

The Japanese Internally Headed Relative Clause is *not* an E-type pronoun*

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We critically examine a widely-entertained assumption that the semantics of Japanese Internally Headed Relative Clauses (IHRCs) involves a special kind of anaphora called E-type anaphora. We first summarize motivations for such an approach and a specific formulation by Shimoyama (1999). We then present novel data that pose problems for E-type approaches, followed by further data suggesting a previously-unnoticed parallel between IHRCs and null pronouns in Japanese. Based on these observations, we conclude that the anaphoric relations found in IHRCs and null pronouns should be given a unified treatment, a goal not attainable in any E-type approach to IHRCs.

1. Introduction

Internally Headed Relative Clauses (IHRCs) exemplified in (1) have attracted much attention in the literature of Japanese generative grammar.

- (1) Yooko wa [Taroo ga sara no ue ni keeki o oi-ta] no o
Yoko TOP Taro NOM dish GEN top DAT cake ACC put-PAST NMLZ ACC
tabe-ta.
eat-PAST
'Yoko ate the cake that Taro put on the table.'

The problem posed by this construction was initially regarded as a syntactic one. That is, it was assumed that there is a structural mismatch between the IHRC and its externally-headed counterpart such that what appears to be the head noun (the noun *keeki* 'cake' in the case of (1)) modified by the relative clause appears *inside* (rather than *outside*) the relative clause in the case of the IHRC. The goal of formal analyses of IHRCs, then, was to reconcile this structural mismatch by means of some sort of head movement operation at LF, which effectively assimilates internally- and externally-headed relative clauses at the level of structural representation relevant to semantic interpretation (e.g. see Itô (1986) for the earliest proposal along these lines).

The real problem that this construction poses for compositional semantics has come to be fully recognized only recently. Authors such as Hoshi (1995) and Shimoyama (1999) noted a number of empirical problems for the LF raising

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approach and proposed versions of an analysis of the IHRC in terms of E-type anaphora (Cooper 1979; Evans 1980), claiming that the semantics of the Japanese IHRC is a disguised definite, where the retrieval of the ‘internal head’ crucially relies on an anaphoric mechanism. The success of this approach in overcoming the problems for the previous syntactic solutions was so impressive that most subsequent authors have followed them in adopting some version of the E-type approach (Matsuda 2002; Kim 2004; Hosoi 2004).

In this paper, drawing on a wide range of data that have thus far not been discussed in the literature, we will attempt to reconsider the semantics of the IHRC. In particular, we will make the following claims:

- IHRCs in Japanese do *not* involve E-type anaphora (i.e. they are not disguised *definite* descriptions).
- Following Shimoyama (1999), we assume that the semantic interpretation of the IHRC crucially involves anaphora, but the E-type mechanism that she posits makes incorrect predictions.
- The full range of interpretations available for the IHRC (definite, indefinite, covariational) corresponds to the range of interpretations available for Japanese ‘null pronouns’ (Tomioka 2003) rather than those predicted by the E-type analyses.
- Pragmatics plays a central role in restricting the range of possible interpretations in specific examples of the IHRC, giving the impression that the IHRC uniquely denotes a definite expression for some sentences.

The paper is organized as follows. In section 2, we review previous E-type analyses of IHRCs. Sections 3 and 4 are devoted to the reconsideration of data, where we justify our claims listed above in detail. In section 5, we conclude with a hint of a possible direction toward an analysis of IHRCs that predicts the parallels between IHRCs and null pronouns discussed in section 4.

2. E-type Analyses of the Japanese IHRC

2.1 Motivations for the E-type approach

The E-type analysis of the IHRC was first proposed by Hoshi (1995) and later elaborated by Shimoyama (1999) based on (i) the insurmountable empirical problems faced by previous approaches in terms of LF raising (e.g. Itô (1986)) and (ii) the parallels between the IHRCs and the so-called E-type uses of pronouns (Cooper 1979; Evans 1980). Because of space limitations, we will not review LF raising approaches and their problems in this paper. The reader is referred to the discussion in Hoshi (1995) and Shimoyama (1999).

