Discourse Coherence and Relativization in Korean

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1 Introduction

It is widely accepted that the split between restrictive and nonrestrictive relatives generally coincides with their asymmetric contribution to discourse: restrictive relatives contribute content that is part of the main assertion of the sentence, while nonrestrictive relatives contribute content that is backgrounded or supplementary to the content of the main clause. Recent studies (Huddleston & Pullum 2002:1033-1065; Potts 2005:93-94), however, have argued that this traditional dichotomy along model-theoretic lines is not successful, offering evidence that some cases of nonrestrictive relative clauses do have equality of informational status with their main clauses (see, for example, Huddleston & Pullum (2002:1064)). In line with these studies, the present work argues that the model-theoretic properties of a relative clause (restrictive vs. nonrestrictive) and the kind of content it contributes (at-issue vs. supplementary) do not always go hand in hand.

In Korean, two different types of relative clauses can be identified on the basis of whether the nominal that functions as an argument in both the relative and the main clause (henceforth, anchor) is outside the relative or not. In Externally-Headed Relative Clauses (EHRCs) like (1) the anchor sakwa ‘apple’ occurs immediately after the relative clause and there is a missing element within the relative that is coreferential with the anchor. In Internally-Headed Relative Clauses (IHRCs) like (2), by contrast, the anchor is within the relative clause, while the “external head” position is occupied by a defective noun kes that obligatorily takes a verbal complement. (1) and (2) are adapted from M. Kim (2004:101).

(1) Minaka cepsiey issnun sakwalul mekessta. (EHRC)

Mina -ka [___ cepsi -ey iss -nun] sakwa_i -lul mek -ess -ta
Mina -NOM [___] plate -LOC exist -ADN.IPVF apple_i -ACC eat -PST -DECL

Restrictive: ‘Mina ate the apples that were on the plate.’
Nonrestrictive: ‘Mina ate the apples, which were on the plate.’

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1Abbreviations: ACC (accusative); ADN (adnominal); CLF (classifier); COMP (complementizer); CONJ (conjunction); DECL (declarative); EXCLAM (exclamative); HON (honorific); IPVF (imperfective); LOC (locative); NEG (negation); NMLZ (nominalizer); NOM (nominative); PRS (present); PST (past); PRF (perfect); Q (question); RETR (retrospective); TOP (topic)

2Unless stated otherwise, the data in this study are my own and have been judged by nine native speakers of Korean (two male and seven female; average age 30.9).
(2) Minaka sakwaka cepsiey issnum kesul mekessta. (IHRC)

Mina -ka [sakwa, -ka cepsi -ey iss -mun] kes_i -ul mek -ess -ta
Mina -NOM [apple_i -NOM plate -LOC exist -ADN.IPFV] entity_i -ACC eat -PST -DECL

Nonrestrictive: ‘Some apples were on the plate and Mina ate them (= the apples).’

EHRCs and IHRCs differ in their meaning. While IHRCs are always interpreted nonrestrictively, EHRCs are ambiguous between restrictive and nonrestrictive relatives when taken out of context. For example, the EHRC in (1) has a nonrestrictive interpretation if the contextual set of objects denoted by the anchor equals the set of objects that satisfy the description provided by the relative: that is, the apples Mina ate are all and exactly those apples that were on the plate. On the other hand, the relative has a restrictive interpretation if it describes a situation where there are more apples on the plate than those eaten by Mina.

This paper attempts to solve a long-standing puzzle that arises from an asymmetry in acceptability between EHRCs and IHRCs, namely that IHRCs are often less acceptable than their EHRC counterparts (Kuroda 1976; Fuji 1996; Shimoyama 1999, 2001; Y. Kim 1996, 2002; M. Kim 2004, 2007, 2008). There is agreement that this asymmetry stems from a requirement that an IHRC must enter a semantic or pragmatic relation with the main clause in order for it to be acceptable, but there is disagreement on what exactly this relation is. In the present work, I argue that the EHRC-IHRC asymmetry arises from the fact that IHRCs are acceptable if and only if a coherence relation (Hobbs 1985; Mann & Thompson 1988; Kehler 2002; Asher & Lascarides 2003) holds between the relative and the main clause.

The rest of the paper is organized as follows. In Section 2, I present data that illustrate acceptability contrast between EHRCs and their IHRC counterparts. I point out that, contra M. Kim (2004, 2007, 2008), the various relations that can hold between the eventuality described by an IHRC and the eventuality described by its main clause cannot be subsumed under the notion of simultaneity. In Section 3, I show that this seemingly disparate class of relations correspond in fact to independently motivated coherence relations, but that there is a restriction on the range of coherence relations that are possible between IHRCs and their main clauses. In Section 4, I take up the issue of why failure to enter into a coherence relation gives rise to unacceptability in the case of IHRCs but not in the case of EHRCs. My answer is that IHRCs are associated with an inherent discourse goal that is tied to their meaning, and that this goal can only be achieved through the establishment of a coherence relation between the relative and the main clause. In Section 5, I summarize the major findings of this study.

2 Asymmetry between EHRCs and IHRCs

Since Kuroda (1976), studies on IHRCs in Japanese and Korean have agreed that IHRCs are subject to a condition whereby the relative clause is interpreted in relation to the content of the main clause. Kuroda distinguishes among several different relations that can license IHRCs (co-temporal, co-locational, purposive, causal), but many other studies (Fuji 1996; M. Kim 2007, 2008) assume that it is the co-temporal relation that is responsible for the licensing of IHRCs. The latter theory is encapsulated by the Simultaneity Condition in (3).
In order for an IHRC to be acceptable, it must be interpreted in such a way that the eventuality described by the relative temporally overlaps with the eventuality described by the main clause.

In the present study, I consider the following two hypotheses.

- **Hypothesis 1.** The Simultaneity Condition is the necessary and sufficient condition for the licensing of IHRCs.

