

Marking definiteness in an articleless language

The role of the domain restrictor KU in Korean

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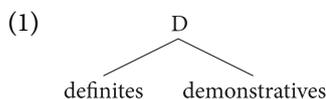
The main purpose of this paper is to identify the novel type of Korean definiteness marker. Especially I show that Korean KU which originated from the morphological demonstrative ‘that’, instantiates a solid pattern of distribution of definiteness marker. Mainly focusing on the semantico-pragmatic role of KU, the proposal comprises three main parts: (i) Given that Korean employs distinct devices teased apart into uniqueness (i.e. referential use) and familiarity (i.e. anaphoric use) in its definiteness system, I show that the effect of referential use in argument saturating function is achieved by the covert “determiner” in bare nouns, whereas anaphoric use in argument non-saturating function is achieved by the overt KU; (ii) The semantic contribution of KU is analyzed as a domain restrictor (D_{DR} ; Etxeberria & Giannakidou 2010) which supplies an indexical property as an argument (Schwarz 2009, 2013; Jenks 2018); (iii) I further show that the D_{DR} operator is present in the syntax, falling out from the standard D position as an adjunctive modifier in a lower DP layer. The contribution of my work is that the proposed account allows us to widen our view of cross-linguistic variation to cases where the prerequisite of definiteness is based on the dissociation of meaning (i.e. the semantic role of D as encoding familiarity) and form (i.e. the syntactic role of D as an argument-building function).

Keywords: Korean KU, definiteness, demonstratives, domain restriction, DP structure

1. Introduction

The aim of the current paper is to provide a theoretical understanding of the phenomena of definiteness in Korean. In particular, I address the following questions: (i) What elements qualify as a definiteness marker in Korean? (ii) What type of definiteness is possible? (iii) What is the function of a Korean definiteness marker

from a formal semantic as well as a typological perspective? These questions will be crucial guidelines in this paper, and the answers obtained will in turn be important contributions to a theory of definiteness in natural language. Traditionally, the morphological realization of determiner (D, henceforth) occurs in the two morphosyntactic paradigms, namely definite articles and demonstratives (Abney 1987; Longobardi 1994):



A variety of Indo-European languages make a morpho-syntactic distinction between definite articles and demonstratives. Regarding the instantiation of definite determiners, a definite article *the* in English is brought up as the prototypical morphosyntactic instantiation that has received the most attention in the literature:

(2) *The king of France is bald.*

The felicitous use of the definite article *the* requires that the referent of *king of France* be either *familiar* (i.e. anaphoric) within the discourse (Christophersen 1939; Prince 1981, 1992; Heim 1982, among others), or *uniquely identifiable* to the hearer (Russell 1905; Hawkins 1980; Löbner 1985; Kadmon 1987, 1990; Gundel 1988; Heim 1990; Lyons 1999, among others).

In recent work, definiteness induced by demonstratives has received much attention and there have been many attempts to offer a unified semantics for definites and demonstratives (Hawkins 1991; King 2001; Roberts 2002; Elbourne 2005, 2008; Wolter 2006; Ionin et al. 2011, 2012, among others). As shown below, the demonstrative *that* in English can be used interchangeably with *the* to encode familiarity and uniqueness/maximality. In (3), NPs marked by *the* and *that* denote a familiar referent to the interlocutors. In (4), NPs marked by *the* and *that* both denote a unique/maximal referent(s). In (4a), *that dog* refers back to the unique dog in the discourse; in (4b), the use of *that dog* is infelicitous since uniqueness has not been established; and in (4c), with a plural, *those dogs* must refer to the totality of dogs.

(3) Familiarity uses

- a. Anaphoric: The curtain rose. A woman came onto the stage. Then **that/**
the woman started singing and dancing. (Ionin et al. 2012: 75, (8a))
- b. Co-varying anaphoric: Every dog in my neighborhood, even meanest, has
an owner who thinks that **that/the** dog is a sweetie.
(Roberts 2002: 93, (11))
- c. Bridging: Gentian jerked the plug out of the drain and climbed out of the
tub. The cat leapt into the sink and began biting at **that/the** plug.
(Wolter 2006: 51, (117))

- (4) Uniqueness/maximality uses
- a. The pet shop had a dog for sale. I bought **that/the** dog.
 - b. The pet shop had three dogs for sale. #I bought **that/the** dog.
 - c. The pet shop had five dogs for sale. I bought **those/the** dogs. [=all five dogs] (Ionin et al. 2012: 73, (7))

Other than the English *the*, which encodes both uniqueness and familiarity, there are various cross-linguistic devices that exhibit typologically distinct behaviors for definiteness. On the one hand, as pioneered by Schwarz (2009; 2013), uniqueness and familiarity can be overtly contrasted with the morphologically distinguished forms of definite articles in languages such as German, Lakhota, and Hausa. The following example shows the separate form of weak (i.e. unique) and strong (i.e. familiar) definite articles in German (Schwarz 2009: 41, (46)):

- (5) a. *In der Kabinettsitzung heute wird ein neuer Vorschlag* (German)
 In the cabinet meeting today is a new proposal
vom/#von dem Kanzler erwartet.
 by-the_{weak}/by the_{strong} chancellor expected
 ‘In today’s cabinet meeting, a new proposal by the chancellor is expected.’
- b. *In der Kabinettsitzung heute wird ein neuer Vorschlag* (German)
 In the cabinet meeting today is a new proposal
#vom/von dem Minister erwartet.
 by-the_{weak}/by the_{strong} minister expected
 ‘In today’s cabinet meeting, a new proposal by the minister is expected.’

On the other hand, in some languages, only anaphoric determiners are exclusively marked. These include East Asian languages like Japanese (Kaneko 2012, 2014; Oshima & McCready 2017) and Mandarin (Jenks 2018), in which the weak definites are realized with bare nouns whereas the strong definites with demonstratives. The following examples exemplify cases where demonstratives in these languages allow a co-variable anaphoric reading:

- (6) *do-no zidoosya-gaisya-mo so-no zidoosya-gaisya-no*
 which automobile-company- \forall SO-NO automobile-company-GEN
ko-gaisya-o suisensita
 subsidiary-ACC recommended
 ‘Every automobile-company recommended one, some or all of that automobile-company’s subsidiaries.’ (Japanese; Kaneko 2014: 242, (3a))
- (7) *mei ge [you yi zhi shuiniu de] nongfu dou hui da na zhi shuiniu.*
 every CLF have one CLF buffalo Rel farmer all will hit that CLF buffalo
 ‘Every farmer that has a buffalo hits **that** buffalo.’
 (Chinese; Jenks 2018: 503, (3b))

In this paper, just like Japanese and Mandarin, I shall show that Korean is a language that overtly marks anaphoricity by means of demonstrative in its definiteness system.

As for the morphological realization of the demonstratives in the morphosyntactic paradigm, Korean employs three types of demonstratives as *i* ‘this,’ *ce* ‘that (over there),’ and *ku* ‘that.’ The proximity of the entity between the interlocutors plays a role in determining which demonstrative should be used. As shown below, in a situation where John is in the furniture store where the chairs are visually present, if John (i.e. an addresser) points to a chair near him, the demonstrative *i* should be used in (8a). If John wants to refer to a chair near the clerk (i.e. an addressee), *ku* should be used in (8b). Likewise, *ce* should be used to refer to the chair that is far from both in (8c):

- (8) *Context: John is talking to the clerk at the furniture store. Pointing at a certain chair, John says:*
- a. *i uyca-ka maum-ey tul-eyo.* (Korean)
 this chair-NOM mind-LOC have-POL
 ‘(I) like **this** chair (near John).’
- b. *ku uyca-ka maum-ey tul-eyo.*
 that chair-NOM mind-LOC have-POL
 ‘(I) like **that** chair (near the clerk).’
- c. *ce uyca-ka maum-ey tul-eyo.*
 that chair-NOM mind-LOC have-POL
 ‘(I) like **that** chair (far from both the clerk and John).’

Among the three demonstratives, only *ku* encodes definiteness in an anaphoric context (Lee 1989, 1994; Kang 1994; Sohn 2001, forthcoming; Kang 2012, 2015; Ahn 2017; Cho 2017, among others). As shown below, in the context where the chairs are not visually present, the bare noun *uyca* ‘chair’ combined with *ku* obligatorily gives rise to an anaphoric interpretation:

- (9) *Context: After deciding to buy the most expensive chair in the store, John calls to his wife and says:*
- yekise ceyil pissan uyca-ka maum-ey tul-e.* (Korean)
 here most expensive chair-NOM mind-LOC have-DECL
 *(*ku*)/**i*/**ce uyca-lul sa-lke-ya.*
 KU/this/that chair-ACC buy-will-DECL
 ‘I like the most expensive chair here. I will buy **the/that** chair.’