The parallels between the IHRC and E-type pronouns come in two varieties. The first is the existence of what is known as the maximality effect first noted for the IHRC by Hoshi (1995) with examples like the following:

- (2) John wa [Mary ga san-ko no ringo o mui-te kure-ta] no
 John TOP Mary NOM three-CL GEN apple ACC peel BENEf-PAST NMLZ
 o tabe-ta.
 ACC eat-PAST
 ‘John ate the three apples that Mary peeled (for him).’

As pointed out by Hoshi, for sentence (2) to be felicitous, it has to be the case that John ate *all* three of the apples peeled by Mary, which suggests that the IHRC in this sentence winds up denoting the maximal entity whose existence is entailed by the propositional content of the embedded clause. This situation is reminiscent of the interpretation that one gets for the English example (3), a classic case of E-type anaphora, where the pronoun in the second sentence is construed as referring to the set of all the sheep owned by John.

- (3) John owns many sheep. Harry vaccinates *them* every spring.

Shimoyama (1999) notes another parallel between IHRCs and E-type pronouns to further justify her E-type analysis of IHRCs. She states that (4) shows that the anaphoric mechanism involved in the IHRC cannot be either simple coreference or bound variable anaphora.

- (4) Dono gakusei_i mo [{soitu_i ga / pro_i} kongakki peepaa o
 every student that guy NOM this semester paper ACC
 san-bon kai-ta] no o kesa teisyutu-si-ta.
 three-CL write-PAST NMLZ ACC this morning turn.in-do-PAST
 ‘This morning every student turned in the three papers that (s)he had written this semester.’

Intuitively, for this sentence to be true, it has to be the case that each student turned in the set of papers that (s)he is the author of. That is, the denotation of whatever anaphoric expression fills the direct object position in the matrix clause covaries with the subject quantifier without being directly bound by it. As Shimoyama points out, this kind of anaphoric relation cannot be treated either in terms of simple coreference or variable binding, which leads her to the conclusion that an analysis of the IHRC in terms of E-type anaphora is necessary.

Again, the availability of covariational readings¹ is reminiscent of the behavior of English donkey pronouns in sentences like (5).

- (5) Every farmer who owns a donkey beats *it*.

Several authors (most notably Cooper (1979)) have proposed analyses of donkey sentences in terms of E-type anaphora, according to which the pronoun *it* in (5) gets an interpretation that can informally be paraphrased as ‘the donkey that *x* owns’, with *x* being bound by the subject quantifier.

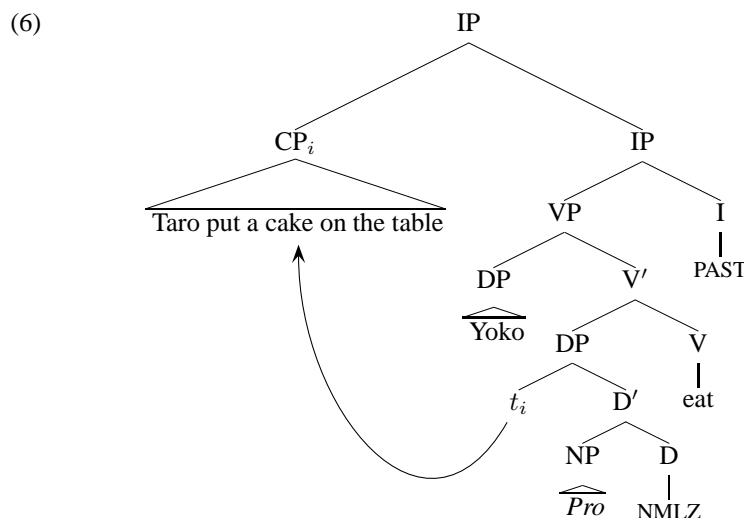
Before moving on, we need to resolve a terminological issue in order to avoid confusion. There is considerable variation and debate in the literature as to the exact meaning of the term ‘E-type anaphora’ and the kinds of empirical phenomena for which a theoretical device embodying this notion have been/are

¹This is a descriptive term that we borrow from Elbourne (2005); it refers to the kind of readings of sentences in which a particular linguistic expression is required to be construed as being dependent on the interpretation of another, typically in the absence of a direct binding relation between the two.

considered to be optimally applied. However, most authors in the previous literature (of the IHRC in Japanese, at least) follow Cooper (1979) in formalizing the notion of the E-type pronoun as (i) a definite description² (ii) whose descriptive content (property that determines its identity) is recovered from the context. In this paper, we use the term ‘E-type’ pronoun/anaphora for the kind of treatments of pronouns/anaphora that satisfy both of these two properties.