- **Hypothesis 2.** The Simultaneity Condition is only a sufficient condition for the licensing of IHRCs.

Hypothesis 1 is proposed by Fuji (1996) and M. Kim (2007, 2008), among others. These studies essentially view licensing IHRCs as a problem of characterizing the notion of simultaneity in semantic terms. Hypothesis 2 is put forward by Kuroda (1976) and Y. Kim (1996), who argue that there are various pragmatic relations that can license IHRCs. In the remainder of this section, I provide a discussion on Hypothesis 1, focusing on M. Kim’s rendition of the Simultaneity Condition, and give arguments against it.

Assuming Hypothesis 1, the acceptability of (2) above is dependent on the availability of a simultaneous reading, where the event of Mina’s eating apples is directly related to the state of these apples being on the plate ‘at the moment of the eating event’. While the EHRC counterpart in (1) also entails that there is a temporal overlap between the eventualities described by the relative and the main clause, due to the imperfective aspect of the relative clause’s predicate, the underlying assumption is that such temporal entailment is orthogonal to the licensing of EHRCs.

Typical examples used to support Hypothesis 1 are provided in (4)-(5). Note that these sentences are string identical to (1) and (2) except for the grammatical aspect of the relative clauses’ predicates and the temporal adverbs ecey ‘yesterday’ and onul ‘today’.

(4) Minaka ecey cepsiey iss ten sakwalul onul mekessta. (EHRC)

Restrictive: ‘Mina ate the apples today that had been on the plate yesterday.’

Nonrestrictive: ‘Mina ate the apples today, which had been on the plate yesterday.’

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3 M. Kim (2008) additionally assumes an optional pragmatic constraint that licenses additional readings (circumstantial, cause-effect, concessive) on top of the simultaneous reading licensed by an obligatory grammatical condition. Since the acceptability of IHRCs is explained solely by the grammatical condition, M. Kim’s (2008) proposal is essentially the same as M. Kim’s (2007).

4 Embedded stative verbs in Korean take the retrospective marker (-ten) to refer to eventualities that are perceived to have taken place prior to speech time (Sohn 1995:41).
(5) ?Minaka sakwaka ecey cepsiy isssten kesul onul mekessta. (IHRC)

Mina -ka [sakwa, -ka ecey cepsi -ey iss -ten] kes, -ul
Mina -NOM [apple, -NOM yesterday plate -LOC exist -ADN.RETR] entity, -ACC
onul mek -ess -ta
today eat -PST -DECL

(Some apples were on the plate yesterday and Mina ate them (= the apples) today.)

Despite the fact that (4) and (5) are parallel in content, (5) is less acceptable than (4). This observation fits well with Hypothesis 1, which attributes the oddness of (5) to the violation of the Simultaneity Condition.

Another example that lends support to Hypothesis 1 is given in (6) (Y. Kim 2002:551), which differs from (5) in the telicity of the predicate within the relative (iss ‘to exist’ vs. tteleci ‘to fall’). Under the standard assumption that telic events have a natural endpoint that holds forever after the culmination of the event (Kratzer 1994), the Simultaneity Condition is met in (6) but not in (5).

(6) Mary-nun sakwaka ecey ttelecin kesul onul achimey cipe tulessta. (IHRC)

Mary -mun [sakwa -ka ecey tteleci -n] kes -ul onul achimey
Mary -TOP [apple -NOM yesterday fall -ADN.PRF] entity -ACC today morning
cipetul -ess -ta
pick.up -PST -DECL

(Some apples fell (from the tree) yesterday and Mary picked them (= the fallen apples) up today.)

M. Kim (2007, 2008) offers one of the most sophisticated semantic justification of Hypothesis 1. She explains the apparent effect of telicity and grammatical aspect on the acceptability of IHRCs on the basis of Parsons (1990)-style theory of aspect. The following assumptions are crucial in her analysis: (i) IHRCs introduce a temporary state, (ii) the temporary state must overlap with the eventuality described by the main clause, and (iii) the anchor must bear a thematic role in that temporary state. This way of characterizing the notion of simultaneity preserves the essence of the Simultaneity Condition but it also enables making precise predictions about the acceptability of different IHRCs that vary in telicity and aspect. M. Kim defines the notion of temporary state as in (7).


a. An in-progress state is introduced by a progressive or imperfective predicate. It holds true of every individual that bears a thematic role during the runtime of the event.

b. A resultant state is introduced by a perfect predicate and it holds permanently after the culmination of the event. A perfect aspect on a telic predicate describes a target state in addition to a resultant state. While a resultant state holds true of the agent argument, a target state holds true of the theme argument.
Assuming M. Kim's account, the contrast between (5) and (6) is explained as follows. In (5) the relative clause has an imperfective predicate (M. Kim 2004:101) describing an in-progress state. This in-progress state does not overlap with the eventuality described by the main clause, and therefore the sentence is predicted to be unacceptable. In (6) the relative clause involves a perfect, telic predicate, in which case the relative introduces a target state as well as a resultant state. These states overlap with the eventuality described by the relative clause, and the anchor *sakwa* ‘apple’ bears a thematic role in both of these states; therefore, the acceptability of the sentence is correctly predicted.

However, M. Kim’s analysis is unsatisfactory in a number of respects. The first problem is that it cannot exclude IHRCs that are temporally coincident with their main clauses but describe an irrelevant eventuality. For example, M. Kim would predict (8) to be acceptable, because the relative clause introduces a target state as well as a resultant state, and the anchor *Jina* is an agent that a resultant state holds true of. However, (8) is odd, as will be discussed in Section 3, there is no obvious connection between Jina’s having finished a marathon yesterday and Swumi’s meeting her today.

(8) ?Swumika Jinaka ecey malathonul wancuhan kesul onul mannassta. (IHRC)

John -un [Mary -ka ecey inhyeng -ul halwu congol kaci -ko no]
Swumi -nom [Jina -nom yesterday marathon -acc finish -adn.prf entity
-ul onul manna -ass -ta
-acc today manna -ass -ta
-pst -decl

‘Mary played with a doll all day yesterday and John threw it (= the doll) away today.’