The anaphoric force of KU is further evidenced by a bound reading (i.e. donkey sentence). In (10b), *ku* should be used for the felicitous interpretation, whereas the use of a bare noun in (10a) is not allowed:

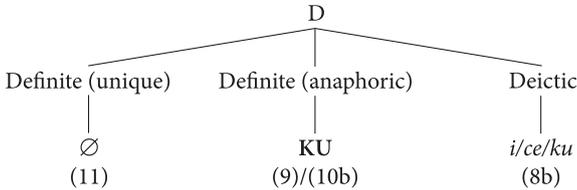
- (10) a. *so-lul kaci-n motun nongpwu-nun so-lul ttayli-n-ta.* (Korean)
 COW-ACC have-REL every farmer-TOP COW-ACC hit-PRES-DECL
 ‘Every farmer that has a cow hits a cow (in general).’
- b. *so-lul kaci-n motun nongpwu-nun ku so-lul ttayli-n-ta.*¹
 COW-ACC have-REL every farmer-TOP KU COW-ACC hit-PRES-DECL
 ‘Every farmer that has a cow hits **the/that** cow.’

The occurrence of *ku* and bare nouns appears to exhibit complementary distribution in most cases in the sense that the occurrence of KU is licensed by anaphoricity and the bare noun by uniqueness:

- (11) *onul (*ku) tal-i ilccik ttu-ess-ta.* (Korean)
 today KU moon-NOM early rise-PST-DECL
 ‘The moon has risen early today.’

Given the above empirical data, I suggest the morphosyntactic paradigms of D in Korean as below. Korean employs two linguistic devices marking definiteness as bare nouns (i.e. covert D operator) and the overt *ku*. *Ku* has a further split use of the regular deictic demonstrative and “definite” determiner. For the sake of making a clear distinction between the deictic *ku* and definite *ku*, from now on, I shall gloss the definite *ku* as KU:

- (12) The morphosyntactic paradigms of D in Korean



An attempt to consider KU as the semantic equivalent of a definiteness marker is not new and has been reflected descriptively in recent literature, where it is termed as “definite determiner” (Lee 1989, 1994; Kang 1994), “definite demonstrative” (Sohn 2001), “contextual domain restrictor” (Kang 2012; 2015) and “anaphoric demonstrative” (Ahn 2017; Cho 2017). Although it has been noted that the interpretation of KU involves a definiteness marker in the literature, to my knowledge the precise nature of its formal semantico-syntactic function has not been discussed. In order to test the hypothesis that KU in Korean behaves like a definiteness marker, we need to show the following: First, KU has the semantic and pragmatic function of definiteness. Second, KU should differ from other non-definite (i.e.

1. Note that KU can be replaced by *caki* ‘oneself’ or *ku-uy* ‘he-GEN’. I thank Min-Joo Kim (personal communication) for bringing this important point to my attention.

deictic) demonstratives. Third, the distinct property of definiteness induced by covert D in bare nouns and KU should be captured. In doing so, the investigation of the contrast among KU, *ku/i/ce*, and bare nouns will be considered, and the definite behavior of KU will be suggested.

In this paper, I argue that the way of marking definiteness KU is morpho-syntactically real. In particular, the types of definiteness are distinguished into separate functions of *argument-saturating* (i.e. a determiner head serving as a type-shifter) for referential use of uniqueness/maximality and *type-preserving non-saturating* (i.e. an adjunctive modifier) for anaphoric use of familiarity. Semantically, the effect of argument-saturating function is achieved by the covert D in bare nouns, whereas the effect of non-saturating function is achieved by the overt marking of KU. Given that the main role of KU is to signal that the property of NP exists on common ground, building on Etxeberria & Giannakidou (2010; 2014; 2019), the semantic contribution of KU is further analyzed as a *domain restrictor* (D_{DR} , henceforth). The main effect of D_{DR} KU is to supply an index as an argument referring to an anaphoric element for *individuals* or *properties* (i.e. a *discourse familiar set*) (Schwarz 2009; 2013).

The remainder of this paper is as follows: § 2 deals with a number of theoretical issues discussed in the literature on definiteness, including familiarity, uniqueness/maximality, domain restriction and indexical expressions. By looking at Korean data, § 3 lays out the basic properties of KU to identify it as a definiteness marker. I suggest that its fundamental semantic/pragmatic property is domain restriction. After an in-depth discussion of the major types of uses, § 4 analyzes its semantic meaning. I shall show how covert D and overt KU can be integrated into a unified syntactic structure. I conclude in § 5 with some suggestions for further implications and the remaining questions of this study.

2. Theoretical background on definiteness

The first property of definiteness is familiarity. The main traditional approach of *familiarity* was pioneered by Christophersen (1939). In his view, the distinction between definite and indefinite description is determined by whether the referent of an NP is familiar to the hearer. The familiarity theory has been formalized as a “Novelty-Familiarity Condition” by Heim (1982). According to Heim, the meaning of sentences is represented by their capacity to change the context, which is argued to include sets of assignment functions. This is the dynamic view of (in)definiteness that goes back to how information grows in discourse (Stalnaker 1978). The distinction between definite and indefinite DPs can be analyzed by means of the dynamic view of (in)definiteness. Simply put, the use of the indefinite DP introduces a new

(novel) entity into the discourse, whereas the use of the definite DP indicates that the speaker presupposes the content of the DP. The formal conditions of a definite DP and indefinite DP are stated in (13):

- (13) The Extended Novelty-Familiarity Condition (Heim 1982: 369–370): For a δ to be felicitous w.r.t a context C it is required for every NP_i in that:
- a. if NP_i is [-definite], then $i \notin \text{DOM}(C)$; *Novelty Condition*
 - b. if NP_i is [+definite], then
 - i. $i \in \text{DOM}(C)$, and
 - ii. if NP_i is a formula, C entails NP_i *Familiarity Condition*

(13) defines a logical form where DOM indicates a domain that maps from discourse context C to discourse referents NP_i . A discourse referent is not an actual thing in the world. Rather, it is a kind of mental entity represented by a natural number. When an NP_i is not entailed in the domain of the context in question, an NP_i gives novelty in (13a), whereas when an NP_i is entailed in the domain of the context in question, NP_i gives familiarity in (13b).

Second, *uniqueness* is based on the intuitive appreciation that a definite description refers to things of the singleton set in the context. Russell's (1905) classic work analyzes the sentence in (14a) as having meaning in (14b) by positing that definite descriptions are referential NPs:

- (14) a. The φ is ψ .
 b. $\psi(\iota x.\varphi x)$

Definite NPs presuppose the existence of the entities they refer to (Strawson 1950), where definite descriptions denote an individual of type e . Thus, for instance, DP *the boy* is thought of as a referring expression of type e :

- (15)
- $$\begin{array}{c}
 \text{DP}_{\langle e \rangle}: \textit{the boy} \\
 \swarrow \quad \searrow \\
 \text{D}_{\langle \text{et}, e \rangle} \quad \text{NP}_{\langle \text{et} \rangle} \\
 | \quad \quad | \\
 \textit{the} \quad \quad \textit{boy}: \lambda x.\textit{boy}(x)
 \end{array}$$

As shown above, *the* creates an *argument-saturating* constituent whose output is of type $\langle e \rangle$ in the referential use. Importantly, the ι operator can also obtain a suitable interpretation for plural and mass nouns, termed “maximality” (i.e. *max*) (Link 1983), shown below:

- (16) a. the boy = $\iota(\lambda x.\textit{boy}(x))$
 b. the boys = $\textit{max}(\lambda x.\textit{boy}(x))$

In a lattice structure, a supremum operator ι (or *max*) captures the meaning of the definite description. When the extension of the predicate is a singleton, $\iota x.P(x)$ will pick out the unique individual in the extension of *P*. When the extension of the predicate is a non-singleton set, $\max x.P(x)$ will pick out the maximal individuals in the extension of $\ast P$.

Third, although the central discussion of the definite *D* has been mainly focused on the vehicle of familiarity and uniqueness, recent works have laid out the basic framework for capturing the meaning of definiteness by implementing *contextual domain restriction* (Giannakidou 2004; Etxeberria 2005; Etxeberria & Giannakidou 2010, 2014, 2019). This type of definiteness is crucially different from the traditional role of definite *D* of type $\langle et, e \rangle$, since its structure is based on the *D* co-occurring with quantifiers. Cross-linguistically, the domain of a quantifying NP is determined by the contextually restricted content of its NP because the NP cannot refer to all individuals in the world that match the NP description. Consider the following example:

- (17) Many people came to the lecture yesterday; **every student** brought a laptop.
 $\forall x[\text{student}(x) \cap C(x)] \rightarrow \text{brought a laptop}(x)$

As shown above, the NP quantified by a universal quantifier *every student* does not denote the set of all the students in the universe. Rather, it refers to the set of *contextually salient* students, the set of students who brought a laptop. In the syntax-semantics approach, the domain of a *Q* is considered contextually restricted by the covert domain restriction variable *C* at LF where *C* refers to the discourse familiar set (Westerståhl 1984; von Stechow 1994, 1998; Stanley & Szabo 2000; Matthewson 2001; Stanley 2002; Martí Martínez 2003; Gillon 2006, 2009). Simply put, *C* refers to the attendees at the lecture yesterday, and *C* makes reference to that set.