2.2 Shimoyama’s (1999) analysis of the IHRC

In order to see how an E-type analysis of the Japanese IHRC can be technically worked out, let us take Shimoyama’s (1999) analysis as a representative case and examine it in some detail.³ Shimoyama formally accounts for the discourse anaphora-like interpretations found in sentences involving IHRCs observed in the previous section (i.e. their E-type properties) by (i) introducing an LF movement operation of the IHRC to a position at which it adjoins to the matrix clause and (ii) positing an invisible E-type pronoun at the movement site of the IHRC.⁴ Thus, example (1) would have the following LF representation:



In this analysis, a sentence containing an IHRC is effectively treated as a conjunction of two clauses where the first conjunct is the IHRC and the second

²Cooper (1979) adopts a Russellian account of definite descriptions in his formal treatment of pronouns. E-type analyses of IHRCs in Japanese differ with respect to whether they adopt a Russellian account or a presuppositional account of definites. However, we will not draw a distinction between these two varieties here since this difference is not crucial for our purposes; the point is that each of these approaches encodes the uniqueness/maximality effect as an explicitly semantic property associated with the IHRC construction, which, regardless of its specific implementation, is falsified by the data in the next section.

³The following presentation does not necessarily reproduce Shimoyama’s formal analysis in every detail; several points not relevant for this discussion are glossed over.

⁴Technically, in Shimoyama’s analysis, the invisible *Pro* (in (6)) is a property variable corresponding to Cooper’s (1979) free property variable (in his IL translation of pronouns) and maximality is encoded as the semantic property of the nominalizer *no*.

conjunct is the matrix clause with an E-type pronoun sitting in the position where the IHRC appears in the surface string. In (6), the value of the property variable corresponding to the descriptive content of the E-type pronoun is contextually determined to be the property of being the cake that Taro put on the table (where the raised IHRC in effect serves to establish the previous discourse). The whole sentence, then, gets an interpretation that can be paraphrased as ‘Taro put a cake on the table and Yoko ate *the cake that Taro put on the table*’.

Shimoyama’s analysis is clearly an E-type analysis in our definition of the term since (i) maximality is encoded as a semantic property of the nominalizer and (ii) the anaphoric retrieval of the content of the property variable posited at LF plays a crucial role in giving the right interpretations for sentences containing IHRCs.

By virtue of encoding maximality as a semantic property of the IHRC construction, Shimoyama gets the right interpretations for sentences like (2). This analysis also straightforwardly accounts for the covariational readings of IHRCs. Roughly speaking, following the idea of Cooper (1979), Shimoyama assumes that the property ‘variable’ in E-type pronouns can be a complex expression containing a variable inside it. Thus, in the case of (4), if the relevant property denoted by this complex expression is contextually resolved as something like ‘the papers that *x* wrote this semester’, where the variable *x* is bound by the subject quantifier, the desired interpretation in which each student turns in his/her own papers is correctly obtained in Shimoyama’s analysis.

3. Data that pose problems for the E-type analysis of the IHRC

We have seen that analyses such as Shimoyama’s use the semantic maximality of the E-type pronoun to account for examples such as (2), thereby predicting that all IHRCs will display the maximality effect present in that example. Unfortunately for these previous approaches, examples such as (7) and (8) abound, where the IHRC receives a non-maximal interpretation.

