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).[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, *–(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 <u>caught</u> 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 <u>saw</u> 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 I(ndividual)-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 <u>comforted</u> the woman who was <u>pretty</u>.'

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 <u>saw</u> the woman who was <u>pretty</u>.'

(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 <u>knew</u> that the woman was <u>pretty</u>.'

(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>.'

    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).

(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).

(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.'

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.

(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 <u>saw</u> the event, where Mary <u>will/would</u> 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 <u>knew</u> that Mary <u>will/would</u> 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)   DP
                   /\
                  / \
            XP-*nun*   *kes*
              /\
             / \
            /____\
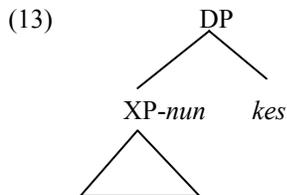
    Support for this small clause analysis of the embedded clause comes from at least three sources. First, several authors have argued that the embedded clause of the IHRC carries only new information or informational focus (e.g. Chung and Kim 2003, M. Lee 2003), which is presumably projected VP-internally (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-i   [**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

Fintel 1989, Diesing 1992). 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 categorial 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 ∅ 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.

(15)

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              DP
            /    \
         NP        D
        /\         |
       /  \     [+ definite]
      ∅        kes
```
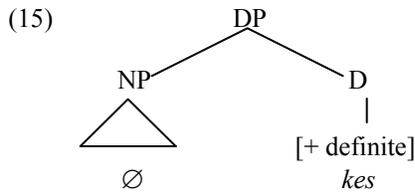
   Support for the definiteness of *kes* in the IHRC and the DPC comes
from the fact that *kes* is always interpreted as referring to a unique, maximal
entity that has a salient property which is recovered from the context
provided by the embedded relative clause (see Hoshi 1996, Shimoyama
1999 for Japanese 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.[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>.'

(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 <u>it</u>.'

   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) $\iota x[R_w(y_{1..n}, x) \wedge N_w(x)]$, 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.

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[5] 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) $\iota x[R(x, y) \wedge P(x)]$, 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] 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   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 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.

(22) $\iota_e x[\text{Agent}(x, e) \wedge \text{thief}(x)]$ ('the unique x such that x is the Agent of the event e and x has the property of being a thief')

(23) $\iota_e x[\text{visual aspect}(x, e) \wedge \text{scene}(x)]$ ('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 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) $\exists e_1[\text{running away}(e_1) \wedge \text{Agent(a thief)}(e_1) \wedge \exists e_2[\textbf{catch}(e_2) \wedge \text{Agent(John)}(e_2) \wedge \textbf{Theme}(\boldsymbol{\iota_e}\textbf{uAgent(u, e}_1\textbf{)} \wedge \textbf{thief(u))(e}_2\textbf{)}]$.

(25) $\exists e_1[\text{running away}(e_1) \wedge \text{Agent(a thief)}(e_1) \wedge \exists e_2[\textbf{see}(e_2) \wedge \text{Agent(John)}(e_2) \wedge \textbf{Theme}(\boldsymbol{\iota_e}\textbf{uVisual aspect(u, e}_1\textbf{)} \wedge \textbf{scene(u))(e}_2\textbf{)}]$.

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 <u>her in that event.</u>

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

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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