The second problem has to do with the fact that there are acceptable examples of IHRCs that do not satisfy the Simultaneity Condition. Under M. Kim’s analysis, examples like (9), taken from (M. Kim 2008:97), would be incorrectly predicted to be unacceptable since a resultant state is true of the agent, but not the theme, argument.

(9) Johnun Maryka ecey inhyengul halwu congol kaciko non kesul onul nayta peliessta. (IHRC)

John -top [Mary -nom yesterday doll -acc day long have -comp play
-n] kes, -ul onul nayta peli -ess -ta
-adn.prf entity -acc today take throw.away -pst -decl

‘Mary played with a doll all day yesterday and John threw it (= the doll) away today.’

Likewise, in (10) the relative clause describes an in-progress state which does not overlap with the eventuality described by the main clause, and yet the sentence is acceptable: the state of Minswu lying does not hold at the time his mother scolds him.

\[\text{Again, a proper contextualization can enhance the acceptability of (8). See Section 3.}\]

\[\text{In fact, (M. Kim 2008:97) judges (9) to be unacceptable but the native speakers I consulted invariably judged it acceptable, and commented that the sentence is very natural under a causal or purposive reading: e.g. John discovered a reason to throw the doll away today.}\]
(10) Emenikkeyse Minswuka ecey halwu congil nuwuemanissten kesul onul achim honnaysiessta. (IHRC)

Emeni -kkeyse [Minswu, -ka ecey halwu congil nuwue -man -iss
Mother -HON.NOM [Minswu, -NOM yesterday day long lie -only -prog
-tent] kes, -ul onul achim honnay -si -ess -ta
-ADN.RETR] entity, -ACC today morning scold -HON -PST -DECL

‘Minswu was lying (on his bed) all day yesterday and his mother scolded him (= Minswu) this morning.’

Data such as (9) and (10) show that the relation between IHRCs and their main clauses cannot always be merely temporal: there are other readings that cannot be covered if simultaneity is the only relation that is possible between IHRCs and their main clauses. Crucially, (9) is acceptable under a cause-effect interpretation where John’s throwing Mary’s doll away is possibly motivated by the fact that the doll was so dirty that John could not simply bear to see Mary play with it. Likewise, in (10) Minswu’s lying all day yesterday doing nothing provides a natural reason for his mother scolding him.

3 A Pragmatic Account of Korean IHRCs

I have shown that previous attempts at offering a semantic, simultaneity-based analysis of the relation between IHRCs and their main clauses have been unsuccessful. In this section, I propose a PRAGMATIC account of the relation between IHRCs and their main clauses that defends Hypothesis 2 mentioned at the beginning of Section 2. In doing so, I attempt to provide a principled characterization of the various relations between IHRCs and their main clauses within the context of theories of discourse coherence (Hobbs 1985; Mann & Thompson 1988; Kehler 2002; Asher & Lascarides 2003), while taking into account the semantics of IHRCs that imposes restrictions on the range of possible relations.

3.1 The pragmatic nature of the relation between IHRCs and their main clauses

I propose that the relation between IHRCs and their main clauses is only partially expressed. More specifically, I argue that, semantically, IHRCs and their main clauses are connected by a propositional connective and that the various interpretations of sentences instantiating an IHRC arise as a result of pragmatic enrichment. In this respect, my analysis is similar in spirit to Kay & Zimmer’s (1978) treatment of nominal compounds and genitive constructions, and Nishiyama & Koenig’s (2010) analysis of the English perfect. In Nishiyama & Koenig (2010:619) it is argued that the English perfect introduces a perfect state whose category is semantically a free variable, and the value of this variable is filled by pragmatic inferences. In a similar vein, I propose that the interpretation of sentences instantiating an IHRC arises as a result of inferences drawn by addressees on the interpretation of the propositional connective introduced by IHRCs. The fact that the nature of the constraint is pragmatic properly allows the particular relation or relations established between an IHRC and its main clause to be contingent on the knowledge of the addressee.
I start by presenting data in (8) (repeated in (11) below) and (12) that show that the relation between IHRCs and their main clauses is pragmatic in nature. As noted above, (11) is odd because there seems to be no natural connection between Swumi’s completing a marathon yesterday and Jina’s meeting her today. This is because, out of context, it is hard to think of why the meeting happened today, not yesterday, if the meeting had anything to do with the marathon; conversely, if the meeting had nothing to do with Jina’s marathon, why would the speaker bother to mention it? (12), on the other hand, provides information that can be used by addressees for drawing causal or circumstantial inferences by which the two described events can naturally be connected: the information that the interviewer was a journalist indicates that Lee’s completion of a marathon might be still newsworthy the day after the marathon took place. A purely semantic account cannot explain the contrast between (11) and (12), as these sentences are semantically parallel.

\[(11) \quad \text{Swumi}-ka \ [\text{Jina}, -ka \ ecey \ malathon-ul \ wancuha-n] \ \text{kes}_{i},\ \\
\quad \text{Swumi} -\text{NOM} \ [\text{Jina}, -\text{NOM} \ \text{yesterday} \ \text{marathon} -\text{ACC} \ \text{finish} \ -\text{ADN.PRF} \ \text{entity}_{i} \ \\
\quad -\text{ul} \ \text{onul} \ \text{manna} -\text{ass} \ -\text{ta} \ \\
\quad -\text{ACC} \ \text{today} \ \text{meet} \ -\text{PST} -\text{DECL} \ \\
\quad \text{‘Jina finished a marathon yesterday and Swumi met her (= Jina) today.’} \]

\[(12) \quad \text{Kim} \ \text{kica} -\text{ka} \ [\text{Lee}, \text{ssi}, -\text{ka} \ \text{ecey} \ \text{malathon-ul} \ \text{wancuha} \ \\
\quad \text{Kim} \ \text{journalist} -\text{NOM} \ [\text{Lee}, \text{Mr.}, -\text{NOM} \ \text{yesterday} \ \text{marathon} -\text{ACC} \ \text{finish} \ \\
\quad -\text{n}] \ \text{kes}_{i} \ -\text{ul} \ \text{onul} \ \text{manna-se} \ \text{inthepyuhay-ss} \ -\text{ta} \ \\
\quad -\text{ADN.PRF} \ \text{entity}_{i} \ -\text{ACC} \ \text{today} \ \text{meet} \ -\text{CONJ} \ \text{interview} \ -\text{PST} -\text{DECL} \ \\
\quad \text{‘Mr. Lee finished a marathon yesterday, and journalist Kim met and interviewed him (= Mr. Lee) today.’} \]

