Anti-specific *wh-indeterminates* in Korean: referentially vague indefinite *wh-inka*

Arum Kang and Suwon Yoon
University of Chicago and University of Texas, Arlington
[arum@uchicago.edu, suwon.yoon@uta.edu]

Abstract. The main goal of this paper is to investigate anti-specific *wh-indeterminates* in Korean, identifying *wh-inka* as a marker of referentially vague indefinite (RVI). We propose that the RVI *wh-inka* functions as an indicator of the speaker's epistemic uncertainty about the identity of the referent, and that the evaluation of *wh-inka* is driven by an epistemic constraint, i.e. non-exhaustive variation (Giannakidou and Quer 2013; Giannakidou and Yoon 2016). Based on the diachronic analysis that the determiner *inka* is a reanalyzed form of the question marker *nka*, we further provide an answer for the reason why the anti-specificity marker *inka* conveys speaker's ignorance—residual effects of properties prior to the semantic reanalysis. We thus conclude that Korean has two paradigms of RVIs: polarity-sensitive *wh-rato* and non-polarity-sensitive *wh-inka*.

Our analysis on the semantic properties of *wh-inka* has the following implications. First, the speaker's indeterminacy encoded in wh-indeterminates does not come with the preconditions of propositional alternatives, challenging the core assumption in Alternative Semantics. Second, the referential vagueness constraint on *wh-inka* indicates that *wh-inka* forms a *dual* of the referential indefinite *this*_ref in English. Finally, contrary to Haspelmath's generalization on the grammaticalization from indefinites to interrogatives, the grammaticalization of *wh-inka* suggests that the change can be bidirectional.

Keywords. Wh-indeterminates • (anti-)specificity • referential vagueness • Alternative Semantics

1. Introduction

Close parallels between *wh*-words and indefinite NPs are frequently observed crosslinguistically in unrelated languages (Haspelmath1997). In articleless languages such as Korean, Japanese and Chinese, due to the lack of morphology that directly encodes any of the semantic concepts corresponding to the (in)definite article, they employ the same morphological forms for *wh*-words and corresponding (in)definites. Since *wh*-words change their function depending on the particles they are associated with, they are termed *wh-indeterminates* (Kuroda 1965; Huang 1982; Cheng 1997; Shimoyama 2001, 2006, a.o.). These particles are realized as a set of distinct lexical items marked with special morphology. Among them, some *wh*-indeterminates are characterized as *anti-specific*. The term anti-specificity refers to the phenomenon of the contrary of specificity, which is driven by the opposite epistemic constraint. Anti-specific markers are indicators of the speaker's indeterminacy on the value or identity of the indefinite. The prominent manifestation of the landscape of anti-specificity in this paper comes from Giannakidou's taxonomy:

(1) The landscape of anti-specificity (Giannakidou 1995 et seq.):

    a. Negative polarity (non-emphatic)

    b. Free choiceness

    c. Referential vagueness

The distribution of anti-specific particles for *wh*-indeterminates is well displayed in Korean. Korean employs (i) *wh-na* for FCIs (Choi 2007; Kim and Kaufmann 2007; Park 2009); (ii) *wh-rato* for RVIs/NPIs (C.Lee 1999; C.Lee 2003; Lee 2010; Lim 2015; Giannakidou and Yoon

2016, inter alia); and (iii) *wh-inka* for epistemic existential quantificational interpretation. (2)-(4) illustrate the typical examples:

(2) Nwukwu-**na**   o   ulswu iss-ta.   *FCI*

    who-NA   come   possible-Decl

    'It is possible that anyone/everyone/all the people come in.'

(3) Nwukwu-**rato**   o-ass   ulswu iss-ta.   *NPI (non-emphatic)/*

    who-RATO   come-Past   possible-Decl   *RVI (indifference)*

    'It is possible that some guy or other came in.'

(4) Nwukwu-**inka**   o-ass-ta.   *Existential (epistemic ignorance)*

    who-INKA   come-Past-Decl

    'Someone (I don't know who he is) came in.'

The inventory of anti-specific wh-indeterminates in Korean is given below:

Wh-words	**RVI** (ignorance): *wh-inka*	
nwukwu	*nwukwu-**inka***	'someone (I don't know who he is)'
mwues	*mwues-**inka***	'something (I don't know what it is)'
	NPI (non-emphatic)/ **RVI** (indifference): *wh-rato*	
nwukwu	*nwukwu-**rato***	'anyone/someone or other'
mwues	*mwues-**rato***	'anything/something or other'
	FCI: *wh-na*	
nwukwu	*nwukwu-**na***	'whoever'
mwues	*mwues-**na***	'whatever'

Table 1: The inventory of anti-specific *wh*-indeterminates in Korean

The diverse paradigm of anti-specificity particles that we suggest here implies that the class of Korean anti-specific indeterminates is not homogeneous, and fine-grained constraints govern their value assignment.

Compared to the FCI *wh-na* and the RVI/NPI *wh-rato*, the discussion on *wh-inka* started only recently (Ha 2004; Choi 2011; S.Yun 2011; J.Yun 2013; Kang 2015, to appear) because the meaning of *wh-inka* has been generally assumed to be akin to a bare *wh*-indeterminate. A closer look, however, reveals that *wh-inka* is distinct from mere existential expressions because it manifests referential deficiency. As shown in (6), it never induces epistemically specific interpretations. It is evidenced by "guess who" test (Haspelmath 1997, Aloni 2011) which requires a fixed value, hence its incompatibility with *wh-inka* indefinite in (6) reveals the referential deficiency, meaning 'someone or other':

(5) Nwukwu-ka   o-ass-ta.   Nwukwu-key?

    who-Nom   come-Past-Decl   who-Q

    'Someone came in. Guess who?'