One important question regarding the *C*-variable is where the domain restriction variable is located and whether it is encoded overtly or covertly. Cross-linguistically, an overt strategy of *C*-variable incorporated in *D* with quantifiers has been documented in European languages such as Greek, Basque, Bulgarian, and Hungarian. As shown below, supplying *C* is a function that *D* in Greek and Basque directly composed with *Q* and restricts the contextual domain of NPs (Etxeberria & Giannakidou 2019: 13, (8–11)):

- (18) a. *o kathe fititis* (Greek)
 D.SG every student
 ‘each student’
 b. $\ast kathe\ o\ fititis$
 every D.SG student

- (19) a. *mutil guzti-ak* (Basque)
 boy all-D.PL
 'all the boys'
 b. *mutil bakoitz-a*
 boy each-D.SG
 'each boy'
 c. **mutil guzti/bakoitz*; **mutil-ak guzti*; **mutil-a bakoitz*

Ettxeberria & Giannakidou term this type of D as a domain restrictor D, i.e. D_{DR} . In the standard analysis of Generalized Quantifiers theory (Barwise & Cooper 1981), Q and D cannot be combined apparently because of the type mismatch. Because of this, the role of D_{DR} involves a non-saturating function, unlike the traditional argument-saturating function of D. C in D_{DR} refers to the discourse familiar set that is equivalent to a non-singleton set. At the outer layer of the QP, the role of overt D_{DR} is to presuppose the contextual domain restriction, which signals such a property exists in the common ground. Thus the structure of QP with D_{DR} results in a partitive-like interpretation (i.e. *every one of the students*).

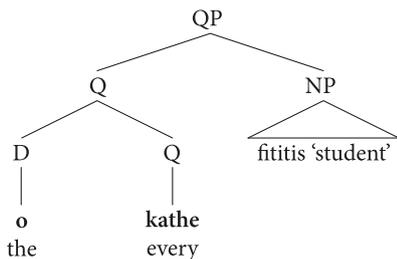
Given this setup, the composition of the sentences in (18a) and (19b) turn out to be (20) and (21) respectively. In Greek and Basque, D_{DR} operates on the quantificational argument. D in this configuration type-shifts to a modifier function, as in (22). By supplying the context set variable C, D_{DR} plays a role as a function that triggers the anaphoric presupposition that the common ground contains a property that is a value for C, just like a property anaphor. Q is thus consequently anaphoric to a discourse familiar property (Ettxeberria & Giannakidou 2014: 416, (8–9)):

- (20) a. [$\mathbf{o}_D + \text{kathe}_Q [\text{fititis}_N]_{NP}]_{QP}$ (Greek)
 b. \mathbf{o} kathe fititis = [kathe(C)](student)

- (21) a. [[$\text{mutil}_N]_{NP} + \text{bakoitz}_Q - \mathbf{a}_D]_{QP}$ (Basque)
 b. mutil bakoitz-a = (mutil)[bakoitz(C)]

(22) D to D_{DR} type-shifting:

- a. D_{DR} rule: When D composes with Q, use D_{DR}
 b.



- c. $\llbracket Q \rrbracket = \lambda P \lambda R. \forall x P(x) \rightarrow R(x)$
 d. $\llbracket D_{DR} \rrbracket = \lambda Z_{et,ett} \lambda P_{et} \lambda R_{et} Z(P \cap C)(R)$; Z is the relation denoted by Q
 e. $\llbracket D_{DR}(Q) \rrbracket = \lambda P \lambda R. \forall x (P(x) \cap C(x)) \rightarrow R(x)$

In terms of cross-linguistic perspective, however, it does not seem that a morphological definite article guarantees manifestation of D_{DR} . This is attested in other languages as evidenced by cross-linguistic morphosyntactic variation in the type of D_{DR} . For example, in Salish, there is no article distinction between definite and indefinite, and the single available D is a deictic demonstrative.² As shown below, when the morphological deictic *i...a* co-occurs with NP *smelhmúl-hats* ‘woman(PL)’ and quantifier *tákem* ‘all’, it functions as a D_{DR} , which restricts the domain of NP (Étxeberria & Giannakidou 2014:424, (23), adapted from Matthewson (1996; 2001)):

- (23) a. *léxlex tákem i smelhmúl-hats-a* (St’át’imcets Salish)
 intelligent all D.PL woman(PL)-D
 ‘All of the women are intelligent.’
 b. **léxlex [tákem smelhmúl-hats]*
 intelligent all woman(PL)

It signals that the property of women exists in the common ground. As revealed in the translation ‘all of the women’ in QP, the structure is similar to partitive, since this is the typical structure where the NP domain is presupposed. In this sense, D_{DR} functions as a type-preserving function that introduces the anaphoric variable C , yielding a contextually salient set of individuals characterized by the $[NP \cap C]$ property. The composition of the Salish definite demonstrative *i...a* in (23a) turns out to be (25) under the D_{DR} type-shifting rule in (24) (adapted from Giannakidou 2004: (31), following Chung & Ladusaw 2003):

- (24) D to D_{DR} type-shifting:
 a. D_{DR} rule: When D composes with NP under Q , use D_{DR}
 b. $\llbracket D_{DR} \rrbracket = \lambda P_{et} \lambda X (P(x) \cap C(x))$
 (25) $\llbracket i...a \rrbracket = \llbracket D_{DR} \rrbracket = \lambda P_{et} \lambda X (P(x) \cap C(x))$

2. It is suggested that St’át’imcets Salish D is a Kaplanian-style demonstrative, which behaves like a referentially rigid nature with the following empirical evidence: first, the St’át’imcets DPs are always linked to the here and now of current discourse; Second, since the St’át’imcets DPs are referentially rigid, they take only wide scope with negation; Third, the St’át’imcets DP cannot be licensed with donkey full DPs and receive E-type interpretations (Matthewson 1996; 2001).

The Salish type of demonstrative as a function of D_{DR} is observable in many languages. For instance, in Japanese, the demonstrative *so-no* ‘that’ has been argued to function as a domain restrictor (Kaneko 2012; 2014).³ Since *so-no* is morphologically demonstrative, one might expect that its role would be equivalent to Korean KU. However, they sharply contrast in terms of uniqueness/maximality. I shall come back to a more detailed discussion in § 3.2.

Given this background, Etxeberria & Giannakidou (2010; 2014; 2019) establishes a family of phenomena revealing cross-linguistically distinct functions of D. The saturating function of D is a traditional definite article in (26a), whereas the non-saturating function manifests definiteness by means of D_{DR} in (26b). D_{DR} further appears in two forms: as a Q modifier or as a predicate modifier, shown as follows (adapted from Etxeberria & Giannakidou (2019: 437, (43)):

(26) Types for D:

a. Saturating: $et \rightarrow e$ (*iota*): e.g. English *the*

b. Non-saturating: $et, ett \rightarrow et, ett$ (D_{DR} on Q): e.g. Greek *o*, Basque *ak*
 $et \rightarrow et$ (D_{DR} on NP): e.g. Salish *i...a*, Japanese *sono*

Fourth, Schwarz (2009; 2013) furthermore proposes the weak-strong distinction for the definite article system. Given the lexically distinct types of definite articles in German (refer back to (5)), he argues that these two articles must receive different semantics as unique (i.e. weak) and familiar (i.e. strong) definiteness. In a given resource situation s_r , the weak article denotes a unique entity, whereas a strong article introduces an index argument that refers back to the antecedent. The semantic meaning of the two types of definites are illustrated below (Schwarz 2009):

(27) a. Unique definite article: $\lambda s_r \lambda P: \exists! x[P(x)(s_r)]. \iota x P(x)(s_r)$

b. Anaphoric definite article: $\lambda s_r \lambda P \lambda y: \exists! x[P(x)(s_r) \cap x=y]. \iota x[P(x)(s_r) \cap x=y]$

In what follows, exploring the empirical dimension, I examine how the distinct morphological demonstrative forms in Salish, Korean, and German strong article relate to each other by showing that the notion of domain restriction as an indexical property is fruitful when applied to Korean KU. The theoretical discussion to come will therefore include familiarity, uniqueness/maximality, and domain restriction.

3. Another example of morphologically non-article type D_{DR} comes from the Chinese maximal operator *dou* (Cheng 2009) used with free choice items (Giannakidou & Cheng 2006).

