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# Internally Headed Relatives Parallel Direct Perception Complements*

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## 1. Introduction

It has been noted in the literature that in Korean, the Internally Headed Relative Clause Construction (henceforth IHRC) and the Direct Perception Construction (henceforth DPC) take an identical syntactic form (e.g. N.-K. Kim 1984, B. Park 1994, Jhang 1994, Chung 1999, Chung and Kim 2003, M.-J. Kim to appear):[1] In both constructions, the complement of the embedding predicate consists of a gapless relative clause and a grammatical element *kes*, as illustrated in (1) and (2), respectively.[2]

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[1] As far as I am aware, this parallel is also found in Japanese (Makoto Kadowaki and Chisato Kitagawa personal communication) and the dialects of Quechua (Lefebvre and Muyskin 1988).

[2] In Korean, the relative marker *–nun* inflects for the tense/aspect of the embedded clause: *–nun* denotes imperfective aspect, *–(u)n* perfect/perfective, and *–(u)l* prospective.

(1) Internally Headed Relative Clause Construction (IHRC)

John-un [[totwuk-i tomangka]-**nun** **kes**]-ul
J.-top [[thief-nom run.away]-**rel.imprf** **kes**]-acc
**cap-ess-ta**
**catch-pst-decl**
'John caught a/the thief running away.'

(2) Direct Perception Construction (DPC)

John-un [[totwuk-i tomangka]-**nun** **kes**]-ul
J.-top [[thief-nom run.away]-**rel.imprf** **kes**]-acc
**po-ess-ta**
**see-pst-decl**
'John saw the event of a/the thief running away.'

Despite their identical surface form, however, the two constructions have been classified separately and, to my knowledge, the relationship between them has not been much studied in a systematic way (but see M.-J. Kim to appear). In fact, the DPC has been often treated as a kind of factive propositional attitude construction, as illustrated in (5) (e.g. Kim 1984, Jhang 1994, Chung and Kim 2003). In my understanding, this separate classification is due to the fact that the complements of the two constructions receive different interpretations: the IHRC complement receives an entity interpretation such as the thief, as shown in (1), whereas the DPC complement receives an eventuality interpretation such as the event of a/the thief running away, as shown in (2).

In this paper, I show that this interpretive difference between IHRC and DPC complements is only apparent; it merely reflects the embedding predicate's selectional properties, that is, entity-selecting vs. eventuality-selecting. By drawing on more substantive parallels between the two constructions than their surface form, and by bringing together the insights of previous research on each construction (e.g., Shimoyama 1999, Basilico 2003), I argue that they have an identical syntax and semantics. The gist of the proposal is that (i) their complements have a DP structure which consists of an event-denoting small clause and a pronominal definite description *kes* and (ii) the small clause provides the descriptive content for *kes*, whereby getting indirectly linked to the embedding clause (compare Hoshi 1996, Shimoyama 1999, Chung and Kim 2003). I show that by treating *kes* as a pronominal definite description, we can derive the apparently different interpretations of IHRC and DPC complements in a unified way.

In Section 2, I discuss the parallel between the IHRC and the DPC. In this section, I also show that the DPC differs from the factive propositional

attitude construction, challenging the prevailing view in the literature. In Section 3, I propose a syntactic and semantic analysis of the IHRC and the DPC, which essentially unifies the two constructions. In Section 4, I return to the common properties of the two constructions outlined in Section 2 and show how they follow from the proposed analysis. Finally, Section 5 summarizes and concludes the paper.

## 2. The parallel between the IHRC and the DPC

As far as I am aware, the similarity between the IHRC and the DPC has not been much discussed in the literature beyond noting their surface parallel. In this section, I show that they are alike in at least three aspects. In addition, I show that these parallels are not shared by other constructions that have the same form such as factive propositional complements and psych-predicate complements.

First, as noted by several authors, the embedded clause of the IHRC cannot contain an I(ndividual)-level predicate in the sense of Carlson (1977), i.e., a predicate that denotes a (semi) permanent property of an individual (see Matsuda 2002, Y.-B. Kim 2002, Chung and Kim 2003, C.-M. Lee 2001, M. Lee 2003). This property is illustrated in (3).