(6) Nwukwu-**inka**   o-ass-ta.   #Nwukwu-key?

    who-INKA   come-Past-Decl   who-Q

    'Someone (I don't know who he is) came in. #Guess who?'

By using *nwukwu-inka*, the speaker does not have someone particular in mind and conveys that she is unable to identify the individual in question. More specifically, *wh-*

inka signals the speaker's *epistemic uncertainty* about the identity of the referent. We provide a comprehensive study on the system of Korean anti-specific indeterminates, focusing on the newly identified *wh-inka* as a marker of referential vagueness. Given that *wh-rato* is a polarity-sensitive RVI (Giannakidou and Yoon 2016), we show that Korean has two paradigms of RVIs: polarity-sensitive RVIs such as *wh-rato,* and non-polarity-sensitive RVIs, which we argue with *wh-inka.*

Exploring the semantic properties of *wh-inka*, we show the following: First, a speaker's indeterminacy of the RVI *wh-inka* comes with the preconditions of *individual* alternatives, rather than propositional alternatives. Second, the precondition of individual alternatives for *wh-inka* is only partial variation, i.e. *referential vagueness*, as opposed to domain exhaustification which is the core property of the FCI *wh-na* (Giannakidou and Quer 2013); although they uniformly impose a non-fixed value constraint, the crucial difference between FCIs and RVIs lies in the fact that the constraint for referential vagueness exhibits a weaker form of indeterminacy which is *non-exhaustive* variation. Finally, *wh-inka* is neither a defective nor polarity-sensitive indefinite. It is summarized as follows:

(7) Two dimensional property of the RVI *wh-inka*

    a. Non-exhaustive variation in possible values

    b. Non-polarity (non-containment of dependent variable)

The rest of this paper is organized as follows. Section 2 provides background on specific indefinites and anti-specific indefinites, discussing the basic properties of indefinite determiners in terms of markedness. Section 3 compares our analysis with previous approaches to the notion of alternatives in referentially vague indefinites. Our approach is further supported by historical process of grammaticalization. Presenting a set of novel data of *wh-inka*, section 4 provides fine-grained distinctions between the *wh*-based anti-specific indefinites in Korean, and elaborates on our core proposal, including the referential vagueness condition. Section 5 compares Korean RVI *wh-inka* with FCI *wh-na* in terms of the (non)exhaustive variation of the domain. Finally, section 6 concludes and discusses remaining questions.

2. Landscape of (anti-)specificity

2.1 Markedness and (anti-)specificity

It is generally agreed upon that the English indefinite article *a(n)* is *unmarked*. In fact, it is an unmarked argument marker since it contributes no constraints on the variable it introduces. On the other hand, there are *marked* indefinite Ds with which the speaker intends to convey something more than just that the referent of the existential indefinite *exists*. The proliferation of marked indefinite determiners in languages is not redundant, but rather an indication that each determiner is the place where the speaker's epistemic state is differentiated. Whereas (8a) with the indefinite article *a* merely states that one student came to see me, (8b) with *a certain/a particular* implies that some specific student came to see me. The latter has more constrained distribution than the one with the

indefinite article *a*. Unlike the unmarked-article-headed indefinite in (8a) which scopes freely, the value of the indefinite in (8b) is fixed and the resulting reading is truth conditionally equivalent to a reading where the indefinite has wide scope:

(8) a. **A** student came to see me.

    b. **A certain/a particular** student came to see me.

Modifiers such as *a certain* and *a particular* are called *specificity markers*. These specificity markers indicate a rigid reference in the speaker's mind. Originally introduced in the 1960s to explain that some types of indefinites can introduce discourse referents whose pronouns are taken up in opaque contexts, the term *specificity* has been generalized to encompass various properties of indefinites: (i) referentiality (Fodor and Sag 1982); (ii) identifiability as a felicity condition of unique reference by the speaker (Ionin 2006); (iii) topicality of specific indefinites (Endriss 2009), etc.

      Crosslinguistically, the notion of specificity is marked by various grammatical features: as overt lexical entries, for instance, we have *a certain/this* in English, *précis* 'certain' in French and *bestimmt* 'a certain' in German (Prince 1981a; Maclaran 1982; Heusinger 2011; Ebert et al. 2012; Ionin 2013; Martin 2013, inter alia). Prosodic marking is also deeply related to specificity. The homophony of 'one' and 'a' and their differentiation via stress is commonly observed in a number of languages. In Greek, for example, the unstressed *enas, mia* and *ena* 'one' become an indefinite article which is equivalent to the English *a* indefinite when they are stressed as *énas, mía, éna*

(Giannakidou 2011a). In Modern Hebrew, when a numeral *exád* gets unstressed and phonologically reduced to *xad*, it functions as a specificity marker 'one' (Borer 2005). In English, we have emphatic *some* (i.e. referential *some*) and non-emphatic *some* (i.e. referentially deficient *some*).

On the other hand, some indefinite determiners convey information about the speaker's lack of knowledge since Haspelmath (1997) includes *(lack of) knowledge of the speaker* as one of the possible dimensions of variation within the class of indefinites. For example, a wide scope reading is not available for *some student* in (9) since it does not lend itself naturally to a referential use:

(9) **Some** student came to see me.