3. Data: Core properties of definite KU

3.1 Familiarity

The first condition of felicitous use of the definite KU requires familiarity. The occurrence of KU necessarily demands a familiar antecedent in a given context. Accordingly, KU is not allowed to occur in the discourse in which an NP is introduced as a new (novel) entity. As shown below, KU denotes the novel entity *wang* ‘king’, and the sentence is ruled out:

- (28) *yeysnal etten nala-ey han/*ku wang-i* (Korean)
 Once.upon.a.time a.certain country-LOC one/KU king-NOM
sal-ass-ta.
 live-PST-DECL
 ‘Once upon a time, there lived a king in a country.’

Importantly, as a reviewer pointed out, one might raise a question as to the properties of definiteness induced by bare nouns and KU being different from each other, since Korean bare nouns are the default form to express (in)definiteness. As shown below, depending on the context which is presumably decided by default, the bare noun *uyca* ‘chair’ itself has four possible English translations as a singular indefinite (29a), singular definite (29b), plural indefinite (29c) and plural definite (29d):

- (29) *uyca-ka pang-ey iss-ta.* (Korean)
 chair-NOM room-LOC exist-DECL
 a. ‘There is a chair in the room.’
 b. ‘The chair is in the room.’
 c. ‘There are chairs in the room.’
 d. ‘The chairs are in the room.’

In a given anaphoric context such as in (30A) where the question introduces a salient antecedent in the discourse, the bare noun *uyca* ‘chair’ in (30B) can be interpreted as definite only.

- (30) A: *uyca-ka eti-ey iss-ni?* (Korean)
 chair-NOM where-LOC be-Q
 ‘Where is a chair?; where are chairs?’
 B: *uyca-nun pang-ey iss-e.*
 chair-TOP room-LOC exist-DECL
 a. ‘There is a chair in the room.’
 b. ‘The chair is in the room.’
 c. ‘There are chairs in the room.’
 d. ‘The chairs are in the room.’

Thus, it might be assumed that the occurrence of KU is optional for anaphoric interpretation, which in fact becomes available in some instances. As illustrated below, the co-referent of a bare noun *haksayng* ‘student’ refers back to the contextually salient student in the first sentence, a student the speaker saw today:⁴

- (31) *na-nun onul han haksayng-ul po-ass-ta.* (ku/*i/*ce) (Korean)
 I-TOP today one student-ACC see-PST-DECL KU/this/that
haksayng-un hayngpokhay poi-ess-ta.
 student-TOP happy look-PST-DEC
 ‘Today I saw a student. **The/that** student looked happy.’

However, as will be clear in § 3.2, the optionality of KU is allowed in a special case only when a KU-marked NP appears in a subject position with a topic marker (*n*)*un*. Crucial evidence for the status of bare nouns as a non-anaphoric marker from a semantic point of view comes from their inability to license an anaphoric context in non-subject positions. For example, as illustrated below, the unmarked bare noun *haksayng* ‘student(s)’ (32a) in the second sentence prefers to have an indefinite interpretation; the subject John will meet today will be a new student

4. I thank an anonymous reviewer for suggesting that the demonstrative *i* ‘this’ also gives rise to an anaphoric interpretation as follows:

- (i) *haksayng hana-ka ture-wass-ta.* *i haksayng-un hayngpokhay poi-ess-ta.*
 student one-NOM come.in-PST-DECL this student-TOP happy look-PST-DECL
 ‘A student came in. **This** student looked happy.’

It is important to note that KU and *i* in Korean have in common in the sense that they both give rise to familiarity in some context, however, the occurrence of *i* appears to be much restricted than KU. As shown below, in the context where the antecedents are not visually present, the sentences containing *i* become infelicitous:

- (ii) *yekise ceyil pissan uyca-ka maum-ey tul-e.* # *i uyca-lul sa-lke-ya.*
 here most expensive chair-NOM mind-LOC have-DECL this chair-ACC buy-will-DECL
 ‘(Intended) I like the most expensive chair here. I shall buy the chair.’
- (iii) # *so-lul kaci-n motun nongpwu-nun i so-lul ttayli-n-ta.*
 cow-ACC have-REL every farmer-TOP this cow-ACC hit-PRES-DECL
 ‘(Intended) Every farmer that has a cow hits **this** cow.’
- (iv) *nay-ka onul sosel-ul han-kwen sa-ss-ta.* # *i ceca-nun phulangsuin-i-ta.*
 I-NOM today novel-ACC one-CLF buy-PST-DECL this author-TOP French-be-DECL
 ‘(Intended) I bought a novel today. The author is French.’

Accordingly, it seems that the semantic contribution of *i* cannot be understood along similar lines as KU in the sense of familiarity. Although the detailed discussion of the relation between *i* and KU is worth pursuing, it is not the purpose of the current study, so I shall put it aside from the current discussion.

(i.e. indefinite) not the same student he met yesterday (i.e. definite). On the other hand, the overt marking of KU obligatorily establishes co-referential interpretation, which is grounded to individual(s) salient in that context. As shown in (32b), *ku haksayng* ‘KU student’ in the second sentence necessarily refers back to the student in the first sentence, the same student John met yesterday:

- (32) a. *Con-un ecey haksayng han-myeng-hako myentam-ul* (Korean)
 John-TOP yesterday student one-CLF-with meeting-ACC
ha-ss-ta. onul-to haksayng-hako myentam-ul ha-n-ta.
 do-PST-DECL today-also student-with meeting-ACC do-PRES-DECL
 ‘John had a meeting with [a student]_i yesterday. John has another meeting with [a student]_{?i/j} today.’
- b. *Con-nun ecey haksayng han-myeng-hako myentam-ul* (Korean)
 John-TOP yesterday student one-CLF-with meeting-ACC
ha-ss-ta. onul-to ku haksayng-hako myentam-ul ha-n-ta.
 do-PST-DECL today-also KU student-with meeting-ACC do-PRES-DECL
 ‘John had a meeting with [a student]_i yesterday. Today, John has another meeting with [the/that student]_i.’

What we see here is that the distribution of KU in the use of anaphoricity is exactly the same as the definite descriptions. Unlike bare nouns, the definites in KU are co-referential, and KU is necessarily used when it picks out the exact antecedent, very much like an anaphor.

Accordingly, it is quite natural to expect that KU receives a covarying reading with an antecedent in the restrictor of a quantifier, as illustrated below.

- (33) *Mina-nun wain-eytayhan chayk-i iss-nun motun secem-eyse* (Korean)
 Mina-TOP wine-about book-NOM exist-REL every bookstore-LOC
 *(*ku*) *chayk-ul sa-ss-ta.*
 KU book-ACC buy-PST-DECL
 ‘In every bookstore that has a book about wine, Mina bought the book.’
- (34) *Mina-nun ecey sicang han myeng-ul inthepeyuha-ss-ta. onul* (Korean)
 Mina-TOP yesterday mayor one CLF-ACC interview-PST-DECL today
*taythongleyng-un *(ku) sicang-ul manna-n-ta.*
 president-TOP KU mayor-ACC meet-PRES-DECL
 ‘Yesterday, Mina interviewed one mayor. Today, the president meets with the mayor.’

Again, KU is anaphorically dependent on an antecedent. As shown below, if there is no environment for proper indexing in a given context, the use of KU is infelicitous.

- (35) *mayhay taythongleyng-un kak si-uy (*ku) sicang-ul manna-ss-ta.*
 every.year president-TOP each city-GEN KU mayor-ACC meet-PST-DECL
 ‘Every year, the president met with **the** mayor of each city.’

The prerequisite of anaphoricity further allows an implicature to be drawn about the antecedent in a bridging context. As empirically evidenced across languages (Schwarz 2013), a bridging context can be subdivided into a part-whole relation and a producer-product relation, where the weak definite article is typically used for the former context, whereas the strong definite article is required for the latter (Schwarz 2013: 7, (15)):

- (36) a. **Part-whole relation**
Der Kühlschrank war so groß, dass der Kürbis (German)
 The fridge was so big that the pumpkin
Problem los im/#in dem Gemüsefach Untergebracht
 without a problem in-the_{weak}/in the_{strong} crisper stowed
warden konnte.
 be could
 ‘The fridge was so big that the pumpkin could easily be stowed **in the crisper**.’
- b. **Producer-product relation**
Das Theaterstück missfiel dem Kritiker so sehr, dass er in (German)
 The play displeased the critic so much that he in
seiner Besprechung kein gutes Haar #am/an dem Autor ließ.
 his review no good hair on-the_{weak}/on the_{strong} author left
 ‘The play displeased the critic so much that he tore **the author** to pieces in this review.’

The similar pattern of strong definites in bridging use is recognized by KU. As shown in (37b), on the basis of the general knowledge that books have authors, a novel has the corresponding discourse referents with an author, thus facilitating the bridging interpretation. KU freely gives rise to bridging interpretations in the producer-product relation, whereas it cannot occur in the part-whole relation (37a):

- (37) a. **Part-whole relation**
*kyelhonsik-ey ka-ss-ta. (*ku) sinpu-ka phalansayk-ul* (Korean)
 wedding-to go-PST-DECL KU bride-NOM blue-ACC
ip-ess-ta.
 wear-PST-DECL
 ‘I went to a wedding. The bride/#that bride wore blue.’ (Cho 2017, (11))

b. **Producer-product relation**

nay-ka onul sosal-ul han-kwen sa-ss-nuntay, (*ku/*i/*ce*) (Korean)

I-NOM today novel-ACC one-CLF buy-PST-CON KU/this/that

ceca-nun phulangsuin-i-ta.

author-TOP French-be-DECL

'I bought a novel today, and **the** author is French.'