- (7) Taro wa [kan no naka ni ame ga hait-te i-ta] no o
 Taro TOP can GEN inside DAT candy NOM in be-PAST NMLZ ACC
 toridasi-te name-ta.
 pick.out eat-PAST
 ‘Taro picked out and ate one/some of the candies in the can.’
- (8) Dono gakusei mo [Hanako ga biihu sityuu o tukut-ta] no o
 every student Hanako NOM beef stew ACC make NMLZ ACC
 yorokon-de tabe-ta.
 gladly eat-PAST
 ‘Every student enjoyed eating some of the beef stew that Hanako made.’

In Shimoyama’s analysis, the relevant property retrieved for (7) is the property of being a candy in the can. Thus, her analysis predicts that in order for the sentence in (7) to be felicitous, Taro must have taken and eaten the maximal set of candies in the can, i.e. all of the candy. However, native speakers deem this sentence acceptable when Taro takes only a few, or even a single piece of candy. Similarly, in (8) the property retrieved from the IHRC is ‘being beef stew made by Hanako’, so under Shimoyama’s analysis this sentence should mean that each person ate

all of the stew, leaving nothing for the others, which is not consistent with the judgments of native speakers. This example reveals a crucial difference between Japanese IHRCs and English definites, because the most salient reading of the English sentence *Every student ate the beef stew made by Hannah* is a reading in which each student eats the maximal amount of stew, then vomits it so that the next student may also eat the full amount of the stew.

For someone committed to an E-type analysis of the IHRC, it might be tempting to look for other semantic factors that might explain the difference between (2) on the one hand and (7) and (8) on the other, but the following near-minimal pair of sentences (in terms of their semantic content) shows that maximality in the IHRC is a pragmatic, not semantic, effect.

- (9) a. (At the security check of an airport:)
- Dono zyookyaku_i mo [\emptyset _i poketto ni koin ga hait-te i-ta]
 every passenger pocket DAT coin NOM in be-PAST
 no o toridasi-te toreii ni nose-ta.
 NMLZ ACC pick.up tray DAT put-PAST
 ‘Every passenger picked up the coins that she/he had in (her/his) pocket and put them on the tray.’
- b. (At the ticket gate at a train station:)
- Dono zyookyaku_i mo [\emptyset _i saifu ni kaisuken ga hait-te
 every passenger wallet DAT coupon.ticket NOM in
 i-ta] no o toridasi-te kaisatu ni ire-ta.
 be-PAST NMLZ ACC pick.up ticket.checker DAT put-PAST
 ‘Every passenger picked up a coupon ticket that she/he had in (her/his) wallet and put it in the ticket checker.’

In the case of (9a), real-world knowledge about airports tells us that not putting all of your coins into the tray might set off the metal-detector, biasing the maximal interpretation. In the case of (9b), on the other hand, real-world knowledge about train/subway stations tells us that putting more than one ticket (let alone all of them) into an automatic ticket-checker/turnstile is likely to cause a machine malfunction. This knowledge biases the non-maximal interpretation because even for those passengers who buy their tickets in bulk and may have a set of ten or more, we expect them to put only a single ticket into the machine.

As a result of the empirical evidence presented above, we conclude that the maximal interpretations of sentences containing IHRCs and the maximality predicted on the basis of E-type treatments do not match. Thus, the only remaining justification for the E-type analysis is covariation, which is not a phenomenon specific to E-type anaphora. For example, ‘paycheck’ readings (readings of sentences with pronouns such as *The woman who puts her paycheck in the credit union is wiser than the one who puts it in the bank* in English) of Japanese null pronouns exhibit covariation and cannot be treated exclusively in terms of E-type anaphora, as we will see in the next section. This means that there are no remaining decisive arguments for treating the IHRC as an instance of E-type anaphora.⁵

⁵It is likely that any attempt to revise the E-type account to overcome the problem of nonmaximality (e.g. along the lines of Heim (1990) and Elbourne (2005) in terms of minimal situations)

It also means that the anaphora involved in the Japanese IHRC does not match the anaphora involved in English definite pronouns, because the use of a theoretical device (the E-type pronoun) normally employed in accounting for English definites in analyzing the IHRC leads to incorrect predictions. This leads us to the following question: Is there another empirical phenomenon that more closely matches IHRC anaphora?