This type of lack of specificity is termed *anti-specificity*.[1]

On the nature of (anti-)specific indefinites, Brasoveanu and Farkas (2010) further analyze the non-neutral uses of the specificity markers, suggesting the following

---

[1] Various types of anti-specificity markers have been observed crosslinguistically: e.g. English singular *some or other* (Farkas 2002b), German *irgendein* (Kratzer and Shimoyama 2002, Aloni and Port 2014), Spanish *algún* (Alonso-Ovalle and Menéndez-Benito 2003; Alonso-Ovalle 2008; Alonso-Ovalle and Menéndez-Benito 2010; Alonso-Ovalle and Menéndez-Benito 2011), French *n'importe qu*-series (Zabbal 2004; Jayez and Tovena 2006), Italian *(un) qualche* (Zamparelli 2007), Romanian *vreun* (Farkas 2002a, 2006; Falaus 2009, 2011), the *-to* series in Russian (Yanovich 2005), Hebrew *eyze* (Kagan and Spector 2008), the Japanese *wh-ka* indeterminates (Sudo 2010; Kaneko 2011; Alonso-Ovalle and Shimoyama 2014), Chinese *wh*-indeterminates (Chierchia and Liao 2014), and *wh-hari* and *wh-de* in Sinhala and Indo-Aryan language spoken in Sri Lanka (Slade 2011), Yacatec Maya *wáa* (AnderBois 2011, 2012), and Greek *kapjos, kanenas* (GQ 2013) (Most examples here are taken from Alonso-Ovalle and Menéndez-Benito 2013: 105-106). These approaches are not one and the same theory, but they essentially share the idea that the indefinites are *anti-specific*.

categories (see also Prince 1981a; Farkas 2002a; Jayez and Tovena 2002; Ionin 2006; Alonso-Ovalle and Menéndez-Benito 2010; von Heusinger 2000, inter alia):

(10) a. Family of specificity markers: Ds that have the semantics of ordinary indefinites + a constraint that leads to relative **stability** of reference.

b. Family of anti-specificity markers: Ds that have the semantics of ordinary indefinites + a constraint that leads to relative **variability** of reference.

The distinction between specificity and anti-specificity markers depends on the nature of the constraint on D which contributes different values w.r.t. stability/variability of reference. With a use of a morphologically overt D as a specificity marker, in the specific reading, the value of indefinites is fixed and the speaker's epistemic identifiability is imposed. On the other hand, by choosing to use an anti-specific determiner, the speaker ensures that she has no particular individual in mind. The value of anti-specific indefinites is not fixed and the speaker's epistemic non-identifiability is reflected. An important question arises at this point: what is responsible for this heterogeneous nature of specificity vs. anti-specificity constraints? To answer this question, we first review previous theories on the core properties of (anti)specificity markers in the following subsections.

2.2 Specificity marker: *this*-indefinites

In this subsection, we briefly review the core properties of specificity suggested in the literature. Our analysis on the use of specificity markers is built upon the felicity condition developed by Ionin (2006): she proposes that the English *this* encodes the semantic feature which she called specificity as *noteworthiness*, a concept built upon Fodor and Sag's view of referentiality. The notion of noteworthiness is based on Maclaran's term, where he states: "(it) draws attention to the fact that the speaker has a particular referent in mind, about which further information may be given (Maclaran 1982: 90)." It expresses that a specific indefinite introduces a new discourse referent such that the speaker has a *unique individual in mind*, which contributes a noteworthy property to the introduced referent. Accordingly, it ensures that *this*-indefinites obligatorily take scope above intensional verbs and modals. When an indefinite DP is in the scope of an intensional/modal operator, as in (11a)/(12a), *this*-indefinite is infelicitous, as in (11b)/(12b) (Ionin 2006: 180):

(11) a. Sarah wants to read √a/√this book about butterflies, but she can't find it.

    b. Sarah wants to read √a/#this book about butterflies, but she can't find one.

(12) a. Jeff must read √a/√this book about butterflies for his class, but he can't find it.

    b. Jeff must read √a/#this book about butterflies for his class, but he can't find one.

Drawing a distinction between presupposition and felicity conditions, Ionin treats the deictic *this* and the referential indefinite *this* (i.e., *this*-indefinites) as two separate lexical items. She proposes three properties of referential indefinite *this* in (13):

(13) Properties of DPs headed by *this_{ref}* (Ionin 2006)

    a. They are indefinite;

    b. They do not take narrow scope with respect to intensional/modal operators or negation;

    c. Their felicity is affected by noteworthiness

The semantics for specificity is defined as in (14):

(14) Indefinite *this* (Ionin 2006: 187):

    A sentence of the form [sp α]ξ expresses a proposition only in those utterance contexts c where the following felicity condition is fulfilled: the speaker of c intends to refer to exactly one individual x_c in c, and there exists a property φ which the speaker considers noteworthy in c, and x_c is both α and φ in c. When this condition is fulfilled, [*this_{ref}*]ξ expresses that proposition which is true at an index *i* if x_c is ξ at *i* and false otherwise.

From the standpoint of *Maximize presupposition* (Heim 1991), indefinite *this* denotes that a specific or referential indefinite introduces a new discourse referent such that the

speaker has a *unique individual in mind*, which contributes a noteworthy property to the introduced referent.

The lexical entry below contains a felicity condition on the context and ensures that the speaker intends to refer to a particular individual in the world of utterance, thus the individual must exist in the actual world:

(15) Felicity condition (Ionin 2006: (23a)):

$\lambda i.[[\text{sp } \alpha]]^{c,i}$ is defined for a given context c, iff s_c in w_c at t_c intends to refer to exactly one individual x_c, and $\exists\varphi_{<s,et>}$ which s_c in w_c at t_c considers noteworthy, and $\alpha(w_c)(x_c) = \varphi(w_c)(x_c) = 1$. If this condition if fulfilled, $\lambda i.[[\text{sp } \alpha]]^{c,i} = \lambda i.x_c$.

Note that the felicity condition is crucially different from a presupposition: whereas a presupposition is a proposition assumed to be true by both speaker and listener, a felicity condition focuses on the knowledge state of the *speaker*. In deciding to use a referential *this*-indefinite in English, the speaker considers only her own view of what is *noteworthy*, and not the state of her listener's knowledge. From the standpoint of the discourse, a felicity condition is weaker than a presupposition.