Given the empirical set of data we observed, Korean KU properly gives rise to familiarity in anaphoric, co-varying anaphoric, and bridging contexts, just like other typical definiteness markers across languages. With the close connection between KU and familiarity, I close my discussion in this subsection by showing how the familiarity induced by KU is explained under the framework of Roberts's theory. Building on Heim's (1982) system, Roberts (2002; 2003) refines the framework on definiteness, suggesting two types of familiarity, which are classified as weak familiarity and strong familiarity and shown as follows:

(38) Taxonomy of familiarity:

a. **Strong familiarity:** The NP has as antecedent a discourse referent introduced via the utterance of a (usually) preceding NP.

b. **Weak familiarity:**

i. The entity referred to is globally familiar in the general culture or at least among the participants in the discourse (e.g. through perceptual acquaintance), although not mentioned in the immediate discourse (see (39a) below).

ii. Introduction of the NP's discourse referent is licensed by contextual existence entailments alone (see (39b) below).

iii. Weak familiarity is guaranteed by giving a functional interpretation to the definite description (which function may have to be accommodated) (see (39c–d) below). (Roberts 2002: 112, (46))

(39) a. One stranger to another: the sun is especially hot today.

b. I dropped ten marbles and found only nine of them. The missing marble is probably under the sofa.

c. John read a book about Schubert and wrote to the author.

d. (To a European friend who knows nothing about West Virginia:)

Last weekend we climbed the biggest mountain in West Virginia.

(Roberts 2002: 113–114, (47–50), (52))

The use of definites having strong familiarity is only licensed by prior mention and is anaphoric to a preceding linguistic expression. This is exactly what definite KU does in the discourse, in which its antecedent should be explicitly mentioned

in prior discourse. To wit, the prerequisite of the definite KU is strong familiarity, in which the interlocutors share knowledge and the antecedent should be explicitly mentioned in prior discourse.⁵

3.2 (Anti-)uniqueness/maximality

As observed in previous literature (Chang 2009; Ahn 2017; Cho 2017, among others), the role of KU involves only anaphoric reading and lacks uniqueness/maximality. As shown in the following table, it is bare nouns that encode the property of uniqueness (i.e. argument-saturating) to create a referential expression of type *e* (adapted from Cho 2017: 373, following Chang 2009):

Table 1. Definiteness markers in Korean

	Korean
Anaphoric definite NPs [+uniqueness, +familiarity]	?bare NP/KU
Non-anaphoric definite NPs [+uniqueness, -familiarity]	bare NP/#KU

Whereas Korean bare nouns can form anaphoric definite (exceptionally in subject position marked with a topic marker; refer back to (30) and (31)) and non-anaphoric definite NPs, KU only marks anaphoric definite NPs. The following examples provide crucial empirical support for the current proposal: First, KU does not give rise to uniqueness in situational use (Hawkins 1980; Lyons 1999; Schwarts 2009). Unlike English definite description, which refers to a unique referent associated with the situation mentioned in (40) and (42), the use of KU is redundant and unacceptable in the immediate situation in (41) and the larger situation in (43):

5. One might suggest the use of recollective KU as the counterexample against the strong familiarity use of D_{DR} . For example, KU in (i) denotes a coffee shop from prior experience of the interlocutors' (Cho 1999: 82, (6), adapted from Ionin et al. 2012: 77, (12)):

- (i) *Ku coffee shop-eyse mannaca.*
 KU coffee shop-LOC see
 '(Let's) See you at the coffee shop.'

Although the referent is not explicitly present in the previous sentence, I consider the use of recollective KU as a subtype of domain restrictor in a broad sense of strong familiarity, given that the referent of coffee shop in past experience must have been introduced as an antecedent via the utterance of a preceding NP at some point.

Immediate situation (out of context):

- (40) The moon was very bright last night. (English)
- (41) *eceyspam (*ku) tal-i acwu palk-ass-ta.* (Korean)
 last.night KU moon-NOM very bright-PST-DECL
 ‘The/*that moon was very bright last night.’

Larger situation:

- (42) The President of the United States came to the State of Ohio. (English)
- (43) *(*ku) mikwuk taythonglyeng-i ohaiocu-ey o-ass-ta.* (Korean)
 KU US president-NOM the.state.of.Ohio come-PST-DECL
 ‘The/*that President of the United States came to the State of Ohio.’

As was already mentioned earlier, the recent literature on definiteness in English has argued that the definite *the* and the demonstrative *that* have in common that they both give rise to uniqueness/maximality. The crucial distinction follows from the constraint placed on the *domain* relative to which uniqueness/maximality is computed (Wolter 2006; Ionin et al. 2011, 2012, among others). As illustrated below, although the definite and demonstrative description have in common denoting the unique entity in a given situation as described by situation variable s_n , they differ in the sense that the uniqueness of definite description is defined relative to *the default situation* in (44a), whereas the uniqueness of demonstrative description is defined relative to *the non-default situation* in (44b):

- (44) Semantic entries of *the* and *that*
- a. A sentence of the form [the_n A] B presupposes that there exists a unique individual which is A in s_n and asserts that the unique individual which is A is also B in s_n .
 - b. A sentence of the form [that_n A] B presupposes that there exists a unique individual which is A in s_n , **where s_n is non-default**, and asserts that the unique individual which is A is also B in s_n . (Ionin et al. 2011: 124, (6))

Each example is illustrated in (45). (45a) is a non-salient, default situation in which the sentence contains only one woman. Therefore, the use of the demonstrative *that* is infelicitous. On the other hand, the situation in (45b) contains two women, so it is salient and non-default. In the non-default situation, the definite article *the* cannot pick out a unique referent, but a referent of *that woman* can be made salient through prior mention. They must denote the woman who entered from stage right, the one in the immediately salient context:

- (45) a. The curtain rose. A woman and a man came onto the stage. Then **#that/**
the woman started singing and dancing. (Ionin et al. 2012: 75, (8b))
 b. A woman entered from stage left. Another woman entered from stage
 right. **That/#the** woman was carrying a basket of flowers.
 (Wolter 2006: 59, (4))

Given the assumption that the morphological form of KU corresponds to the demonstrative *ku*, at first glance one might expect that its pragmatic constraint on uniqueness/maximality would be the same as for the English *that*, which is clearly not true. In a default situation that corresponds to the English example in (45a), the occurrence of KU is felicitous. As shown below, in a context where a default situation contains only one woman, the optional use of KU is felicitous. ‘(KU) women’ can felicitously refer back the discourse referent mentioned in the first sentence. If we assume that its function is the same as the English demonstrative as revealed in the translation, and the occurrence of KU is not allowed in a default situation, its occurrence in (46) should be strictly prohibited, which is clearly not:

- (46) *khethun-i ollaka-ss-ta. han namca-wa yeca-ka mwutay-lo* (Korean)
 curtain-NOM rise-PST-DECL one man-CON woman-NOM stage-LOC
nawa-ss-ta. kapcaki (ku) yeca-ka chwumchwu-ko nolaypwulu-ki
 come-PST-DECL suddenly KU woman-NOM dance-CON sing-NOMZ
sicakhay-ss-ta.
 start-PST-DECL
 ‘The curtain rose. A woman and a man came onto the stage. Suddenly **#that/**
the woman started singing and dancing.’

The use of KU is felicitous in a default situation because it can be used in contexts where familiarity is established in the (immediately) prior discourse.

Further, in a non-default situation, KU is also felicitously used. As illustrated in (47), which is the corresponding English non-default situation in (45b), the referent of ‘KU women’ is made salient through prior mention (i.e. the woman entered from stage right). In this case, the overt marking of KU is strongly preferred.

- (47) *han yeca-ka mwutay oyuncok-eyse tuleo-ass-ta. talun* (Korean)
 one woman-NOM stage left-from enter-PST-DECL another
yeca-ka mwutay oluncok-eyse tuleo-ass-ta. ??(ku) yeca-nun
 woman-NOM stage right-from enter-PST-DECL KU woman-TOP
kkochpakwuni-lul tul-ko.iss-ess-ta.
 basket.of.flowers-ACC carry-ASP/PROG-PST-DECL
 ‘A woman entered from stage left. Another woman entered from stage right.
That/#the woman was carrying a basket of flowers.’

The implication of the above empirical examples reveals that a constraint on the domain of KU is not sensitive to (non-)default situations, and such a generalization fails to capture the true spectrum of definiteness in Korean. As will become clear in the next subsection, Korean has distinct devices teased apart into uniqueness and familiarity. KU is employed to encode familiarity only.