(3) *John-un [ku yeca-ka **yeppu**]-n kes-ul
J.-top [that woman-nom **pretty**]-rel kes-acc
**tallay-ess-ta**
**comfort-pst-decl**
Intended: 'John comforted the woman who was pretty.'

Note that this restriction also holds for the DPC complement, as illustrated in (4), but not for the complements of factive propositional attitude verbs or psych-predicates, even though they take the exactly identical syntactic form, as shown in (5) and (6). This suggests that the incompatibility with I-level predicates is not intrinsic to the gapless clause and *kes* string itself.

(4) *John-un [ku yeca-ka **yeppu**]-n kes-ul
J.-top [that woman-nom **pretty**]-rel kes-acc
**po-ess-ta**
**see-pst-decl**
Intended: 'John saw the woman who was pretty.'

(5) John-un [ku yeca-ka **yeppu**]-n kes-ul
J.-top [that woman-nom **pretty**]-rel kes-acc
**al-ess-ta**
**know-pst-decl**
'John knew that the woman was pretty.'

(6) Na-nun [John-I **chakha**-n kes]-I
I-top [J.-nom **good.hearted**-rel kes]-nom
maum-ey tun-ta
heart-loc come.in-decl
'I <u>like</u> John's being <u>good-hearted</u>.'

Second, as noted by M.-J. Kim (to appear), neither the IHRC nor the DPC allows the indicative mood marker *–ta* to occur in the embedded relative clause, as illustrated in (7) and (8).

(7) *John-un [totwuk-i tomangka-n-**ta**-nun
J.-top [thief-nom run.away-imprf-**ind**-rel.imprf
kes]-ul **cap-ess-ta**
kes]-acc **catch-pst-decl**
Intended: 'John <u>caught</u> the thief running away.'

(8) *John-un [totwuk-i tomangka-n-**ta**-nun
J.-top [thief-nom run.away-imprf-**ind**-rel.imprf
kes]-ul **po-ess-ta**
kes]-acc **see-pst-decl**
Intended: 'John <u>saw</u> the thief running away.'

Again, this property does not hold for the complements of factive propositional attitude verbs, as illustrated in (9), suggesting that this is a unique property of the IHRC and the DPC.

(9) John-un [totwuk-i tomangka-(n-**ta**-)nun
J.-top [thief-nom run.away-(imprf-**ind**-)rel.imprf
kes]-ul **al-ess-ta**
kes]-acc **knew-pst-decl**
'John <u>knew</u> that the thief was running away.'

Third, as noted by Kuroda (1992), in the IHRC, the embedded event time cannot be posterior to the embedding event time, as shown in (10).

(10) *John-un [Mary-ka ttena-**l** kes]-ul
J.-top [M.-nom leave-**rel.fut** kes]-acc
**cap-ess-ta**
**catch-pst-decl**
Intended: 'John <u>caught</u> Mary, <u>who will/would</u> be leaving.'

This temporal restriction also holds for DPC complements, as shown in (11), but not for factive complements, as shown in (12), again suggesting that it is

a defining property of the IHRC and the DPC, rather than the same string of words.

(11) *John-un [Mary-ka ttena-**l** kes]-ul
J.-top [M.-nom leave-**rel.fut** kes]-acc
**po-ess-ta**
**see-pst-decl**
Intended: 'John saw the event, where Mary will/would be leaving.'

(12) John-un [Mary-ka ttena-**l** kes]-ul
J.-top [M.-nom leave-**rel.fut** kes]-acc
**al-ess-ta**
**knew-pst-decl**
'John knew that Mary will/would be leaving.'

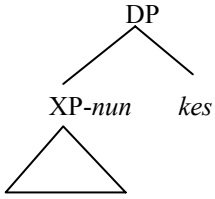
## 3. Analysis

In this section, I offer an analysis that unifies the IHRC and the DPC. The upshot of the proposal is that in both constructions, the complement consists of event-denoting clausal material and a pronominal definite description, and that this pronoun links the embedded clause to the embedding clause.