2.3 Referential vagueness

Various referentially vague indefinites have been documented in a number of languages, e.g. *kápjos/kanena* in Greek, *algún* in Spanish (Giannakidou and Quer 2013) and Korean *rato*-NPIs (Giannakidou and Yoon 2016). Referentially vague indefinite is the indicator

of the speaker's epistemic indeterminacy/ignorance about the identity of the referent without having a fixed value. The speaker's ignorance constraint can be tested with an epistemic judgment with respect to three diagnostics, i.e., ostension, naming, description, that Aloni and Port (2010) suggest. As shown below, none of them is compatible with RVIs (Giannakidou and Quer 2013: (77)-(82); Giannakidou and Yoon 2016: (47)-(48)):

(16) *Naming*

    a. Tengo que quedar con **algún** professor. #Se llama Regine Eckardt. [Spanish]

     'I have to meet with some professor or other. #Her name is Regine Eckardt.

    b. Thelon a miliso me **kanena** glosologo. #To onoma tu ine Veloudis. [Greek]

     'I have to talk to a linguist *some linguist or other. #His name is Veloudis.'

(17) *Ostension*

    a. Tengo que leer un artáculo de **algún** professor. #Es aquella senora de allí, pero no sé cójo se llama.   [Spanish]

     'I have to read an article of some professor or other. ??It's that lady over here, but I don't know her name.'

    b. Thelon a miliso me **kanena** glosologo. #Ine aftos o kyrios eki.   [Greek]

     'I have to talk to a linguist *some linguist or other. #It's that guy over there.'

    c. Na-nun enehak kyoswu   {amuwu/nwukwu}-**rato**   manna-ko siph-ta.

     I-Top   linguistics professor   anyone-even meet-C   want-Decl

     Kukes-un   ceki   ce namca-ta.

      it-Top   there   that guy-Decl   [Korean]

'I want to meet a linguistics professor, *some professor or other*. #It's that guy over there.'

(18) *Description*

a. Tengo que quedar con **algún** professor. #Es el director del Departamento de Filisofía.   [Spanish]

b. Thello na miliso me **kanenan** kathijiti. #Ine o propedros tu tmimatos filisofías.

'I want to meet some professor or other. #He is the head of the Philosophy Department.'   [Greek]

The job of second sentences in examples (16)-(18) is to introduce a specific value, which is why the use of these indefinites becomes odd. All of these indefinites are sensitive to the knowledge of the speaker: it is required that the speaker be in a state of uncertainty on the value of the indefinite.

(Non)exhaustive variation is a key component of anti-specificity. The existence of multiple individual alternatives is a prerequisite for the felicitous use of the FCI, which Giannakidou (2001) defines as follows, capitalizing on the notion of i(dentity)-alternatives (borrowed from Dayal 1998) with variation-based analysis. Simply put, variation refers to different individuals in different worlds. The i(dentity)-alternatives are determined within the set of worlds (intentional variation) compatible with the speaker's beliefs in the world of evaluation.[2] The exhaustive variation is schematized as follows:

---

[2] The variation condition is that there are distinct i-alternatives: "The definition of i-alternatives...requires that there be at least two worlds, distinguishable on the basis of the denotation of the FR. That is, as far as the speaker is concerned, the identity of the object

(19) **i-alternatives** (= epistemic alternatives: Giannakidou 2001)

A world w1 is an i-alternative w.r.t. α iff there exists some w2 such that $[[\alpha]]^{w1} \neq [[\alpha]]^{w2}$ and for all $\beta \neq \alpha$: $[[\beta]]^{w1} = [[\beta]]^{w2}$

The i-alternatives ensure that in each world we consider, a different value will be drawn for the FCI variable, and this occurs until we exhaust all values for all possible worlds. As such, the free choice effect amounts to *domain exhaustification*. The FCI requires that there be a plural domain, and that we exhaust all values in this domain. Thus the semantics of (20a) containing FCI-*opjondhipote* can be illustrated as in (20b) (GQ 2013 (29″)):

(20) a. I Ariadne bori na milise me opjondhipote. [Greek]

the Ariadne may subj talk.3sg.pfv with FCI-person

'Ariadne may have talked to anybody.'

b. $\forall w' \in w_{epistemic(w)}$, x: [person (x in w′)] [talked (Ariadne, x, in w′)]

Presupposition of **exhaustive variation**: $\forall d \in D_{FCI}$.∃w.person(d)(w) and Ariadne talks to d in w′.

---

denoted by the FR should still be open. For if the speaker has a belief about the identity of the unique relevant individual, there cannot be two worlds in *f(w)(s)* that will qualify as i-alternatives. The *ever* FR will be infelicitous because quantification will be over an empty domain." (Dayal 1997: 109)

An important point here is that exhaustive variation is not a grammatical condition, but a presupposition. If the FCI fails to satisfy the condition of exhaustive variation, the sentence is infelicitous, rather than ungrammatical.

Unlike free choice, referentially vague indefinites impose a condition of non-exhaustive variation. They simply require there to be differing values. In this sense, referential vagueness exhibits a weaker form of indeterminacy in that there be at least two alternative worlds where the RVI receives distinct values. Given this minimal choice, the speaker cannot know which value is the actual one.[3] The constraint of referential vagueness is defined below:

(21) *Referential vagueness*: *minimal* variation and *uncertainty* (Giannakidou and Quer 2013)

> (i) A sentence containing a referentially vague indefinite α will have a truth value
>
> > iff: $\exists w1, w2 \in W$: $[[\alpha]]^{w1} \neq [[\alpha]]^{w2}$; where α is the referentially vague
> >
> > > indefinite.
>
> (ii) The worlds w1, w2 are epistemic alternatives of the speaker: $w1, w2 \in$
>
> > M(speaker), where M(speaker) is the speaker's belief state, the worlds compatible

---

[3] The condition of non-exhaustive variation is similar in spirit to the *anti-singleton constraint* by Alonso-Ovalle and Menéndez-Benito (2010: (54)):

(i) $[[algún]] = \lambda f_{et,et} \lambda P_{e,t} \lambda Q_{e,t}$: anti-singleton(f).$\exists x[f(P)(x) \& Q(x)]$

Here we can think of non-exhaustive variation arising from the need to have at least two alternatives.

with what she believes/knows.