4. Parallels between IHRCs and ‘null pronouns’

Many languages including Japanese allow for what are known as ‘null pronouns’, where some argument of a verb does not appear phonologically but the semantic content of this missing argument is understood on the basis of prior context. Thus, some kind of anaphoric retrieval is taken to be involved in their interpretation. Japanese null pronouns exhibit both definite/maximal and indefinite/nonmaximal readings depending on contextual information (Tomioka 2003). The examples in (10) below parallel the IHRC examples in (9), where (10a) is the definite/maximal reading and (10b) is the indefinite/non-maximal reading.⁶

- (10) a. Taroo wa Tookyoo de Bussyu daitooryoo no ikkoo o mi-ta.
 Taro TOP Tokyo LOC Bush president GEN group ACC see-PAST
 Hanako wa Oosaka de \emptyset mi-ta.
 Hanako TOP Osaka LOC see-PAST
 ‘Taro saw president Bush and his entourage in Tokyo. Hanako saw (them) in Osaka.’
- b. Taroo wa Tookyoo de UFO o mi-ta. Hanako wa Oosaka
 Taro TOP Tokyo LOC UFO ACC see-PAST Hanako TOP Osaka
 de \emptyset mi-ta.
 LOC see-PAST
 ‘Taro saw a UFO in Tokyo. Hanako saw (one) in Osaka.’

Furthermore, just as there are some IHRC examples such as (2) in which no amount of contextualizing seems to produce a non-maximal interpretation (i.e. only a maximal interpretation is felicitous), the same is true of null pronouns. The null pronoun example in (11) is analogous to (2); both contain numeral expressions that seem to force the exclusively-maximal interpretation. The same pattern is found both in sentences containing IHRCs and those containing null pronouns where there is a quantifier with an existential presupposition in the antecedent clause (like *hotondo* ‘most’ in (4) in Shimoyama (1999:149)), but we omit these examples here due to space considerations.

would complicate the picture significantly and would lead to other unwelcome predictions. Furthermore, such approaches still do not account for the difference we have seen between the behaviors of Japanese IHRCs and English definite descriptions, since, being E-type approaches, they would inherit the property of assimilating Japanese IHRCs with English definite expressions.

⁶Here and elsewhere, \emptyset in a Japanese example stands in for the null pronoun in the sentence. Expressions in parentheses in English translations, such as ‘(him)’ in (10a), designate the salient interpretations for these null pronouns in the given context.

- (11) Okaasan ga ringo o san-ko mui-te kure-ta no de, Mari wa \emptyset
 mother NOM apple ACC three-CL peel BENEF because Mari TOP
 oyatu ni tabe-ta. # Ato kara Rika ga ki-te, nokori o tabe-ta.
 snack for eat-PAST afterwards Rika NOM come rest ACC eat-PAST
 ‘Since her mother peeled three apples for Mari, she ate (them) for a snack.
 #Rika came afterwards and ate the rest.’

Having established a parallel between maximality (or lack thereof) in sentences containing null pronouns and those containing IHRCs, we now turn to another kind of parallel. Hoshi (1995:150–151) noted that for the IHRC examples in (12), the sentence (12b) in which no overt ‘antecedent’ is found in the embedded clause is less acceptable than (12a) in which there is an overt antecedent in the embedded clause. As he points out, this is essentially the same problem as the ‘formal link’ problem Heim (1990) describes for pronouns. Example (12b) is a case where the formal link is not established; in other words, since the word ‘bride’ is not specifically mentioned, in order to make sense of this sentence, the hearer would need to make a mental leap from hearing that the neighbor’s son got married to inferring that he therefore has a wife who might be interested in joining a local club. If the speaker instead conveys the same information by explicitly mentioning ‘the bride’, as in (12a), a formal link is established between the antecedent and the anaphor. This distinction presumably leads to the contrast in acceptability between these two sentences.

