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). 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).2

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1 As far as I am aware, this parallel is also found in Japanese (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, –(a)n perfect/perfective, and –(a)/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 surface identical form, however, to my knowledge, the relationship between the two constructions 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 (e.g. Kim 1984, Jhang 1994, Chung and Kim 2003). The reason is that, due to the different selectional properties of the embedding predicates, the complements receive different interpretations: in the IHRC, the complement is interpreted to denote an entity, e.g. a/the thief in (1), and in the DPC, it is interpreted to denote an eventuality, e.g. the event of a/the thief running away in (2).

In this paper, I claim that the IHRC and the DPC should be subsumed under the same category based on their syntactic and semantic parallels. I propose (i) that the IHRC and the DPC complements consist of a small clause and a pronominal definite description kes and (ii) that the small clause provides the descriptive content for the pronoun (compare Hoshi 1996, Shimoyama 1999, Chung and Kim 2003). By treating kes as a pronoun, I show that the apparently different interpretations of IHRC and DPC complements can be derived 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 both a syntactic and semantic analysis that unifies the two constructions. In Section 4, I return to the common properties of the two constructions outlined in Section 2 and show that they follow from the proposed analysis. Finally, Section 5 summarizes and concludes the paper.
2. The parallel between the IHRC and the DPC

The IHRC and the DPC are alike in at least three aspects. First, as noted by several authors (e.g. Matsuda 2002, Y.-B. Kim 2002, Chung and Kim 2003, C.-M. Lee 2001, M. Lee 2003), the embedded clause of the IHRC is not compatible with (individual)-level predicates in the sense of Carlson (1977): The embedded predicate cannot denote a (semi) permanent property of an individual. 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 embedded clause of the DPC, as illustrated in (4), but not for the complements of factive propositional attitude verbs or psych-predicates, although they also take the same 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 like John’s being good-hearted.’

The next parallel between the IHRC and the DPC is concerned with the non-occurrence of the indicative mood marker –*ta in the embedded relative clause, as illustrated in (7) and (8).
Again, this property does not hold for the complements of factive propositional attitude verbs, as illustrated in (9).

(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 knew 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).

    Intended: ‘John caught Mary, who will/would be leaving.’

Note that this temporal restriction also holds for DPC complements, as shown in (11), but not for factive complements, as shown in (12), suggesting that it is unique to the IHRC and the DPC.

    Intended: ‘John saw the event, where 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 the two constructions have an identical syntax and semantics: In both constructions, the complement consists of event-denoting clausal material and a pronominal definite description, and 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 relative clause in the IHRC and the DPC consists of a functional projection that is smaller than a full clause. This idea is schematically represented in (13), where XP refers to the embedded clause (for simplicity, I remain non-committal as to its exact label).

(13)

\[
\begin{array}{c}
\text{DP} \\
\text{XP-nun} \quad \text{kes}
\end{array}
\]

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 presumably projected VP-internally (Kiss 1998). What this suggests is that the embedded clause does not contain projections higher than VP. This is evidenced by the fact that it does not tolerate topics, as shown in (14).

(14) ??/*John-[Mary-nun] ppang-ul kaci-e
J-nom [M.-nun] bread bring-comp
o]-n kes]-ul mek-ess-ta
aux-relprf kes]-acc eat-pst-decl

Intended: ‘As for Mary, she brought bread and John ate it.’

The non-occurrence of topics in IHRC complements suggests that the relevant functional projection is absent in the structure; topics denote old information and they occur in a projection higher than VP (Heim 1982, von
Hence it is concluded that IHRC complements do not have a full clausal structure.

Second, it has been also 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 contain only the nuclear scope, whereas categorical judgments contain a quantifier and the 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 DPC. It has been suggested that the semantics IHRC involves describing a whole/scene relation (Ohara 1992) or a relation between two sets of eventualities (Kuroda 1992, Y.-B. Kim 2002, Matsuda 2002, Chung and Kim 2003). It has also been argued that cross-linguistically, the DPC describes a part-whole relation between two eventualities (e.g. Higginbotham 1983, Felser 1999, Basilico 2003). If these analyses are correct, it then follows that IHRC and DPC complements contain a truncated syntactic structure which receives an event-level, not a world-level, interpretation.