(iii) The speaker does not know which value is the actual value (vagueness, ignorance)

As a result, RVIs are weaker than FCIs, exhibiting domain non-exhaustification. The epistemic state of the speaker is modeled standardly as a set of worlds M(speaker) compatible with what the speaker knows or believes in the base world w. Epistemic models are defined as doxastic functions: "sets of worlds compatible with what an individual believes in a world *w*" (Heim 1992). Given that referential vagueness crucially relies on the speaker's epistemic state, the relevant world for assessment is assumed to come from the speaker's belief model:

(22) Epistemic model of an individual (Giannakidou 1998, 2009): An epistemic model of an individual *x*, $M_E(x)$, is a set of worlds w' accessible from a world w, compatible with x's beliefs in w.

By choosing to use the RVI, the speaker believes that there is more than one value in the contextual domain for RVI. The truth conditions for the RVI will be as follows (Giannakidou and Quer 2013: (104)-(105)):

(23)   Particular individual in mind = fixed value in $M_B(s)$:

w1 → Bill, w2 → Bill, w3 → Bill

(24)   No particular individual in mind = no fixed value in M$_B$(s):

w1 → Bill, w2 → Nicholas, w3 → John, w4 → ?

The belief worlds are available as a parameter of evaluation, via the individual anchor, and are not directly represented in LF.

3. Empirical motivations

3.1 Wh-source without question meaning: individual alternatives of *wh-inka*

Since languages with *wh*-indeterminates have a strong tendency to employ question markers, insights from Hamblin semantics have induced an equivalent analysis in languages employing overt Q-markers and other particles in a series of works (Kratzer and Shimoyama 2002; Kratzer 2005, a.o.). Kratzer and Shimoyama's analysis is couched in a semantic framework in which the LF of a sentence containing *wh*-indeterminates is formulated by composing propositional alternatives. Under this analysis, the expressions such as a bare wh-indeterminate *who-indeterminate* in w denote the set of persons in w and a verb *oassta* 'came-in' denotes the singleton set containing the property of 'come in'. Then the rule of Point-wise Functional Application applies to these denotations, as defined below:

(25) Point-wise Functional Application (Kratzer and Shimoyama 2002):

If α is a branching node with daughters β and γ, and $[[\beta]]^{w,g} \subseteq D_\sigma$ and $[[\gamma]]^{w,g} \subseteq D_{<\sigma,\tau>}$, then $[[\alpha]]^{w,g} = \{a \in D_\tau : \exists b \exists c [b \in [[\beta]]^{w,g} \ \& \ c \in [[\gamma]]^{w,g} \ \& \ a = c(b)]\}$

Via Point-wise functional application, the LF of a sentence containing a *wh*-indeterminate is structured by composing propositional alternatives of a higher type, as shown in (26) below.

(26) [[who-indeterminate came]]^{w,g} = {p: ∃x[person(x)(w) & p = λw'.came(x)(w')]}

= {Ann came, Bill came, Charles came…} (for all the man in the world of evaluation)

The propositional alternatives expand until they are closed with a propositional quantifier. The propositional quantifiers can be an existential, or a question operator, as in (27) below:

(27) [{?/∃}*p* . . . *p*:[*wh*-indeterminate VP]]

Then the semantics of the existential is formulated as below, denoting a singleton set of proposition:

(28) Where A is a set of proposition, we have:

a. [∃](A) = {the proposition that is true in all worlds in which some proposition in A is true}

b. ∃([[who-indeterminate came]]^{w,g}) = {there is at least one person that came in w}

However, the assumption of *propositional alternatives* can be refuted on empirical ground in the analysis of Korean *wh-inka*. A closer look reveals that *wh-inka* never receives wh-question meaning. The problem, as illustrated below, is that when *wh-inka* forms a question, it is obligatorily interpreted as a yes-no question. If we follow Hamblin semantics, however, the existence of Q-particle *ni* in (29) cannot account for the lack of *wh*-question interpretation:

(29) a. Nwukwu-**inka**　　　o-ass-ni?

　　　who-INKA-Nom　　come-Past-Q

　　　'Did Someone (I don't know who it is) come in?'

　　　~~'Who came in?'~~

　b. Swuni-ka　　　mwues-**inka**(-lul)　　mek-ess-ni?

　　　Swuni-Nom　what-INKA-Acc　　eat-Past-Q

　　　'Did Swuni eat something (I don't know what it is)?'

　　　~~'What did Swuni eat?'~~

　c. Swuni-ka　　　cha-lul　　　ettehkey-**inka**　kochi-ess-ni?

　　　Swuni-Nom　car-Acc　　　how-INKA　　fix-Past-Q

　　　'Did Swuni fix the car somehow (I don't know how it is)?'