### 3.1. The syntax and semantics of the embedded clause

I propose that the embedded clause in the IHRC and the DPC, i.e. the relative clause that occurs preceding *kes*, consists of a functional projection that is smaller than a full clause. The exact label of this clause is immaterial to our purpose. Hence, to keep matters simple, I will label it as XP. This proposal is schematically represented in (13).

(13)




Support for this small clause analysis of the embedded clause comes from at least three sources. First, several authors have argued that the embedded clause of the IHRC carries only new information or informational focus (e.g. Chung and Kim 2003, M. Lee 2003), which is projected VP-internally (Kiss 1998) or at the left edge of VP (Valluví 1995). This is evidenced by the fact that IHRC complements do not tolerate topics, as shown in (14).

(14) ??/*John-i [**Mary-nun** ppang-ul kaci-e
J.-nom [**M.-nun** bread bring-comp
o]-n kes]-ul mek-ess-ta
aux-rel.prf kes]-acc eat-pst-decl
Intended: 'As for Mary, she brought bread and John ate it.'

If we assume that the information structure of a sentence is reflected in its syntactic structure, then we can infer from (14) that IHRC complements lack the functional projection that hosts topics or old information.

It has also been independently claimed that the IHRC and DPC complements instantiate a thetic judgment as opposed to a categorical judgment (Kuroda 1992, Matsuda 2002, H. Park 1998, Basilico 1998). Thetic judgments only contain the nuclear scope in the tripartite logical structure of Heim (1982), whereas categorial judgments contain a quantifier and its restrictive clause as well (von Fintel 1989). If we follow Diesing (1992) and assume that there is a direct syntax and semantics mapping, we are then led to conclude that a thetic judgment must have a smaller syntactic structure than a categorical judgment and hence a smaller logical structure as well.[3]

Further support for the present proposal comes from the event-sensitivity of the IHRC and the DPC. It has been suggested by several authors that the semantics of the IHRC involves describing a whole/scene relation (e.g. Ohara 1992) or a relation between two sets of eventualities (e.g. Kuroda 1992, Y.-B. Kim 2002, Matsuda 2002, Chung and Kim 2003). It has also been argued that the DPC in various languages describes a part-whole relation between two eventualities (e.g. Higginbotham 1983, Felser 1999, Basilico 2003). If these analyses are correct, then it follows that IHRC and DPC complements contain a truncated syntactic structure which receives an event-level, but not a world-level, interpretation.

### 3.2. The syntax and semantics of *kes*

Hoshi (1996) and Shimoyama (1999) propose that the Japanese counterpart of *kes*, i.e. *no*, instantiates a so-called E-type pronoun. The basis for this proposal is that *no* is interpreted in a way analogous to a typical E-type interpretation: the preceding relative clause sets up a context which provides a predicate-level restrictor for it.

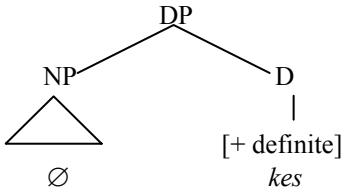
My analysis of *kes* builds upon these E-type pronoun analyses of *no*, but it diverges from them in its details. First, I propose that *kes* is a pronominal definite description, rather than an E-type pronoun. The motivation for this departure is that pronouns are inherently ambiguous and hence can behave

[3] For discussion of thetic vs. categorical distinction and their cross-linguistic manifestations, see, among others, Ladusaw 2000 and references therein.

like bound variables or E-type pronouns depending on the syntactic environment in which they occur (see Elbourne 2002 for similar arguments for English pronouns). With this pronoun analysis of *kes*, we can now capture the semantic variability of *kes* in various syntactic environments without any stipulation, thereby overcoming the shortcomings of the previous E-type pronoun analyses (see Kitagawa 2002 for a critique of these analyses).

Second, unlike the previous analyses which analyze *no* or *kes* as a nominalizer, I propose that it is a pronoun that spells out a definite article and its elided NP sister (modulo the licensing conditions for NP ellipsis) (compare Chung and Kim 2003). This idea is represented in (15), where ∅ stands for a phonologically null element. [4]

(15)




Support for the definiteness of *kes* in the IHRC and the DPC comes from the fact that *kes* is always interpreted as referring to a unique, maximal entity that has a salient property recovered from the context which is provided by the embedded relative clause (see Hoshi 1996, Shimoyama 1999 for Japanese IHRC).