I argue that what is common to both KU and typical demonstratives is that they both convey *contrastivity* (i.e. partitivity or anti-uniqueness (Barker 1998)). It is in line with the cross-linguistic tendency that marking contrasted referents is a typical function of anaphoric demonstratives (Diessel 1999). In Korean, when KU is used anaphorically, it tends to place emphasis or contrastive focus on the NP (Ionin et al. 2012, among others). The occurrence of KU presupposes the existence of (implicitly) contrasting with another entity of the NP arguments to which it is attached. In (47), the occurrence of KU is felicitous not because of the non-default situation, but because of contrastivity, which reveals that the woman (who entered from stage right) is being contrasted with another woman (who entered from stage left). The property of contrastivity, which is deeply connected with the notion of partitivity, is crucial characteristic of KU. I shall come back to more discussion of partitivity in § 3.3.

More importantly, although uniqueness/maximality is NOT induced by KU, the interpretation of uniqueness/maximality is necessarily yielded in KU-marked definite NPs. As shown below, KU can be felicitously interpreted as being exhaustive where *KU sonnim* ‘KU guest(s)’ refers back to the maximal antecedent, John, Peter, and Mary in (49a). Its felicitous use is guaranteed by the fact that the sum of John, Peter, and Mary is considered to be maximal individuals that the hearer can single out by means of KU:

Context: John, Peter and Mary are known as notorious guests to their friends. Three days ago, Jack threw a party and John, Peter, and Mary were invited. Today, Ann asks Jack what John, Peter, and Mary were like:

- (48) *Con-kwa Phethe-wa Meyli-ka etteha-(e)ss-ni?* (Korean)
 John-and Peter-and Mary-NOM how.about-PST-Q
 ‘How did John, Peter, and Mary behave?’

Context: Jack answers that he actually liked them as guests. But there were other guests that he did not like. The answer would be:

- (49) a. *ku/*i/*ce sonnim-tul-un kwaynchanh-ass-e.* (Korean)
 KU guest-PL-TOP good-PST-DECL
 ‘The guests (denoting John, Peter, and Mary) behaved well.’

- b. *ku*/*i/*ce *sonnim-tul-un kwaynchanh-ass-e. #haciman Meyli-nun*
 KU guest-PL-TOP good-PST-DECL but Mary-TOP
isanha-ss-ta.
 strange-PST-DECL
 ‘The guests (denoting John, Peter, and Mary) behaved well. #but Mary was strange.’
- c. *sonnim-tul-un kwaynchanh-ass-e.*
 guest-PL-TOP good-PST-DECL
 ‘The guests behaved well.’

The question in (48) sets up an antecedent of John, Peter, and Mary and the set of John, Peter, and Mary creates a *domain of contextually salient subset*, which is characterized as being given in a discourse. When KU combines with *sonnim* ‘guest(s)’ in (49a), it refers back to the maximally salient entities as its antecedent, the set of John, Peter, and Mary. KU-marked NP should include all members of the given set exhaustively. Maximality is further evidenced by (49b). If one assumes that the referent of *KU sonnim* ‘the guest(s)’ in the first sentence denotes John and Peter but not Mary, rather than maximal members given in a discourse, she violates the maximality and the sentence becomes infelicitous. Then how can the interpretation of (49c) be captured? In (49c), the bare plural noun *sonnim-tul* ‘the guests’ is also a felicitous answer. If we drop KU, the domain of the bare nominal *sonnim-tul* ‘the guests’ would be pragmatically determined; thus, it does not have to pick up the exact antecedent. Rather, it would pick up the guests other than them.

As a reviewer pointed out, we might assume that the use of bare nouns also involves a domain restriction. However, the domain restriction induced in (49c) has a crucial contrast from the one in (49b). For reasons soon to be made clear, it must be recognized that the domain restriction of KU is an indexical argument in terms of the truth-conditional meaning of a sentence. On the other hand, the function of bare nouns marked by the topic marker (*n*)*un* in the subject position must be realized by pragmatic saliency. Rather than affecting the truth-condition of the sentence, in a topic situation, the intended referents can be pragmatically identified depending on pragmatic factors such as the speaker’s intention (Lee 1989; Kim 2015). It is due to the fact that topics are not semantically indexed but decided by the salient members of the Question under Discussion (Roberts 1996; Büring 2003; Schwarz 2009; Jenks 2018). In this vein, by dropping KU, the speaker can intentionally denote the guest members other than Peter, John, and Mary and the implication arises that Peter, John, and Mary did not behave well. If the speaker wants to avoid implicature, she will attach KU because it necessarily

picks out the explicit anaphoric antecedent given in the discourse. The following example further support the current claim:

Context: Kim opens an exhibition. There were ten of Kim's paintings in the gallery. Of the 10 paintings, Anne liked three paintings of animals. Anne's friend Jack asked Anne.

- (50) *Kim-uy dongmwul kulim-tul-ul sa-lke-ya?*
 Kim-GEN animal painting-PL-ACC buy-will-Q
 'Will you buy Kim's paintings of animals?'

Anne answers:

- (51) a. *ung, ku kulim-tul-ul sa-lke-ya.*
 Yes KU painting-PL-ACC buy-will-DECL
 'Yes, I'll buy **the** pictures.'
 b. *#ung, kulim-tul-ul sa-lke-ya.*
 Yes painting-PL-ACC buy-will-DECL
 '(intended) Yes, I'll buy **the** pictures.'

As shown above, the bare nouns in object position in (51b) are infelicitous because it is not topic marked. The bare noun *kulim* 'picture' is neither semantically indexed nor pragmatically salient in the discourse. While the discussion on the relationship between the topic marker and discourse saliency is worth pursuing in detail, it is beyond the scope of this paper, and I skip further discussion for reasons of space.

I close this subsection by showing the contrast between Japanese *so-no* and Korean KU. As mentioned in § 2, although the semantic contribution of Japanese adnominal demonstrative *so-no* is analyzed as a domain restrictor, it is not exactly equivalent to Korean KU. According to Kaneko (2012; 2014), *so-no* lacks a uniqueness or maximality presupposition in all its uses. As shown below, the referents of *so-no koinu* 'that puppy' may be not maximally identified with the seven puppies introduced in the preceding sentence, which is confirmed by B's question of 'How many puppies?' (Kaneko 2014: 248, (13)):

- (52) A: *pet shop-ni totemo kawaii koinu-ga nana-hiko imasita.* (Japanese)
 Pet-shop-LOC very pretty puppy-NOM seven-CLF were
watasi-wa so-no koinu-o kaimasita.
 I-TOP SO-NO puppy-ACC bought
 'The pet shop has seven very pretty puppies. I bought (**one, some or all**)
of those puppies.'

- B: *nan-biki katta-no desu-ka?*
 What-CLF bought-COMP COP-Q
 ‘How many (puppies) did you buy?’

In contrast, in the same context, the following question in (53B) is not allowed since it violates maximality:

- (53) A: *phay syop-ey kwieywun kangaci ilkop-mali-ka iss-ess-e.* (Korean)
 pet shop-LOC pretty puppy seven-CLF-NOM exist-PST-DEC
na-nun ku #kangaci-lul/kangaci-tul-ul sa-ss-e.
 I-TOP KU puppy-ACC/puppy-PL-ACC buy-PST-DECL
 ‘The pet shop has seven pretty puppies. I bought **all of those/the** puppies.’
 B: *#myes-mali sa-ss-e?*
 What-CLF buy-PST-Q
 ‘How many (puppies) did you buy?’

This empirical contrast leads us to lead that the behavior of Japanese *so-no* is not exactly equivalent to that of Korean KU.

3.3 Domain restriction

The third characteristic of KU is domain restriction. In this subsection, we see the case of D_{DR} KU functioning as a Q modifier. It is supported by the following empirical evidence in which KU is compatible with quantified nouns such as *free choice items*. Traditionally, there are two types of FCI in Korean, i.e. *nwukwu-na* and *amwu-na*, as shown below:⁶

- (54) a. *nwukwu-na* ‘everyone/anyone’
 b. *amwu-na* ‘anyone’

It has been argued that *wh*-indefinites are “contextually specific” in that they involve a discourse-given (i.e. salient) set. In this regard, *nwukwu-na* is domain-determined, whereas *amwu-na* is domain-undetermined (i.e. domain-widening) (Choi 2007, among others). As shown in the gloss below, *nwukwu-na* denotes the contextually specified set ‘everyone from a contextually specified set’, whereas *amwu-na* is interpreted as ‘anyone’:⁷

6. Korean FCIs are composed of an indefinite and a particle. Basically, there are two indefinites (i.e. *nwukwu-* and *amwu-* ‘who’) and one particle (i.e. *-na* ‘or’) that can combine (Lee et al. 2000; Choi 2007; Park 2009, among others).