　　　~~'How did Swuni fix the car?'~~

The puzzle is: how do we explain the lack of *wh*-question interpretation here? Unlike in English which employs morphologically distinct lexical items for *who* and *someone*, Korean employs the same morphological forms for *wh*-words and corresponding (in)definites, e.g. *nwukwu* 'who/someone'. We assume that *inka* only combines with existential *wh*-indeterminate *nwukwu* 'someone', whose existential quantification is assumed to be reducible to a logical disjunction (i.e. join operator), as follows:

(30)   Someone:

   a. $\lambda w. \exists x[\text{person}(x)(w)]$

   b. $\lambda w[\text{person}(a)(w) \vee \text{sing}(b)(w) \vee \text{sing}(c)(w), \ldots]$

The two dominant views on disjunction are (i) disjunction as a join operator ($\vee$) in classical logic and (ii) disjunction generating alternatives in research on propositional alternative semantics (Alonso-Ovalle 2006, inter alia). The core idea of alternative semantics is that the argument of a disjunctive involves *propositions*, i.e. denotation of a disjunction is a set of propositions. Accordingly, the join of two propositions A and B can be computed by taking their union, $A \cup B$:[4]

---

[4] The *or* rule is as follows (Alonso-Ovalle 2006):

Where $[\![B]\!]^g, [\![C]\!]^g \subseteq D_\tau$, $\left[\!\!\left[\begin{array}{c} A \\ \bigwedge \\ B \quad or \quad C \end{array}\right]\!\!\right]^g \subseteq D_\tau = [\![B]\!]^g \cup [\![C]\!]^g$

21

(31) $[\varphi \lor \psi] = [\varphi] \cup [\psi]$

Making the case for a novel approach to disjunction, Alonso-Ovalle (2006) argues that *or* forms a set of propositions, as follows:

(32) Ann sings, or Bill sings, or Charles sings:

   $\{\{w: sing(ann)(w)\}, \{w: sing(bill)(w)\}, \{w: sing(charles)(w)\}\}$

Within this system, the semantics of disjunction as a set of propositions is equivalent to that of a question. The meaning of a question also has been taken as a set of propositions that serve as its possible answers:

(33) a. Who sings? :

   $\{p: p = \{w: sing(ann)(w)\} \lor p = \{w: sing(bill)\} \lor p = \{w: sing(charles)\}...\}$

   b. "Ann sings," or "Bill sings," or "Charles sings," ...

   $\{\{w: sing(ann)(w)\}, \{w: sing(bill)(w)\}, \{w: sing(charles)(w)\},...\}$

The set of propositions (i.e. possible answers) is defined as a propositional disjunction schema in (33a), which is equivalently expressible as the same set enumerating exactly the same atomic propositions in (33b).

   However, there is no close connection between the treatment of propositional disjunction and existential quantification of *wh-inka* because disjunction of *wh-*

indeterminates does not introduce sets of propositional alternatives. As shown in (34), the RVIs are variables that can be bound by existential closure and have a *wh*-indefinite reading:

(34) a. Nwukwu-**inka**   o-ass-ni?

      who-INKA-Nom   come-Past-Q

   'Did Someone (I don't know who it is) come in?'

      ~~'Who came in?'~~

   b.[[Did someone come in?]]^w = $\lambda p.[p = \lambda w'.\exists x[person(x)(w') \& came-in(x)(w')]]$

As shown in the denotation in (34b), *wh-inka* is a non-*wh*-item. The RVI *wh-inka* and *wh*-item therefore do *not* have the same source. Given this, the Hamblin semantics that relies on the generation of propositional alternatives seems to be an unattractive option.

      Here we suggest a different logical schema for *wh*-indeterminates and proceed with our analysis of *wh*-indeterminates going back to the classical treatment of indefinites as Heimian variables. By treating indeterminates as Kamp/Heim-style indefinites, bare *wh*-words are assumed to have a role similar to that of *as yet unbound logical variables* (à la Nishigauchi1990; Cheng and Huang 1996, a.o.). *Wh*-words do not have inherent quantificational force, but the particles are the binders, which determine the quantificational force of the *wh*-words. The case of classical indefinite interpretation of *wh-inka* can be schematized as follows:

(35)   Q[w,x] [. . . indefinite-D NP (x,w). . . VP]

Particles attached to *wh*-indeterminates are analyzed as quantificational determiners (Gill et al. 2004). As we have shown that each determiner is the place where the speaker's distinct epistemic state is reflected, we assume that the anti-specificity marker *inka* as an operator directly applies to the indeterminate and occupies the D position:[5]

(36)   DP
            /   \
         NP   D
          | |
       Nwukwu   *inka*
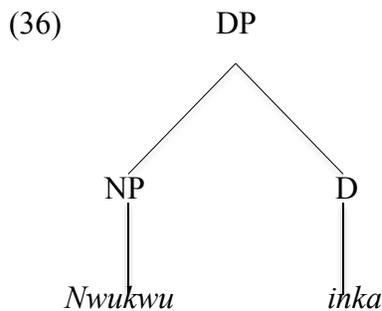
The wh-set undergoes operations on individual domain in accordance with the individual-based variation. Accordingly, by assuming *wh*-indeterminates equivalent to Heimian indefinites, we can explain easily why *wh*-indeterminates lack an interrogative meaning.

3.2 Path to grammaticalization of referentially vague indefinite: from question to indefinite

The fact that *wh-inka* is a DP is further supported by the fact that the *anti-specificity* marker *inka* is morphologically decomposed as the copular *i* 'be' and the modalized

---

[5] Note that we follow Gill et al. (2004: (31)) for the structure of DP in wh-indeterminates, in which the particle that combines with wh-indeterminate is treated as a determiner, heading the DP projection.

question marker *nka* 'Q'. It has been argued that *inka* went through grammaticalization and was reanalyzed as a single nominal particle (i.e. determiner) (Yoon 2005). In this subsection, we investigate the sources of the RVI *wh-inka,* and examine their development from Old Korean into Modern Korean, including their spread into new environments and the development of its ignorance component. We show that *wh-inka* has historically undergone a reanalysis from C (i.e., *wh*-question: *wh-i-nka* '*wh*-be-Q') to non-C elements (i.e., referentially vague indefinites: *wh-inka* '*wh*-INKA'). An understanding of these diachronic developments leads us to new insights into the formal synchronic analysis.