Similarly, the marginal status of (5) (repeated in (13) below) is due to the lack of sufficient information addressees can make use of when drawing inferences about the relation between the eventualities described by the relative and the main clause. If the context provides that one of the daily rituals of Mina is to put some apples on an empty plate and eat all of them, but she somehow forgot to eat the apples yesterday, (13) becomes acceptable.

\[(13) \quad \text{Mina} -\text{ka} \ [\text{sakwa}, -\text{ka} \ \text{cepsi-ey} \ \text{iss} -\text{ten}] \ \text{kes}_{i} \ -\text{ul} \ \\
\quad \text{Mina} -\text{NOM} \ [\text{apple}, -\text{NOM} \ \text{yesterday} \ \text{plate} -\text{LOC} \ \text{exist} -\text{ADN.RETR} \ \text{entity}_{i} -\text{ACC} \ \\
\quad \text{onul mek-ess} -\text{ta} \ \\
\quad \text{today eat} \ -\text{PST} -\text{DECL} \ \\
\quad \text{‘Some apples were on the plate yesterday and Mina ate them (= the apples) today.’} \]

\[\text{[Kuroda} \ (1976) \text{272].}\]
Although the relation between IHRCs and their main clauses is semantically underspecified, a temporal relation is generally preferred, as indicated by the fact that the majority of acceptable examples of IHRCs from previous studies are natural under a temporal reading. I argue that this bias toward a temporal interpretation is due in part to the semantic contribution of the adnominal markers such as -nun (imperfective) and -(u)n (perfect) which specify a temporal relation between the eventuality described by the relative and the eventuality described by the main clause. In this sense, a temporal relation, be it co-temporal or temporal precedence, always arises by default between an IHRC and its main clause.

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I assume that the imperfective marker -nun indicates that two events are co-occurring, while the perfect marker -(u)n signals that there is a temporal progression. In other words, the imperfective adnominal marker -nun encodes that, for the temporal trajectories of the eventualities $t_1$ (described by the relative clause) and $t_2$ (described by the main clause), there exists a subpart $t$ such that $t \subset t_1$ and $t \subset t_2$. I follow Nishiyama & Koenig’s (2010:619) analysis of the perfect in making the following assumptions on the perfect adnominal marker -(u)n; (i) the perfect on a relative clause specifies that for $t_1$ and $t_2$, there exists a subpart $t_0$ of $t_1$ that precedes $t_2$ ($t_0 \prec t_2$) and (ii) the eventuality described by the relative clause introduces a perfect state $s$ that overlaps $t_2$ ($s \cap t_2$), and the category of this perfect state is determined via pragmatic inferences.

The proposed account of the semantic contribution of Korean adnominal markers explains a possible source of a common misunderstanding among previous studies, namely that only a temporal relation is possible between IHRCs and their main clauses: unlike a temporal relation inferred largely based on the semantic encoding of the imperfective and the perfect, other relations such as cause-effect have a less direct source than the grammatical aspect markers and therefore are less immediately inferable out of context.

### 3.2 A Coherence-Based Account of the various relations between IHRCs and their main clauses

I argue that the various relations that hold between IHRCs and their main clauses correspond to coherence relations (Hobbs 1985; Mann & Thompson 1988; Kehler 2002; Asher & Lascarides 2003), which are relations between described eventualities that must be established for a discourse to appear coherent. My analysis builds upon the classification of coherence relations proposed by Hobbs (1985) and Kehler (2002). With these and others (e.g. Mann & Thompson (1988); Asher & Lascarides (2003)), I assume that discourse coherence arises in part by means of computing coherence relations (e.g. Occasion, Result, Parallel, Contrast). I note that, although similar in spirit, my analysis differs from Kuroda’s (1976) in the following respects: on my account, the coherence relations between IHRCs and main clauses fall out of a general condition on successive propositions in a discourse, but they are IHRC-specific in Kuroda’s analysis; second, Kuroda’s analysis does not explain why it seems that IHRCs but not EHRCs must enter into a coherence relation with their main clauses, whereas my analysis does (see Section 4).

I begin by introducing the **Occasion** relation, with the definition and examples in (14)-(16). **Occasion** arises between eventualities described by two successive utterances $S_1$ and $S_2$ if a change-of-state event has been inferred from $S_1$ and the final state of that event is inferred from $S_2$. In (15), for example, an inference arises such that the speaker took
his mother from the airport when she arrived there (the final state of the relative clause’s event). The establishment of OCCASION promotes coherence by helping addressees construct a representation of eventualities that occur in temporal sequence.

(14) **OCCASION:**
Infer a change-of-state for a system of entities from $S_1$, inferring the final state for this system from $S_2$.
(Here and in all the definitions below, $S_1$ and $S_2$ refer to the relative clause and the main clause, respectively.)

Na -num [emeni$_i$ -ka konghang -ey tochakha -n] kes$_i$ -ul cip -ulo I -TOP [mother$_i$ -NOM airport -at arrive -ADN.PRFL entity$_i$ -ACC home -to mosi -ess -ta take.HON -PST -DECL

‘My mother arrived at the airport and I took her (= my mother) home.’

