant}(e, \text{Taro}) \ \& \ \text{Cutting}(e) \ \& \ \text{Theme}(e, \text{hair}) \ \& \ \text{R}(\text{Taro}, \text{hair})]$
 b. $[[XP]] = \lambda e[\text{Agent}(e, \text{Taro}) \ \& \ \text{Cutting}(e) \ \& \ \text{Theme}(e, \text{hair}) \ \& \ \text{R}(\text{Taro}, \text{hair})]$
- (34) a. $[[vP]] = \lambda x \lambda e[\text{Cutting}(e) \ \& \ \text{Theme}(e, \text{hair}) \ \& \ \text{R}(x, \text{hair}) \ \& \ \exists y[\text{Agent}(e, y)]]$
 b. $[[XP]] = \lambda e[\text{Participant}(e, \text{Taro}) \ \& \ \text{Cutting}(e) \ \& \ \text{Theme}(e, \text{hair}) \ \& \ \text{R}(\text{Taro}, \text{hair}) \ \& \ \exists y[\text{Agent}(e, y)]]$

In the case of creation verbs as in (27), the proto-patient subject can be construed as related to the event by being a benefactive, as can be represented by the following, where the predicate, $\lambda x \lambda e[\text{For}(e, x)]$, encodes the benefactive relation (Parsons 1995: 639).

- (35) $[[XP]] = \lambda e[\text{Participant}(e, \text{Taro}) \ \& \ \text{Making}(e) \ \& \ \text{Theme}(e, \text{a suit}) \ \& \ \text{For}(e, \text{Taro}) \ \& \ \exists y[\text{Agent}(e, y)]]$

Thus, the underspecified subject can only be construed as a proto-patient in conventionalized cases where conceptually understood agents are involved. In these cases, the agentive interpretation, which is not syntactically encoded, results from a particular kind of vP receiving conventional interpretation.

4. Summary and Further Issues

This paper has seen the syntactically encoded cues and the interpretive processes involved in resolving thematically underspecified arguments, and that a thematically underspecified argument can be interpreted either as a proto-agent or a proto-patient, depending on the context of occurrence. A key feature of the underspecification approach is that the interpretation of an underspecified argument hinges on that of another argument, which is syntactically realized or suppressed, or only semantically represented. The same interpretive procedure applies to subjects in different environments, from the transitive alternants of causative/inchoative verbs, to possessor passives, to the ditransitive alternants of transitive/ditransitive verbs, to verb phrases denoting externally caused events with conceptually understood agents.

There are many issues not discussed in this paper. I will conclude this paper by touching on some of them briefly.

First, the head introducing a thematically underspecified argument (X in (4) and (31)) corresponds to Wood and Marantz's (2017) original argument introducer i^* . According to Wood and Marantz, who attempt to build a restrictive theory of argument introducers, major argument introducers such as High Appl and Low Appl (Pylkkänen 2008) are derived based on i^* (e.g.,

Appl_{GOAL} as [i^* $\sqrt{\text{TO}}$]). They are more complex—and hence more specified—than i^* , since what combines with i^* specifies, or modifies, the denotation of i^* ($\lambda x \lambda e [\text{Participant}(e,x)]$). Yet some derived argument introducers are not thematically specified enough in that they introduce an argument which can be construed as a proto-agent or a proto-patient (e.g., dative subjects in German anticausatives; Schäfer 2012). Thus, the relation between the composition of a complex argument introducer and the thematic role of its argument needs to be explored. Moreover, it needs to be investigated how the composition of an argument introducer is related to its Case-licensing ability. What appears plausible at present is that the original argument introducer cannot assign inherent Case, but it remains to be seen whether meaningful generalizations can be found with complex argument introducers in this respect.¹⁹

Second, the syntactic causative morpheme *-sase*, the indirect passive morpheme *-rare*, and the benefactive morpheme *-te moraw* in Japanese are thematically specified argument introducers, but they do not affect the interpretation of the underspecified argument in their complement domain, suggesting that they belong to a different domain. Since I have refrained from discussing how to define a relevant domain, what counts as a domain for the purpose of resolving thematic underspecification is another future topic in this realm of investigation.

Third, the potential morpheme *-rare* is a modal predicate introducing an agent argument that can be marked nominative or dative. It is a complex argument introducer, but no thematically underspecified argument (construed as a proto-patient) appears with it, suggesting that the head introducing it cannot appear in the potential context. Yet, the present analysis makes no prediction concerning this observation. Since this observation relates to why the relevant head cannot occur between the potential morpheme and its complement, it seems promising to approach the question in relation to the restructuring property of the potential morpheme (Takahashi 2012).

Fourth and Last, it is assumed that an underspecified argument must satisfy the link requirement so that it can be construed as a proto-patient. When you look closely at the relations involved between the proto-patient argument and what serves as a link to the event, the kind of relation is different, depending on the context. Specifically, when the underspecified argument can be either a proto-agent or a proto-patient, as in (3) above, the relation must be one of inalienable possession or its equivalent. On the other hand, when the underspecified argument can only be a proto-patient in the context where a proto-agent argument is syntactically or semantically present, as in possessor passives and cases involving conceptually understood agents, the relation involved

¹⁹ If i^* is the only argument introducer that introduces an agent argument in syntax and has no inherent-Case-licensing ability, this explains the observation that non-nominative subjects cannot be agents (in non-modal contexts).

need not be as tight as that of inalienable possession. Pretheoretically speaking, it appears that when the proto-patient reading results from the inference based on the presence of a proto-agent and thematic uniqueness, the relation involved need not be as tight. However, how this intuition can be formulated in a theoretically sound manner remains to be seen.

Though the analysis presented here is yet to be completed in many respects, I hope to have shown that the general approach taken in this paper is plausible and that topics related to thematic underspecification and its resolution are worth exploring.

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