Until the end of the 19th century, *wh*-phrases such as *nwukwu* 'who' in Korean were used exclusively as interrogative pronouns and only in questions. What the data in Modern Korean suggest is that the distribution of *nwukwu*, for some reason, has been extended to non-interrogative contexts. This means that the properties of *wh*-words in Korean have changed over time from the exclusively interrogative pronouns to quantificational indefinite pronouns. The distribution of *wh*-phrases in Modern Korean has been extended to non-interrogative contexts (C-M Suh 1987; C-S Suh 1989; Kim 1992; Kim 2000, a.o.):

(37) a. *Wh-questions*

Ceycwu-nun **etumey** issnani-o?

Jeju.island-Top where be-Q

'Where is Jeju island?*'*   *Dwusienhay* 1481

b. *Embedded wh-questions*

Susua-ka	ku	congcek-i	**etey**	iss-nunci	al-ci
Susua-Nom	that	trace-Nom	where	be-Comp	know-Comp

moshan-ta.-haess-sini

don't.know-Comp-be.said

'Susua said he didn't know where the trace was.'   *Sengkyengcikhay* 1790-1800

c. *Indefinite with wh-words*

Mwunho-nun	**etey**-se	ton	o-won-ul	kwuha-ye...
Mwunho-Top	where-Loc	money	5-won-Acc	get-and...

'Mwunho got 5 won somewhere and...'   *Sonyenui piaya* 1917

To explain the extension, it can be assumed that Q-morphemes lost their syntactic status as interrogative C and underwent reanalysis to non-C elements with varying quantificational forces such as existential quantifier (Kim 2000). This change, in turn, would have had the consequence of allowing *wh*-phrases to appear in genuinely non-interrogative contexts. According to this hypothesis, the sequence of changes must have proceeded in the following order (Yoon 2005: (43)):[6]

---

[6] Syntactically it has been argued that Korean RVI *wh-inka* originated from a concessive clausal structure in which the interrogative word is an element in a question adjoined to the main clause (i.e. matrix adjoined wh-questions) (Yoon 2005: (14)):

(i) [e [$_{Question}$ e$_i$ nwukwu$_i$-i-nka]   mol-ato]]   [$_{Assertion}$ e$_i$ o-ass-ta]]
         who-is-C.interrogative don't know-C.concessive   come-Past-Decl
         'Though I don't know who he$_i$ is, he$_i$ came.'

(38) a. *wh*-QPs like *nwukwu-inka* lost their clausal identities.

b. *inka* was reanalyzed as the existential quantifier.

c. *wh*-words like *nwukwu* were reanalyzed as not exclusively interrogative.

d. *wh*-words like *nwukwu* came to be used as a bare indefinite pronoun.

The idea is that although Q-morphemes historically were all Cs, some of them lost their syntactic status as C and were reanalyzed as non-C elements with varying quantificational forces. Now they can be used in both interrogative and non-interrogative contexts: when they are associated with an interrogative C, they are interpreted as interrogative pronouns, while when they are associated with an existential quantificational *inka*, they have an existential pronoun reading.

This analysis of the LF causes a concomitant change in the semantics. With this background, we can further argue that the change of *wh*-words from interrogative to indefinite pronouns with quantificational variability can be naturally explained if the core reanalysis of *wh*-QPs like *nwukwu-inka* is from an interrogative C to an RVI-marker. *Wh-inka*, which had an interrogative C before the reanalysis, now has an existential quantificational force as an RVI. The reanalysis of *wh-inka* that triggered such change, we propose, is as follows:

The reanalysis of wh-QP like *nwukwu-inka* from an interrogative clause embedded in a concessive clause is derived into a simple non-clausal element and the consequent reanalysis of *wh-inka* from an interrogative C to an existential Q.

(39) *wh*-questions > RVIs

Semantic change of *nka*:

Stage	Conceptual schema	Function
Stage 1	X encodes a partition on the proposition	Question-marker
Stage 2	X encodes speaker's epistemic uncertainty on the reference	Anti-specificity marker

Table 2. Semantic shift of the anti-specificity marker *nka*

In the historical reanalysis process, the original properties of a construction before the reanalysis may continue to constrain the use of the reanalyzed forms (Hopper and Traugott 1993). This can account for why the indefinite *wh-inka* conveys the speaker's ignorance: the speaker's ignorance induced by the RVI *wh-inka* came from the *wh*-questions, which is based on the original properties of a construction prior to the reanalysis. Therefore, the reanalyzed RVIs headed by the particle *inka*, which is originally a question marker, are unnatural in a situation where the speaker knows the identity of referent.

One interesting result of the grammaticalization from question marker to anti-specificity marker is that the particle *inka* may give rise to anti-honorific attitude. When *inka* combines with proper nouns like *John* in (40), it conveys the additional inference that the speaker feels negatively toward John:

28

(40) a. Con-i   cenhwaha-(e)ss-ta.   [Korean]

        John-Nom   call-Past-Decl

        'lit. John called.'

     b. Con-**inka**-ka   cenhwaha-(e)ss-ta.

        John-INKA-Nom   call-Past-Decl

        'lit. John called.'

        (i) Negative attitude reading: 'I hold John in low regard.'