- (12) a. Yamada-san wa [otonari no musuko-san ga wakai
 Ms. Yamada TOP next-door GEN son NOM young
 oyome-san o morat-ta] no o tyoonai no
 bride ACC get-PAST NMLZ ACC neighborhood GEN
 huzin-kai ni kanyuu-si-yoo to si-ta.
 women’s club DAT talk.into.joining-tried
 ‘Ms. Yamada tried to talk the young bride of her neighbor’s son into
 joining the neighborhood women’s club.’
- b. # Yamada-san wa [otonari no musuko-san ga
 Ms. Yamada TOP next-door GEN son NOM
 kekkon-si-ta] no o tyoonai no huzin-kai ni
 get.married-PAST NMLZ ACC neighborhood GEN women’s club DAT
 kanyuu-si-yoo to si-ta.
 talk.into.joining-tried
 intended: ‘Ms. Yamada tried to talk the young bride of her neighbor’s
 son into joining the neighborhood women’s club.’

With Japanese null pronouns (and overt pronouns as well), we find the same kind of contrast:

- (13) a. Otonari no musuko-san ga wakai oyome-san o morat-ta
 next-door GEN son NOM young bride ACC get-PAST
 no de, Yamada-san wa \emptyset tyoonai no huzin-kai ni
 since Ms. Yamada TOP neighborhood GEN women’s club DAT
 kanyuu-si-yoo to si-ta.
 talk.into.joining-tried

‘Since the neighbor’s son married a young bride, Ms. Yamada tried to talk (her) into joining the neighborhood women’s club.’

- b. # Otonari no musuko-san ga kekkon-si-ta no de,
 next-door GEN son NOM get.married-PAST since
 Yamada-san wa \emptyset tyoonai no huzin-kai ni
 Ms. Yamada TOP neighborhood GEN women’s club DAT
 kanyuu-si-yoo to si-ta.
 talk.into.joining-trying

intended: ‘Since the neighbor’s son got married, Ms. Yamada tried to talk (his wife) into joining the neighborhood women’s club.’

Here, if the wife/bride is not explicitly mentioned in the ‘since’ clause, then there is no overt antecedent for the null pronoun to refer back to. When she is mentioned, in (13a), the sentence is acceptable, and when she is not, in (13b), the sentence is unacceptable. As it turns out, however, there are counterexamples to the simple generalization that the ‘antecedent’ of an anaphoric expression must be linguistically expressed, as noted by Nomura (2000) for the IHRC. A naturally-occurring IHRC counterexample is given in (14),⁷ and a null pronoun counterexample is given in (15).

- (14) [Genryoo no haigoo o daizu nana-wari, komugi ni-wari, fusuma
 ingredients GEN ratio ACC soy,bean 70% wheat 20% bran
 iti-wari ni suru] no ga mukasi no azi ni itiban tikai.
 10% DAT make NMLZ NOM old GEN taste DAT most close
 ‘Making the ratio of the ingredients 70% soy bean, 20% wheat and 10%
 bran will make soy sauce (?) that tastes most like traditional ones.’ (Nikkei
 Shinbun, slightly simplified, 1993?)
- (15) Kekkonsi-te iru hito wa, [\emptyset ie de yuuhan no sitaku o
 married be person TOP home LOC dinner GEN preparation ACC
 si-te mat-te iru] kara, amari osoku made zangyoo deki-nai.
 do wait PROG because very late till overtime.work can.do-NEG
 ‘Those who are married can’t stay too late working overtime since (their
 wives) are preparing dinner and waiting for them.’

In the IHRC example, soy sauce is never explicitly mentioned, only the ratio of its ingredients, and yet the IHRC is easily understood as referring to the soy sauce, not any of its ingredients. In the null pronoun example, the wives of the employees are not explicitly mentioned but are nevertheless understood as preparing dinner and waiting for their husbands. While the conditions under which a formal link is necessary remain obscure, it is clear that sentences containing IHRCs and those containing null pronouns once again pattern together in both their general adherence to the formal link constraint and their contextual lack thereof.