7. As discussed in Kim & Kaufmann (2007), they regard the domain of restriction for *nwukwu* is simply extensionally provided whereas that of *amwu* is intensionally provided. I thank Min-Joo Kim (personal communication) for bringing this important point to my attention.

- (55) a. *haksayng-tul nwukwu-na i il-ul ha-lswuiss-ta.* (Korean)
 student-PL who-or this job-ACC do-possible-DECL
 ‘Everyone/all (from a contextually specified set) of the students can do this job.’
- b. *haksayng-tul amwu-na i il-ul ha-lswuiss-ta.*
 students any-or this job-ACC do-possible-DEC
 ‘Any student can do this job.’

Among those two indefinites, KU is compatible only with *nwukwu-na* and denotes a *contextually restricted subset*.

Crucially, just like bare nouns, since the domain of bare FCI is determined depending on the context, its interpretation can be ambiguous. For example, in (56), we notice two different resources of domain restrictions of bare FCI: *nwukwu-na* ‘everyone’ conveys a contextually specified domain ranging over individuals in the semantics class (57a) or every first-year student in the semantics class (57b). Although the FCI *nwukwu-na* allows both interpretations, the interpretation of *nwukwu-na* by itself prefers to pick out the set of everyone in the semantic class:

Scenario: An advisor, Susan, heard that the students of the Semantics I class plan to go to the pub tonight. Susan was worried whether the first-year students were all over 21 years old and if they were allowed to enter the pub. Susan asks another professor, Bill, of Semantics I:

- (56) *il-haknyen haksayng-tul-i phep-ey ka-lswuiss-eyo?* (Korean)
 first-year student-PL-NOM pub-LOC go-possible-Q
 ‘Are first-years allowed to go to the pub?’

And Bill answers:

- (57) *nwukwu-na phep-ey ka-lswuiss-eyo.* (Korean)
 who-or pub-LOC go-possible-DECL
 a. ‘Everyone/all the students (in semantics class) is/are allowed to go to the pub.’
 b. ?‘Everyone/all the students (in the first year) is/are allowed to go to the pub.’
- (58) *ku/*i/*ce (cung) nwukwu-na phep-ey ka-lswuiss-eyo.*
 KU among/of who-or pub-LOC go-possible-DECL
 a. #Everyone/all of the students (in semantics class) is/are allowed to go to the pub.’
 b. ‘Everyone/all of the students (in the first year) is/are allowed to go to the pub.’

When KU is attached to the *na*-indefinite in (58), the domain of FCI is contextually more restricted; thus, *KU (haksayng-tul) (cung) nwukwu-na* can be interpreted as the set of ‘every first-year student in the semantics class’. Given that KU needs some strict linguistic antecedents, KU combines with *wh*-indefinite based quantifiers to yield a domain that is characterized as being given in a discourse contrasted with another (larger) domain. It provides important evidence that uniqueness/maximality is not lexically encoded in Korean KU.⁸ Rather, KU triggers the anaphoric presupposition that the common ground contains an anaphoric set of individuals, a set of first-year students. It needs to pick out the exact antecedent, very much like a property anaphor. KU quantifies over a subset of the students in the semantics class by contrasting two contextual sets (i.e. the students in the semantics class vs. the students in the first year). When the antecedent of KU has an antecedent of quantified set, the domain of KU creates a subset of the contextually salient larger domain in discourse. Hence we get the partitivity.

KU cannot co-occur with QPs whose domain is unrestricted. As illustrated below, *amwu* is a domain-undetermined indefinite (i.e. domain widener in Choi (2007)) and it is *not* compatible with KU, since there is no domain to be referred back anaphorically.

- (59) **ku amwu-na phep-ey ka-lswuiss-eyo*. (Korean)
 KU any-or pub-LOC go-possible-DECL
 Intended: ‘Anyone (from a contextually specified set mentioned before) can do the job.’

The above data provides crucial evidence that the domain-restricting condition is a precondition for the felicitous use of KU. Given the consistent parallels between the KU and domain restrictor we have observed so far, it is plausible to treat KU as a D_{DR} :

- (60) $KU = \text{domain restrictor} = D_{DR}$

As a D_{DR} , KU comes to create an anaphoric domain which presupposes a discourse familiar property to be anchored to.

Summing up, the main role of definiteness markers in Korean is split into the saturating and non-saturating as follows:

- (61) Types for definiteness marking in Korean:
 a. Saturating: covert D: e.g. (35), (41), (43)

8. I thank Klaus von Heusinger and Junko Shimoyama (personal communication) for bringing this important point to my attention.

- b. Non-saturating: D_{DR} KU
 i. D_{DR} on Q: e.g. (58)
 ii. D_{DR} on NP: e.g. (49)

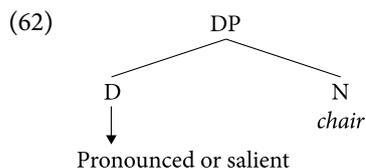
The first type of D is a typical argument-saturating that occurs in bare nouns, which produces a unique or maximal argument of type e ; the other is D_{DR} KU, which gives rise to the familiarity presupposition. The semantic function of KU is relevant to the argument non-saturating. Table 2 summarizes the pattern of definiteness markings across languages (adapted from Jenks 2018: 530, Table 2):

Table 2. Definiteness markings across languages

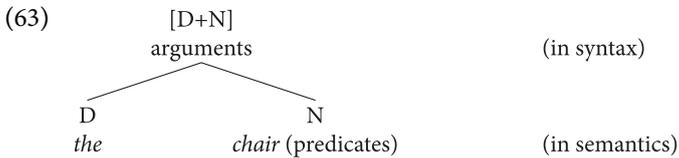
Types of definiteness marking		Languages	Definiteness marker	
			Unique	Anaphoric
<i>Bipartite</i>	<i>Saturating</i>	Fering, Lakhota, ...	Def _{weak}	Def _{strong}
	<i>Non-saturating</i>	(unattested)		
<i>Marked anaphoric</i>	<i>Saturating</i>	Mandarin, Akan	∅	Def _{strong}
	<i>Non-saturating</i> (D_{DR})	Greek <i>o</i> , Basque <i>ak</i> , Salish <i>i...a</i> , Japanese <i>so-no</i> , Korean KU		
<i>Generally marked</i>	<i>Saturating</i>	English, Cantonese	Def	
	<i>Non-saturating</i>	(unattested)		
<i>Marked unique</i>	(unattested)		Def _{weak}	∅

4. Analysis: KU as a contextual domain restrictor

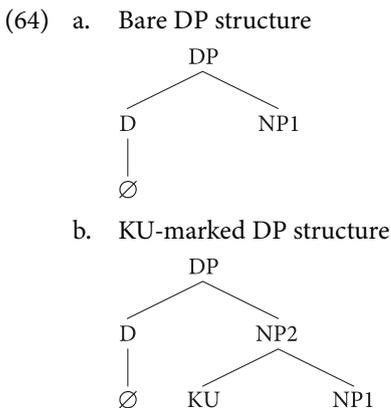
In this section, we introduce the formal mechanisms that underlie the key assumption that two distinct types of definiteness markers can be syntactically integrated into DP. For the syntactic configuration, building on Universal Structure hypothesis (Abney 1987; Szabolcsi 1987; Longobardi 1994), I follow previous studies that Korean employs nominal phrases that are projected by a determiner head (Suh 2005; Chang 2009, among others).



In the sense of Universal Structure hypothesis, all nominal arguments must be DPs in which null determiners can be posited. In this vein, nouns are predicates denoting properties, and the determiner is always present in the structure serving as a type-shifter (i.e. argument-saturating function) turning nouns into arguments:



The definite D has two grammatical functions: semantic D and syntactic D. Given that the syntactic head D has been generally treated as the locus of the semantic feature of uniqueness and maximality (Lyons 1999, among others), we can assume that the covert D in referential use is in the canonical position of D-head. In this vein, in the grammar of Korean domain restriction, D_{DR} should have different syntactic positions and semantic meanings from the traditional definite D. As shown in (64a), unlike English DP where the position of the determiner should be obligatorily filled, the head of D in Korean is filled by the referential Covert D (i.e. left vacant), which is a *default* in forming DP. It is a syntactic D that takes a predicate and makes an argument of type e . On the other hand, in (64b) the operation of D_{DR} KU over the NP does not affect the grammaticality of DP. It makes KU appear optionally for the manifestation of domain restriction in an attachment site for an adjunct modifier in a lower DP layer. As a result, we come to have the following syntactic structure of DP in Korean:



Here I provide a detailed explanation of the strategy for obtaining an e -type denotation in KU marked structure: As a domain restrictor, D_{DR} KU can operate either

on the noun phrase or on the quantificational argument, since D_{DR} is a function indicating indexical argument (Schwarz 2009; 2013). For this, I incorporate Jenks' (2018) proposal in which the indexical argument can be regarded as a property, building on Nowak (2019) and von Stechow (1994). Jenks represents the index! as the domain restriction of the anaphoric definite DP as follows:

- (65) a. Unique definite article: $\lambda s_r \lambda P_{\langle e, \langle s, t \rangle \rangle} : \exists ! x (P(x)(s_r)) . \iota x [P(x)(s_r)]$
 b. Anaphoric definite article: $\lambda s_r \lambda P_{\langle e, \langle s, t \rangle \rangle} \lambda Q_{\langle e, t \rangle} : \exists ! x [(P(x)(s_r) \cap Q(x)) . \iota x [P(x)(s_r)]$

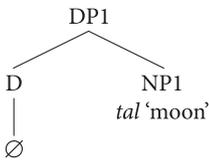
Likewise when KU as a presuppositional determiner undergoes D_{DR} , it actually has an index argument in it, and this index argument makes KU anaphoric. By supplying index, KU triggers the presupposition that the common ground contains a property that can function as the antecedent for index argument. The NP and QP are consequently anaphoric to a discourse familiar property. In this regard, KU's contribution is really this domain restriction, which refers back to the familiar set. It draws values from the intersection of the index argument with the NP. Given that the NP intersection with index argument will be a subset of that NP, KU creates partitivity. Since D_{DR} KU is a type-preserving function, the top (default) D necessarily comes to saturate the predicate. Then the covert D starts out with a denotation that produces something of another type, and then shifts it into a function of type $\langle e \rangle$. In this regard, the contribution of KU in DP is really a domain restriction, as follows:

$$(66) \llbracket \emptyset \rrbracket = \iota = \lambda s_r \lambda P_{\langle e, \langle s, t \rangle \rangle} : \exists ! x (P(x)(s_r)) . \iota x [P(x)(s_r)]$$

$$(67) \llbracket KU \rrbracket = \llbracket D_{DR} \rrbracket = \lambda s_r \lambda P_{\langle e, \langle s, t \rangle \rangle} \lambda Q_{\langle e, t \rangle} \lambda x : (P(x)(s_r) \cap Q(x))$$

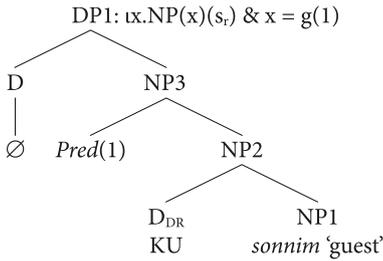
In light of the the above lexical entries, the interpretation of weak and strong DPs in Korean are provided below:

- (68) Unique DP:



1. $\llbracket \text{NP1} \rrbracket^g : \lambda x \lambda s . [\text{moon}(x)(s)]$
2. $\llbracket \text{DP1} \rrbracket^g : \exists ! x [\text{moon}(x)(s') . \iota x [\text{moon}(x)(s')]]$

(69) Anaphoric DP:



1. $\llbracket \text{NP1} \rrbracket^g: \lambda x \lambda s. [\text{guests}(x)(s)]$
2. $\llbracket \text{NP2} \rrbracket^g: \lambda Q_{\langle e, t \rangle} \lambda x. [\text{guest}(x)(s') \cap Q(x)]$
3. $\llbracket \text{NP3} \rrbracket^g: \lambda x [\text{guests}(x)(s') \cap x = g(1)]$
4. $\llbracket \text{DP1} \rrbracket^g: \exists! x [\text{guests}(x)(s') \cap x = g(1)]. \iota x [\text{guest}(x)(s')]$

KU is a function operating on an NP and/or QP and gives back a discourse familiar property which is indexed as $g(x)=1$. And then the phrase has the converter null D for the final saturation. I shall term this discrepancy a *dissociation between meaning* (i.e. the function of D encoding definiteness) and *form* (i.e. D as an argument saturating function) in the DP structure.

Notably, I subsume the expended uses of KU under the more general analysis of domain restriction, which can be conceptually linked to the distinct realm of D_{DR} KU and its stretched emphasis use. As shown below, when the spoken KU receiving high prosodic prominences co-occurs with gradable NPs (just like Focus), the utterance expresses speaker's strong surprise, and the emphatic status is overtly indicated by KU (Kim 2016; 2019). For this reason, it seems appropriate to treat this type of KU as an *emphatic marker* (Lee 1995; adapted from Kang 2018: (1)):

Context: Yesterday, Mary was invited to Kim's place. Kim made dinner with tofu. Today, Ann asks Mary how the dish tasted. Mary tells Ann that the cooking was bad. Mary was surprised at the fact that a dish made with tofu could be unsavory because she likes tofu and tofu is delicious. Mary says:

- (70) *yoli-nun masep-ess-e. (kim-i) KU_{H%} masiss-nun*
 dish-TOP unsavory-PST-DECL Kim-NOM KU_{emphatic} delicious-ADNZ
twupwu-lo kulen masep-nun yoli-lul mantul-ess-e!
 tofu-with such.a unsavory-ADNZ dish-ACC cook-PST-DECL
 'Kim cooked an unsavory dish with that/the delicious tofu.'
 'The dish was unsavory. (It is unbelievable that) Kim cooked such an unsavory dish with that much delicious tofu!'

The emphatic KU raises an unexpectedness effect (i.e. mirativity): it encodes the speaker's strong surprise at the unexpected situation in which Kim cooked an unsavory dish with delicious tofu. On its semantico-pragmatic effect for the felicitous

use of the emphatic KU, Kang (2015; 2018) suggests that the following two conditions should be met: First, there are (at least two) alternative individuals restricted in the context. Second, the implicature triggered by the emphatic KU contributes to scalarity by presupposing that the alternatives are ranked on a scale. In this vein, the emphatic KU contributes a scalar implicature associated with the least likely end of the likelihood scale. Since the proposition with a low likelihood was out of the subject's expectation, the speaker's strong surprise arises. Given the above requirement, the use of emphatic KU originates from D_{DR} since the first feature of the prerequisite (i.e. the assertion of the existence of contextually restricted alternative individuals) comes from the contextual restrictor that, I argue, is lexically encoded in the D_{DR} KU.⁹ In light of this observation, we can conclude that the behavior of emphatic KU provides a crucial implication for the extended role of domain restriction. Much more needs to be said to gain a full understanding of the link between the emphatic KU and D_{DR} , which remains on my future agenda.

5. Conclusions

Recent studies of definiteness in DPs have yielded several theoretical analyses of their semantics, which have different implications for cross-linguistic variation. The aim of this paper was to contribute to this debate by offering a novel semantic analysis of the Korean definiteness system. Its original motivation was that the traditional analysis of definiteness, which relies on the definite article attributed to their morphosyntactic properties, is not satisfactory. From a cross-linguistic perspective, languages exhibit a range of morphological overt markings that are linked

9. I am grateful to the anonymous reviewer for suggesting that not only KU, but also *i* 'this' involves the emotive use, as follows:

- (i) *i nappun nom-a!*
 this bad guy-EXCL
 'This bad guy!'
- (ii) *paro i haksayng*
 right this student
 'This very student'

However, it seems that the emotive function of *i* does not directly correspond to KU. In (i), unlike KU, the referent of *bad guy* should be visually present (e.g. in front of the speaker) in a given context. Further, in (ii), the role of *i* appears to be based on the specificity as speaker's noteworthiness rather than the interlocuter's common ground. An analogous fact holds *this* in spoken English (Ionin 2006). Detailed discussion on this phenomenon is another worthwhile topic for further investigation.

to the notion of domain restriction. I showed that in Korean the morphological demonstrative element KU is adopted for the legitimate function of the domain restriction to anaphorically denote the indexical property in natural languages.

Although KU is fully qualified as a definiteness marker, it has not yet fully taken over the syntactico-semantic role of the definite article. This is evidenced by the Korean D system split into the dichotomy of argument-saturating and non-saturating. In this vein, we could get the dissociation in the grammar between the semantics and syntax of D. Developing such an account will afford us more detailed insight into the wide-ranging spectrum of domain restriction. In order to see the full picture of the role of domain restrictor, future studies should conduct an investigation that will provide an account of the landscape of KU in Korean.

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Abbreviations

ACC	accusative	NOM	nominative
ADNZ	adnominalizer (suffix)	NOMZ	nominalizer
ASP/PROG	aspect (progressive)	NP	noun phrase
C	context	NP _i	indexed noun phrase
CLF	classifier	PL	plural (particle)
CON	connective	POL	polite (speech-level particle)
D _{DR}	domain restrictor	PRES	present tense (suffix)
DECL	declarative (ending)	PST	past tense (suffix)
DOM	domain	Q	question marker
EXC	exclamative	Q	quantifiers
FCI	free choice item	QP	quantificational phrase
GEN	genitive (particle)	REL	relative
ι	iota, maximality	S _r	resource situation variable
LF	logical form	SG	singular
LOC	locative	TOP	topic (particle)
max	maximality	W.R.T.	with regard to

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