To illustrate this, consider (16) and (17). In (16), *kes* is interpreted to refer to all the cookies that Mary put in the box, not just some of them. Hence the sentence will be judged false if it is uttered in a context where John ate only three cookies.[5] Similarly, in (17), *kes* refers to the unique sound of the event where the thief was running away.

| | | | | |
|---|---|---|---|---|
| (16) | John-un | [[Mary-ka | sangca-ey | kwaca-lul **tases-kay** |
| | J.-top | [[M.-nom | box-loc | cookie-acc **five-CL** |
| | noh-a | twu]-n | | **kes**]-ul mek-ess-ta |
| | put-comp | aux]-rel.pst | | **kes**]-acc eat-pst-decl |

'Mary put <u>five</u> cookies in the box and John ate <u>them</u>.'

[4] See Elbourne 2002 for a similar treatment of English pronouns.

[5] Hoshi (1996) and Shimoyama (1999) offer similar observations about the Japanese IHRC.

(17) John-un [[totwuk-i tomangka]-nun **kes**]-ul
J.-top [[thief-nom run.away]-rel.imprf **kes**]-acc
tul-ess-ta
hear-pst-decl
'The thief was running away and John heard it.'

Turning now to the semantics of *kes*, I adopt Chierchia's (1995:221) treatment of definite descriptions; the previous E-type pronoun analyses adopt versions of Cooper's (1979) analysis. This is to capture the fact that the denotation of *kes* stands in a relation to the content of the embedded clause.

Under the present proposal, *kes* is a spell out of a definite article with an elided NP sister. According to Chierchia, the denotation of *the NP* in English can contain a relational free variable and its arguments, as given in (18).

(18) $\iota x[R_w(y_{1..n}, x) \& N_w(x)]$, where *R, y* are free variables.

Under this view, the denotation of the NP is something like 'the unique (maximal) individual x such that x stands in an R relation with a contextually salient individual y and x has the property N.

Extending this approach to the definite descriptions in Korean, I propose (19) as the denotation of *kes* (ignoring the world variable and the indices in Chierchia's original proposal).

(19) $\iota x[R(x, y) \& P(x)]$, where *R, P, y* are free variables, and R is a relation that holds between individuals, i.e. entities and eventualities, and P corresponds to the denotation of the elided NP sister of the definite article.

I assume that these free variables' values are determined by the context which is set up by the embedded clause, in conjunction with the embedding predicate's selectional properties.[6] What this means is that if the embedding predicate selects for an entity-denoting element, then *kes* will denote an entity; if the embedding predicate selects for an eventuality, then *kes* will denote an eventuality. The first case instantiates the IHRC and the second case instantiates the DPC.

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[6] This bears on the problem of 'formal link,' which refers to the phenomenon where the antecedent of the predicate-level restrictor for the definite article inside an E-type pronoun must be linguistically present in the preceding sentence (for details, see Kadomon 1987, Elbourne 2002 and references therein). For a possible solution to the formal linking problem of the Korean IHRC, see M.-J. Kim 2003.

### 3.3. Application of the present proposal

We are now ready to apply the present proposal to actual sentences and derive their truth-conditions. Consider first (20) and (21).

(20) John-un [[totwuk-i tomangka]-nun kes]-ul
J.-top [[thief-nom run.away]-rel.imprf kes]-acc
**cap**-ess-ta
**catch**-pst-decl
'John caught a/the thief running away.'

(21) John-un [[totwuk-i tomangka]-nun kes]-ul
J.-top [[thief-nom run.away]-rel.imprf kes]-acc
**po**-ess-ta
**see**-pst-decl
'John saw the event of a/the thief running away.'

Given the selectional properties of the embedding predicate and the context provided by the embedded clause, our intuitions tell us that the *kes* in (20) should be interpreted as something like (22) and that in (21) as something like (23).