(16) Chelswuuka khemphyutheka mangkacin kesul kochiessta. Yang (1999:his (5.1b))
Chelswu -ka [khemphyuthe$_i$ -ka mangkaci -n] kes$_i$ -ul kochi -ess Chelswu -NOM [computer$_i$ -NOM break -ADN.PRFL entity$_i$ -ACC fix -PST -ta -DECL

‘A computer was broken and Chelswu fixed it (= the computer).’

**Occasion** arises in sentences instantiating an IHRC that has a telic predicate since telic predicates give rise to a change-of-state entailment. By contrast, if the relative has an atelic predicate, a **Background** relation is generally inferred.

To illustrate, in (18) (repeated from (1)) the relative clause provides a description of the state of the apples, and this state acts as a background against which the event described by the main clause (Mina’s eating these apples) takes place.

(17) **Background:**
Infer a description of a system of entities from $S_1$, inferring from $S_2$ that some entity is placed or moves against that system as a background.

(18) Minaka sakwaka cepsiey issnun kesul mekessta. (IHRC)
Mina -ka [sakwa$_i$ -ka ceps -ey iss -mun] kes$_i$ -ul mek -ess -ta Mina -NOM [apple$_i$ -NOM plate -LOC exist -ADN.IPFV] entity$_i$ -ACC eat -PST -DECL

Nonrestrictive: ‘Some apples were on the plate and Mina ate them (= the apples).’

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8As Kehler (2002:23) points out, inferring a temporal progression by itself is insufficient for Occasion; eventualities connected by Occasion must cohere under a common scenario. This is why (8), for instance, is odd under an intended Occasion reading.

9I follow Asher & Lascarides (2003) in assuming the relation Background that establishes between eventualities that temporally overlap.
The next relation I discuss is Result. The definition in (19) states that Result arises when a causal link establishes between two propositions $P$ and $Q$, such that $Q$ holds as a consequence of the fact that $P$ holds. In (20), for instance, a causal link can be established between the relative and the main clause because the fact that Sangho threw his fish away can naturally be understood as a direct consequence of the fact that the fish has gone bad and is therefore inedible.\footnote{(20) can also be understood as an example of Occasion. In fact, Occasion generally holds if Result holds, as result temporally follows cause in normal circumstances. In my view, this ambiguity is not a problem for the present analysis; rather, I follow Ascher & Lascarides (2003) and Nishiyama & Koenig (2010) in assuming that coherence is maximized if more than one relation is inferable between two given event descriptions.}

(19) **Result**

Infer $P$ from the assertion of $S_1$ and $Q$ from the assertion of $S_2$, where normally $P \rightarrow Q$.

(20) Sanghoka sayngseni sanghan kesul peliessta.

\[
\text{Sangho} -\text{ka} \ [\text{sayngsen}i, -i \ \text{sangha} -\text{n}] \ \text{kes}i, -i \ \text{peli} -\text{ess} \\
\text{Sangho} -\text{NOM} \ [\text{fish}i, \ -\text{NOM go.bad} -\text{ADN.PRF}] \ \text{entity}i, -\text{ACC throw.away} -\text{PST} \\
-\text{ta} \\
-\text{DECL}
\]

‘(The) fish went bad and Sangho threw it (= the fish) away.’

Many existing accounts of IHRCs cover the data that I analyze as coherent under an Occasion, Background, or Result reading (Kuroda 1976; Fuji 1996; Y. Kim 2002; M. Kim 2007, 2008), and some argue that these readings all fall under a co-temporal reading (Fuji 1996; M. Kim 2007, 2008). However, there are other relations that are possible between IHRCs and their main clauses that cannot be subsumed under the notion of simultaneity. One such relation is Violated Expectation. In the Violated Expectation relation, a general assumption or expectation inferred from the first utterance is contradicted by the second. For example, the main clause’s content in (22) violates the expectation about a two year old baby, namely that she is too young to be smart.

(21) **Violated Expectation**

Infer $P$ from the assertion of $S_1$ and $Q$ from the assertion of $S_2$, where normally $P \rightarrow \neg Q$.

(22) Aika twu sal pakkey an toyn kesi ceypep yenglihata.

\[
[\text{Ai}i, \ -\text{ka} \ \text{twu sal pakkey an toy} -\text{n}] \ \text{kes}i, -i \ \text{ceypep} \\
[\text{Baby}i, \ -\text{NOM two year only} \ \text{not become} -\text{ADN.PRF}] \ \text{entity}i, -\text{NOM quite} \\
\text{yengliha} \ \text{ta} \\
\text{be.smart.PRS -DECL}
\]

‘(This) baby is only two years old and (yet) she (= the baby) is very smart.’
(23) presents another example. The sentence is originally presented as unacceptable in Y. Kim (2002:550) under a causal reading, but in fact it is acceptable under a Violated Expectation reading: the police should have arrested the students for theft, not for a violation of traffic law. In fact, a subsequent utterance such as (24) can help infer the Violated Expectation relation in (23).

(23) Kyengchal-i haksayngtuli totwukcilhanun kesul kyothongpep wuipanulo capassta. (Adapted from Y. Kim (2002:550))

Kyengchal-i [haksayng, -tul-i totwukcilha-nun] kes_i -ul
Police NOM [student_i -PL NOM steal -ADN.IPFV] entity_i -ACC
kyothongpep wuipan -ulo cap -ass -ta
traffic.law violation -for arrest -PST -DECL

‘Students were stealing (things) and (yet) the police arrested them (= the students) for a violation of traffic law.’

(24) Keyngchali michiessapoa.

Keyngchal-i michi -ess -napoa
Police NOM be.crazy -PST -EXCLAM

‘The police must be crazy.’