Finally, returning to the point alluded to at the end of section 3, covariational interpretations are not limited to IHRCs. Null pronouns in Japanese are

⁷There is a possibility that (14) is not a case of the IHRC construction, given that the nominalizer *no* can be replaced by an ordinary noun such as *resipi* ‘recipe’ in this sentence (such is not the case with other genuine cases of the IHRC). (Thanks to Shūichi Yatabe for pointing this out to us). Even if this specific example is inadequate for that reason, there are cases of the IHRC that do not conform to the formal link constraint for which such a replacement is not possible, like the examples that are discussed in Nomura (2000:section 4.4.2.1.).

also known to exhibit covariational readings (Kurafuji 1998), as the following Japanese version of a ‘paycheck sentence’ with a null pronoun illustrates:

- (16) Otoko no ko wa mina [zibun ga morat-ta] tegami o
 male GEN child TOP all self NOM receive-PAST letter ACC
 sugu ni sute-te simat-ta ga, onna no ko wa mina \emptyset
 immediately discard EMPH-PAST but female GEN child TOP all
 daizi ni tot-te oi-ta.
 carefully keep put-PAST
 ‘Every boy immediately threw away the letter he received, but every girl
 carefully kept (it).’

In this sentence, the null pronoun in the second clause does not refer to any specific letter since the letter in question covaries with each girl that is under consideration; rather, its meaning is understood as something like ‘the letter that x received’ where x is bound by the subject quantifier.

In this section, we have seen the following similarities between the null pronoun and the IHRC.

- The interpretation of both is context-dependent.
- Maximal and nonmaximal interpretations are possible for each (with maximal interpretations forced by numerical classifiers and quantifiers with existential presuppositions).
- Both generally adhere to the formal link constraint, but exhibit similar violations.
- Covariational readings are available for both.

As a result, we hypothesize that the anaphoric relation involved in the interpretation of IHRCs is the same as the one involved in the interpretation of ‘null pronouns’ in Japanese.

Particularly in light of the fact that indefinite readings are prevalent with null pronouns, an account of them exclusively in terms of E-type anaphora is unwarranted. That means that a uniform E-type analysis (where both IHRCs and null pronouns are treated as exclusively E-type) is also implausible. The only other recourse for preserving the E-type approach for IHRCs is a disjoint analysis wherein the E-type analysis is retained for IHRCs but not posited for null pronouns, which would fail to explain the parallels we have seen above. Therefore, in light of these parallels between IHRCs and null pronouns, the implausibility of E-type analyses for IHRCs is now even clearer.

5. Conclusion

In this paper, we first saw how the IHRC construction poses a puzzle for semantic interpretation and how previous authors motivated treatments in terms of E-type anaphora. We then looked at one such approach in more detail (Shimoyama 1999) before turning to heretofore unnoticed data that falsify its predictions. Previous analyses of the IHRC, where the E-type anaphora mechanism is hard-wired in the semantics of the construction, also fail to capture the empirical parallels between

IHRCs and null pronouns. Though previous authors were insightful in discovering that anaphora is crucially involved in the interpretation of the IHRC, their analyses do not shed any light on the question of why an anaphoric process constitutes a crucial component of the interpretation of IHRCs. Furthermore, the artificiality of analyzing IHRCs along the lines of disguised definite descriptions is highlighted by the fact that other Japanese nominal expressions such as null pronouns as well as bare nominals are typically underspecified for definiteness. In other words, why import a theoretical device used to analyze definites in English into a language that typologically doesn't seem to make a definite/indefinite contrast?

Thus, given the inadequacies of the E-type approach and the striking parallel between IHRCs and null pronouns, we conclude that the anaphoric relation found in these two phenomena should be given a unified account, whatever the exact nature of that anaphoric relation turns out to be. Although space limitations preclude detailed discussion, given the findings of this paper, we speculate that the following is a promising future direction. When one compares the surface forms of sentences containing IHRCs and those involving null pronouns, what is common between them is that an overt nominal expression that fills an argument position of the (matrix) predicate is missing. Thus, a theory of the compositional semantics of 'missing elements' needs to be developed to give adequate treatments of these constructions. We believe that a truly explanatory account of IHRCs (and null pronouns) will be obtained once that theory of missing elements is fleshed out in sufficient detail with special attention paid to the interaction between their semantics and pragmatics.

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