(22) $\iota_e x$[Agent(x, e) & thief(x)] (this reads as 'the unique x such that x is the Agent of the event e and x has the property of being a thief')

(23) $\iota_e x$[visual aspect(x, e) & scene(x)] (this reads as 'the unique x such that x is the visual aspect of the event e and x has the property of being a scene')

Applying these interpretations of *kes* to the semantics of the entire sentences, we arrive at (24) and (25) as the truth-conditions for (20) and (21), respectively.[7]

(24) $\exists e_1 \exists x$[running away($e_1$) & Agent(x)($e_1$) & thief(x) & $\exists e_2$[**catch**($e_2$) & Agent(John)($e_2$) & **Theme($\iota_e u$Agent(u, $e_1$) & thief(u))($e_2$)**].

(This reads as 'there is an event $e_1$ and an entity x such that $e_1$ is an running away event and the agent of $e_1$ is x and x is a thief and there is another event $e_2$ such that $e_2$ is a catching event and its agent is John and its theme is the unique u such that u is the Agent of the event $e_1$ and u has the property of being a thief.)

[7] Here I ignore the semantic contribution of tense/aspect. In addition, I abstract away from the relation between the embedded event and the embedding event.

(25) $\exists e_1 \exists x$[running away($e_1$) & Agent(x)($e_1$) & thief(x) & & $\exists e_2$[**see**($e_2$) & Agent(John)($e_2$) & **Theme($\iota_e$uVisual aspect(u, $e_1$) & scene(u))($e_2$)**].

(This reads as 'there is an event $e_1$ and an entity x such that $e_1$ is an running away event and the agent of $e_1$ is x and x is a thief and there is another event $e_2$ such that $e_2$ is a seeing event and its agent is John and its theme is the unique u such that u is the visual aspect of the event $e_1$ and u has the property of being a scene.)

These truth-conditions are compatible with native speakers' intuitions about the meanings of (20) and (21), suggesting that the present analysis of *kes* is on the right track. They also show that the semantics of the IHRC and the DPC can be derived via the same mechanism. Although the truth-conditions given in (24) and (25) may seem differ from each other, they are essentially identical. In one case, *kes* refers to an entity and in the other case, it refers to an eventuality or the perceptual aspect thereof. Under the proposed analysis, this semantic variability of *kes* is in fact expected; being a pronoun, it can refer to an entity or an eventuality, depending on the semantics of the predicate that selects for it. Given this, we can conclude that the IHRC and the DPC have an identical semantics; that is, they both connect two sets of eventualities via a pronominal definite description.

## 4. Explaining the common properties of the two constructions

Let us now return to the parallels between the IHRC and the DPC which were outlined in Section 2 and see how they follow from the proposed analysis.

The first and the second common properties of the two constructions follow from the truncated syntactic structure of the embedded clause. The embedded clause cannot contain an I-level predicate, because I-level predicates ascribe permanent properties to individuals and hence can only occur in a categorical statement, for it has a tripartite logical structure in the sense of Heim (1982) (von Fintel 1989, Diesing 1992). Similarly, the embedded clause cannot tolerate indicative mood, because mood is concerned with the illocutionary force of the sentence and hence can only occur in a fully-blown clausal structure.

On the other hand, the temporal restriction on the embedded clause follows from the way in which *kes* is interpreted. If the embedded event time is posterior to the embedding event time, then *kes* will refer to a unique individual which stands in a relation to an event which has not occurred at the time of the embedding event. But when *kes* receives such an interpretation, the sentence cannot be interpreted, as shown in (10) and (11). This is illustrated by (26) and (27), which paraphrase (10) and (11).

(26) #There will be an event of Mary leaving and John caught her in that event.

(27) #There will be an event of Mary leaving and John saw the scene of that event.

These interpretations are anomalous, since due to our physical limitations, we cannot catch or perceive an individual which is part of a future event.

**5. Summary and Conclusion**

In this paper, I compared the IHRC and the DPC, which have been treated as separate constructions. I claimed that they have an identical syntax and semantics and hence need to be subsumed under the same category. I proposed that the complements of these constructions are DPs which consist of an event-denoting small clause and a pronominal definite description *kes*. I argued that the small clause sets up a context which provides a predicate level restrictor for *kes* and this way it gets indirectly linked to an event-level denotation of the embedded clause. If correct, these findings suggest a strong connection between the IHRC/DPC and small clauses.

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