Parallel and Contrast are two other relations that are possible between IHRCs and their main clauses. These relations hold between propositions that involve similar (in the case of Parallel) or contrasting (in the case of Contrast) relations and entities. In (26) there are corresponding entities, Yuna and other kids, that are sufficiently similar (they share the property of being kids, presumably in the same class) and the same relation (missing the same problem in the exam) is predicated of these entities. (28) involves the same corresponding entities, but in this case two contrasting, rather than similar, relations are predicated of these entities (i.e. missing vs. getting a problem).

(25) Parallel:
Infer \( p(a_1, a_2, ...) \) from the assertion of \( S_1 \) and \( p(b_1, b_2, ...) \) from the assertion of \( S_2 \), where for all \( i, a_i \) and \( b_i \) are similar.

(26) Yunaka munceylul thulin kesul talun aitulto thuliessta.

[Yuna -ka muncey_i -lul thuli -n] kes_i -ul talun ai -tul-to thuli
[Yuna NOM problem_i -ACC miss -ADN.PRF] entity_i -ACC other kid -PL -also miss
-ess -ta
-PST -DECL

‘Yuna missed a problem (in the exam) and other kids missed it (= the problem) too.’

(27) Contrast:
Infer \( p(a_1, a_2, ...) \) from the assertion of \( S_1 \) and \( \neg p(b_1, b_2, ...) \) from the assertion of \( S_2 \), where for all \( i, a_i \) and \( b_i \) are similar.
Yunaka munceyul thulin kesul talun aitulun motwu macchwuessta.

[Yuna -ka muncey, -hul thuli -n] kes, -ul talun ai -tul -un
[Yuna -NOM problem, -ACC miss -ADN.PRF] entity, -ACC other kid -PL -TOP
motwu macchwu -ess -ta
all get -PST -DECL

‘Yuna missed a problem (in the exam) but other kids all got it (= the problem).’

So far, I have argued that the relations between IHRCs and their main clauses are independently motivated coherence relations. I have shown that IHRCs and their main clauses establish at least one of the following coherence relations: Occasion, Background, Result, Violated Expectation, Parallel, and Contrast. In fact, these six coherence relations are all and the only possible relations that can hold between IHRCs and their main clauses; other well-known relations such as Explanation or Elaboration are simply not possible in IHRC-instantiating sentences. In the remainder of this subsection, I offer an explanation for this restriction on the range of possible coherence relations between IHRCs and their main clauses.

Discourse theories often employ the notions of discourse coordination and subordination (Mann & Thompson 1988; Asher & Lascarides 2003; Polanyi et al. 2004; Asher & Vieu 2005). These notions inherently pertain to the structuring of discourse, but they can also motivate a classification of coherence relations into coordinating relations and subordinating relations. One way to distinguish between coordinating and subordinating relations is to use and between the two clauses being related. According to Txurrukà (2003), interclausal and has a semantic contribution that a simple logical conjunction does not have (see also Chaves (2012:488-490) for more discussion and related proposals): it specifies that a coordinating relation is established between its conjuncts. As such, and serves to restrict the range of coherence relations that are possible between its conjuncts. For example, (29a) admits a reading where the two propositions are connected by Explanation: Max fell because John pushed him. But the sentence can also admit a less immediate, albeit possible, Occasion reading: Max fell and then John pushed him. In the case of (29b), however, Explanation does not arise because and does not allow a subordinating relation to be established between its conjuncts.

   b. Max fell and John pushed him.

Applying Txurrukà’s test, we can divide coherence relations into the two groups in (30). Importantly, the distinction between coordinating and subordinating relations coincides with the distinction between those coherence relations that can obtain between IHRCs and their main clauses, and those that can not.

See Asher & Vieu (2005) for criteria distinguishing coordinating and subordinating relations.
A classification of Hobbs-Kehler coherence relations into coordinating and subordinating relations

a. Coordinating relations: Occasion, Background, Result, Violated Expectation, Parallel, Contrast

b. Subordinating relations: Exemplification, Generalization, Exception, Elaboration, Explanation, Denial of Preventer

I take the fact that the relation between IHRCs and their main clauses is limited to coordinating relations as indicating that IHRCs combine with their main clauses via coordination. More specifically, I argue that IHRCs specify in their semantics a propositional connective Crd that takes the propositions of the relative and the main clause. To implement this idea, I claim that sentences instantiating an IHRC are subject to a semantico-pragmatic constraint that requires that a coordinating relation must be established whenever there are two propositions that are arguments of Crd. I state the constraint in (31): for two propositions $S_1$ and $S_2$, if they are arguments of Crd, there exists a pragmatic relation that is a member of the set of coordinating coherence relations (cf. Crnić 2010).

$$\text{Crd}(S_1, S_2) \rightarrow \exists R \in \{\text{Occasion, Background, Result, Violated Expectation, Parallel, Contrast}\}: R(S_1, S_2)$$

The proposed analysis makes the correct prediction that the various relations by which addressees can make sense of IHRCs and their main clauses correspond to the categories of readings compatible with the connective and. A mere temporal characterization of the relations between IHRCs and their main clauses such as the one proposed by M. Kim (2007, 2008) cannot capture the various interpretations available for sentences instantiating an IHRC, and it also misses the generalization that these are all and the only interpretations that are compatible with and.