3.2. The syntax and semantics of kes
Hoshi (1996) and Shimoyama (1999) made an insightful observation that the Japanese counterpart of kes, i.e. no, instantiates a so-called E-type pronoun. Building upon this insight, I propose that kes is a definite description. But, unlike these previous analyses, I argue that kes is a pronoun, rather than an E-type pronoun. The reason for this departure is that, as argued in Elbourne 2002, pronouns are inherently ambiguous and hence can behave like bound variables or E-type pronouns depending on the syntactic environment in which they occur. With this pronoun analysis of kes, we can now capture the semantic variability of kes in various syntactic environments with no stipulation, thereby overcoming the shortcomings of the previous E-type pronoun analyses (see Kitagawa 2002 for their critique).

I also diverge from the previous E-type pronoun analyses on the following accounts. First, concerning the syntactic structure of kes, I propose that kes spells out a definite article with an elided NP sister whatever licenses NP ellipsis (compare Chung and Kim 2003), as represented in (15) (here \(\emptyset\) stands for a phonologically null element).4

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3 For discussion of thetic vs. categorical distinction and their cross-linguistic manifestations, see, among others, Ladusaw 2000 and references therein.
4 See Elbourne 2002 for a similar treatment of English pronouns.
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 which is recovered from the context provided by the embedded relative clause (see Hoshi 1996, Shimoyama 1999 for Japanese IHRC).

To illustrate, 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. 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* noh-a twu]-n *kes*-ul mek-ess-ta put-comp aux]-rel.pst *kes*-acc eat-pst-decl ‘Mary put five cookies in the box and John ate them.’

(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 in English. 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) $\tau x[R_x(y_1..n, x) \land N_x(x)]$, 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 $N$.

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3 Hoshi (1996) and Shimoyama (1999) made similar observations about the Japanese IHRC.
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) \( \xi[R(x, y) \land P(x)] \), 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: 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 instantiates the DPC.

### 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 to mangka]-nun kes]-ul
J.-top [[thief-nom run.away]-rel.imprf kes]-acc
\textit{cap}-ess-ta
\textit{catch}-pst-decl
‘John caught a/the thief running away.’

(21) John-un [[totwuk-i to mangka]-nun kes]-ul
J.-top [[thief-nom run.away]-rel.imprf kes]-acc
\textit{po}-ess-ta
\textit{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 denotation of *kes* in (20) would be something like (22) and that in (21) would be something like (23).

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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 the formal linking problem in Korean IHRC, M.-J. Kim 2003 offers a possible solution.
Applying these denotations of *kes* to the semantics of the entire sentences, we arrive at (24) and (25) as the truth-conditions of (20) and (21), respectively.7

(24)  \( \exists e_1 [\text{running away}(e_1) \land \text{Agent}(\text{a thief})(e_1) \land \exists e_2 [\text{catch}(e_2) \land \text{Agent}(\text{John})(e_2) \land \text{Theme}(\iota u, \text{Agent}(u, e_1) \land \text{thief}(u))(e_2)]]. \)

(25)  \( \exists e_1 [\text{running away}(e_1) \land \text{Agent}(\text{a thief})(e_1) \land \exists e_2 [\text{see}(e_2) \land \text{Agent}(\text{John})(e_2) \land \text{Theme}(\iota u, \text{visual aspect}(u, e_1) \land \text{scene}(u))(e_2)]]. \)

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. Notice that these truth-conditions are identical except for the highlighted parts. But this difference merely reflects the selectional properties of the embedding predicate. Hence, we can conclude that the semantics of IHRC and DPC complements are identical: they both involve connecting two 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 presented 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, which 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 concerns 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

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7 Here I ignore the semantic contribution of tense/aspect and abstract away from the relation between the embedded event and the embedding event and how it is derived.
time is later than the embedding event time, as shown in (10) and (11), 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 (26) and (27); due to our physical limitations, we cannot catch or 
perceive an individual that is part of a future event.

(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.

5. Summary and Conclusion
The goal of this paper was to establish that the IHRC and the DPC have an 
identical syntax and semantics and hence need to be subsumed under the 
same category. I proposed that in both constructions, the complement 
consists of an eventuality-denoting small clause and a pronoun kes. By 
analyzing kes as a definite description whose descriptive content is provided 
by the small clause, I showed that the semantics of the two constructions 
can be derived in a uniform way. The findings of the present paper suggest 
a profound connection between the IHRC and small clauses.

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