Studies on the relation between syntactic and pragmatic structures (Schleppegrell 1992; Blühdorn 2008) have provided evidence that syntactic coordination and subordination does not always coincide with hierarchical structures in discourse. My proposal that IHRCs, despite their subordinate syntax, combine with their main clauses via coordination in semantics and pragmatics preserves the insights of these studies. However, the proposals of these works are largely based on the observation that subordinate connectives such as because and while do play the role of coordinate connectives in discourse. Given that IHRCs are often analyzed as periphrastic nominalized clauses in argument positions that do not appear to involve a clause connective, it is not obvious how the syntax-semantic-pragmatics interface of the IHRC and the main clause works. Here, I submit that the coordinate semantics of IHRCs (Crd) is encoded in the morpheme kes. Kes is a polyfunctional morpheme, frequently used as a subordinator, nominalizer, sentential ending, and in third person non-human pronouns (Rhee 2008). I assume that kes has gained its status as an adverbial connective in its grammaticalization path. In fact, Kikuta (2002) and Horie (2011) discuss the use of the Japanese counterpart no as an adverbial connective, and the examples they provide naturally translate into Korean (see, for example, Kikuta (2002:207-208)). I propose that kes in IHRCs has the following two roles: (i) as a pronoun, it picks out the entity or entities referred to by the anchor and (ii) as a clausal connective, it conjoins the relative and the main clause.
4 At-Issueness and the Function of Korean Relative Clauses

In the previous section I presented a coherence-based analysis of Korean IHRCs. But assuming the notion of coherence adopted in this paper, it may come as a surprise that, as discussed in Section 2, EHRCs do not seem to be required to enter into a coherence relation with their main clauses: Why is it the case that an establishment of a coherence relation is important in the licensing of IHRCs but not in the licencing of EHRCs? In this section I submit the following. First, in order for a discourse to be coherent, every part of that discourse must cohere with the context it occurs in. Second, different types of Korean relative clause (restrictive EHRCs, nonrestrictive EHRCs and IHRCs) cohere with their main clauses in different manner. The second part of my proposal is the corollary of the fact that each type of relative clause has a specially designated discourse function that is partially correlated with the kind of content (at-issue or not) it contributes to discourse.

The idea that there is a kind of meaning called conventional implicature (CIs, henceforth) independent of ‘what is said’ (Grice 1975) has long been maintained (Frege 1892/1994; Grice 1975; Karttunen & Peters 1979; Potts 2005). What is of particular interest for our purposes is Potts’ (2005) analysis of English relatives. Potts rejects the traditional restrictive/nonrestrictive distinction, and proposes an alternative classification that distinguishes between integrated relatives that contribute content that is at-issue and supplementary relatives that provide supplementary or CI content (ibid. p.94). Following Potts, I motivate a classification of Korean relative clauses along the at-issue/CI divide. Crucially, I argue that restrictive EHRCs and IHRCs contribute at-issue content, while the content of nonrestrictive EHRCs can be either at-issue or CI.

In what follows I present evidence supporting that IHRCs contribute at-issue content while nonrestrictive EHRCs have no such restriction. I leave out restrictive EHRCs from the discussion, as it is well established that the content of restrictive relatives are part of the at-issue content of their main clauses due to their inherent set-reducing function. The fact that a nonrestrictive EHRC does not necessarily provide supplementary content is illustrated by (32): the content of the nonrestrictive EHRC keki sanun ‘who lives there’ must be interpreted as at-issue no matter whether Speaker B has only one brother or not; interpreting the relative as supplementary would lead to an incoherent discourse.

(32) A. Seoul-ey kaseyyo?
   Seoul -ey ka -sey -yo
   Seoul -to go -HON -Q
   ‘Are you going to Seoul?’

B. Ney, keki sanun tongsayngi hana isseseyo.
   Ney [keki __, sa -nun] tongsayng, -i hana iss -ese
   Yes [there __, live -ADN.IPFV] younger.sibling, -NOM one exist -because
   -yo
   -DECL

12The arguments and data here echo those in [Huddleston & Pullum (2002) 1065].
‘Yes, because I have a brother, who lives there.’

Unlike CI content that receives widest scope (Potts 2005; McCready 2010), at-issue content can be embedded under scopal operators that are higher in the structure. Thus, if an IHRC is embedded under a negation operator, as in (33), it can be interpreted as part of the denial.

(33) Sakwaka cepsiey issten kesul Minaka mekun kesun sasili anita.

\[
\text{Sakwa,}_i\text{-ka ceps -ey iss -ten] kes,}_i\text{-ul Mina -ka mek}
\text{[Apple,}_i\text{-NOM plate -LOC exist -ADN.RETR] entity,}_i\text{-ACC Mina -NOM eat}
\text{-n kes -un sasil -i ani -ta}
\text{-ADN.PFV -NMLZ -TOP fact -NOM be.not -DECL}
\]

‘It is not true that there were some apples on the plate and Mina ate them (= the apples).’

Another test is provided in (34). The idea is that the truth of at-issue content can be subject to negotiation by other participants of the conversation, whereas CI content cannot (McCready 2010; AnderBois et al. 2015). In (34) B’s response to A calls into question the truth of the proposition that the apples were on the plate. The fact that the utterances of speaker B is acceptable suggests that IHRCs convey at-issue content.

(34) A: Sakwaka cepsiey issten kesul Minaka mekesse.

\[
\text{Sakwa,}_i\text{-ka ceps -ey iss -ten] kes,}_i\text{-ul Mina -ka mek -ess}
\text{[Apple,}_i\text{-NOM plate -LOC exist -ADN.RETR] entity,}_i\text{-ACC Mina -NOM eat -PST}
\text{-e -DECL}
\]

‘There were apples on the plate and Mina ate them (= the apples).’

B: Sasili aniya. Sakwaka cepsiey epsesse.

\[
\text{Sasil -i ani -ya. Sakwa -ka ceps -ey eps -ess -e}
\text{Fact -NOM be.not -DECL Sakwa -NOM plate -LOC not.exist -PST -DECL}
\]

‘That’s not true. The apples were not on the plate.’

So far I have argued that restrictive EHRCs and IHRCs provide at-issue content, while the content of nonrestrictive EHRCs can be at-issue or CI. I now propose an account of why IHRCs, but not restrictive and nonrestrictive EHRCs, are required to enter a coherence relation with their main clauses in order for sentences instantiating them to be acceptable. I assume that different types of relatives are tied to construction-specific discourse goals and that they contribute to discourse coherence by achieving these goals.13

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13 Alternatively, one may argue that the basic difference between different types of relatives lies in whether they constitute an independent information unit (cf. Depraetere (1996)), and that the lack of a coherence relation between EHRCs and their main clauses is due to the fact that they form a single information unit. However, the notion of information unit is not entirely clear, and I therefore pursue an alternative account here.
inherent function of restrictive EHRCs is to help identify discourse referents by narrowing down the referents of the anchor to exactly those that satisfy the description provided by the relative. Once the reference set has been identified, it is available for reference in later discourse, which further contributes to effective communication. That nonrestrictive EHRCs and IHRCs do not have this set-reducing function is shown by examples (35) and (36): in the context where there are twelve apples on the plate, (36) is odd while (35) is acceptable only under a restrictive reading.

(35) Minaka cepsiey issnun sakwa yel kaylul mekessta. (EHRC)

Mina -ka [ __i cepsi -ey iss -nun] sakwa_i yel kay -lul mek -ess
Mina -NOM [ __i plate -LOC exist -ADN.IPfv] apple_i ten CLF -ACC eat -PST
-ta
-DECL

Restrictive: ‘Mina ate ten apples that were on the table.’
Nonrestrictive: ‘Mina ate ten apples, which were on the table.’

(36) Minaka sakwa yel kayka cepsiey issnun kesul mekessta. (IHRC)

Mina -ka [sakwa_i yel kay -ka cepsi -ey iss -nun] kes_i -ul mek
Mina -NOM [apple_i ten CLF -NOM plate -LOC exist -ADN.IPfv] entity_i -ACC eat
-ess -ta
-PST -DECL

Nonrestrictive: ‘Ten apples were on the plate and Mina ate them (= the ten apples).’

Turning to IHRCs, I argue that the discourse function of IHRCs is tied to the clausal connective Crd, whose function is to construct tightly connected successive propositions that describe a single, overall situation. That is, an IHRC advances discourse in such a way that it contributes content that is part of a complex proposition that the main clause’s content is also part of. Importantly, this discourse-advancing function of IHRCs is essentially what successive propositions in narrative discourse have. Given this parallel between narratives and IHRC-involving discourse, it naturally follows that IHRCs are required to contribute to the construction of a coherent discourse in such a way that they enter into a coherence relation with their main clauses, just like successive sentences in narrative discourse are required to do so.

Lastly, I claim that the function of a nonrestrictive EHRC correlates with the kind of content it provides. If a nonrestrictive EHRC provides CI, it contributes to discourse coherence by helping addressees understand the importance or relevance of the at-issue content contributed by the main clause. But if a nonrestrictive EHRC provides at-issue content, it plays the same role that an IHRC does: the relative contributes part of a complex proposition. In the latter case, just as in the case of IHRCs, coherence is achieved if a coherence relation is established between the relative and the main clause. The proposed account

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14 Huddleston & Pullum (2002:1063) identify a similar class of relatives, which they call *continuative* relatives, that are not backgounded relative to the information conveyed by the main clause unlike other supplementary relatives.
makes the correct prediction that pragmatically enriching nonrestrictive EHRCs by inferring a coherence relation is a possibility: doing so does not lead to unnatural interpretations.

To summarize, I have argued for a new classification of Korean relative clauses on the basis of the discourse function of the relative and the (non-)at-issueness of its content. My proposal has been that IHRCs can be interpreted coherently if and only if a coherence relation is inferred between the relative and the main clause, while restrictive and nonrestrictive EHRCs can be part of a coherent discourse without entering into a coherence relation with their main clauses. The analysis I have proposed sheds light on the often ignored distinction between restrictive and nonrestrictive EHRCs in Korean, and offers a novel account of the three-way contrast between restrictive EHRCs, nonrestrictive EHRCs, and IHRCs. My account contrasts with the account suggested by M. Kim (2008), who argues that EHRCs have “restrictive” semantics (relating sets of individuals) whereas IHRCs’ semantics relates sets of eventualities. A typology of relatives along this line is problematic because it obscures the difference between nonrestrictive EHRCs and IHRCs, as nonrestrictive EHRCs’ semantics do involve relating sets of eventualities. Additionally, the results of the present study supports recent proposals that the traditional restrictive/nonrestrictive divide does not provide a satisfactory typology of relative clauses and echoes the observations in previous works on “strange” relative clauses that do not fit traditional distinctions.

5 Conclusion

Scholars have long argued that Korean IHRCs are subject to an interpretability constraint that gives rise to an asymmetry in acceptability between IHRCs and their EHRC counterparts (Kuroda 1976, M. Kim 2007, 2008). In this paper, I have argued that a successful account of this asymmetry lies at the interface between the semantics of IHRCs and discourse-pragmatics. Building on previous works on discourse coherence (Hobbs 1985, Kehler 2002, Asher & Lascarides 2003), I have claimed that IHRCs semantically encode a clausal connective that is tied to coordinate coherence relations. The proposed analysis allows the various interpretations available for sentences instantiating an IHRC, while restricting these interpretations to those that are compatible with coordinating coherence relations.

I have also proposed a new classification of Korean relatives that distinguishes among different types of relatives on the basis of the at-issueness of the relative and the relative’s discourse function, and offered an explanation as to why the establishment of a coherence relation seems to be relevant only in the case of IHRCs. In principle, every part of a discourse must help achieve a coherent interpretation of the discourse, and relative clauses do so by achieving construction-specific discourse goals: (i) restrictive EHRCs serve to construct a coherent representation of discourse by helping addressees easily identify the referents denoted by the anchor; (ii) IHRCs contribute to discourse coherence by providing an at-issue proposition that is connected to the proposition of the main clause by means of a coherence relation, thereby giving rise to a more tightly connected representation of a complex situation; (iii) Nonrestrictive EHRCs may serve a supplementary role by providing information that helps addressees better understand the at-issue content of the main clause, or they may enter into a coherence relation with their main clauses in order to contribute a coherent
representation of a complex situation, just as IHRCs do.

6 References


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