The anti-specificity marker *inka* adds an extra expressive dimension of meaning regarding the speaker's attitude towards John. We regard *inka* in this use as a manifestation of *anti-honorification* (Potts and Kawahara 2004). This anti-honorification of *inka* may have undergone the process of *subjectification* (Traugott 1982, 1986, 2007, 2010; Traugott and Dasher 2002). Subjectification is a type of meaning change in the process of grammaticalization where "meanings tend to come to refer less to objective situations and more to subjective ones (including speaker point of view), less to the described situation and more to the discourse situation" (Traugott 1986: 540). As Traugott notes, the change is unidirectional, and it tends to go "from propositional through textual to expressive" (Traugott 1982: 256), and "the reserve change, from expressive > textual > propositional, is highly unlikely in the history of any one grammatical marker" (Traugott 1989: 31). In this vein, we can assume that *inka* is selected to encode the subjectivity stance of the speaker. By employing the speaker's

epistemic ignorance marker, the speaker exhibits an uncaring disrespectful attitude, which must have triggered the development of anti-honorific function of *inka.*

4. *Wh-inka* as a referentially vague indefinite

In this section, we introduce a set of novel data and propose the core semantics of *wh-inka*, including the referential vagueness condition.

4.1 Non-identifiability

Referentially vague indefinites convey a form of indeterminacy. The speaker can use RVIs when she is in a state of epistemic indeterminacy on the accurate identity of the referent (refer back to section 3). *Wh-inka* is generally associated with the inference that the speaker is unable to identify the individual in question. The hearer is not allowed to ask for a specific value on the reference as below:

(41) A: Nwukwu-**inka**   cenhwaha-(e)ss-ta.

    who-INKA   call-Past-Decl

    'Someone has called.'

  B: #Nwukwu-i-ess-ni?

    who-be-Past-Q

    'Who was it?'

The speaker's ignorance induced by *wh-inka* is further supported by the following three identification methods—naming, ostension and description. As shown below, none of them seems to be compatible with *wh-inka*:

(42) *Naming*

Na-nun   kyoswu   nwukwu-**inka**-lul   manna-kosiph-ta.

I-Top   professor   who-INKA-Acc   meet-want-Decl

#kuuy   ilum-un   con-i-ta.

his   name-Top   John-be-Decl

'I want to meet some professor or other. #His name is John.'

(43) *Ostension*

Na-nun   kyoswu   nwukwu-**inka**-lul   manna-kosiph-ta.

I-Top   professor   who-INKA-Acc   meet-want-Decl

 #Kukes-un   ceki ce   namca-ta.

 it-Top   there that   guy-Decl

'I want to meet some professor or other. #It's that guy over there.'

(44) *Description*

Na-nun   kyoswu   nwukwu-**inka**-lul   manna-kosiph-ta.

I-Top   professor   who-INKA-Acc   meet-want-Decl

#ku-nun   pwulkun   meli-ta.

he-Top   red   haired-Decl

'I want to meet some professor or other. #He is red haired.'

The sentences from (42) to (44) exemplify the cases where *wh-inka* carries the uncertainty implication that the speaker does not have a particular (i.e. identifiable) referent in mind. The second sentences in each set of data introduce a specific value. When the speaker knows what the target value is, the use of the *wh-inka* becomes odd. This difference exactly parallels with what we find with *algún* in Spanish, *kápjos/kanenas* in Greek and *wh-rato* in Korean that we already mentioned in 2.3 (refer back to (16)-(18)).

Another set of empirical data supporting the account of referential vagueness comes from the interaction with intensional operators (GQ 2013). As shown below, a bare *wh*-item gives rise to either *de re* or *de dicto* interpretation as in (45) while *wh-inka* yields *de dicto* reading only as in (46):

(45) a. Mary-nun   uysa   nwukwu-hako   kyelhonha-ko sipehan-ta.

   Mary-Top   doctor who/someone-with   marry-Comp   want-Decl

  b. de re: [∃x in w_0 WANT (marry (x at w_0))]

  c. de dicto: [WANT [∃w∃x doctor(x,w) ∧ marry (x at w)]]

(46) a. Mary-nun   uysa   nwukwu-**inka**-hako   kyelhonha-ko sipehan-ta.

   Mary -Top   doctor who/someone-INKA-with   marry-Comp   want-Decl

  b. de dicto: [WANT [∃w∃x doctor(x,w) ∧ marry (x at w)]]

32

Given the discussion so far, we propose that the RVI *wh-inka* has the core properties of referential vagueness, as follows:

(47) Properties of the RVI *wh-inka*:

    a. *Wh-inka* is indefinite;

    b. *Wh-inka* takes narrow scope with respect to intensional/modal operators;

    c. *Wh-inka* signals the speaker's indeterminacy concerning the identity of the mentioned referent.

The speaker does not have a particular referent in mind, which reflects the epistemic judgment of uncertainty: it requires that the speaker be in a state of uncertainty on the value of the indefinite. The notion of non-fixed value constraint is subject to anti-specificity, which is sensitive to the knowledge of the speaker. In terms of Ionin's account of the scope fact and the speaker's epistemic constraints, the *wh-inka* is the total opposite of *this$_{ref}$*. It therefore leads us to conclude that *wh-inka* is the *dual* of the referential *this*-indefinite.

4.2 Epistemic uncertainty in the presuppositional content

In this subsection, we show that the RVI *wh-inka* has the truth-conditional content of an indefinite description and the source of the ignorance meaning is its presuppositional content. Generally, the presupposition holes such as negation project all the presuppositions of the lower clauses (Karttunen 1973). In embedded contexts the

implication of ignorance as to the identity of the referent of the *wh-inka* description projects through negation like a presupposition. As shown below, (48) conveys the same uncertainty reading that its non-negated counterpart does in (49). (48) does not allow for a wide scope reading of negation over the existential quantification on the speaker's epistemic alternatives, which would give rise to the truth-conditional content expressing speaker's uncertainty as to whether what John is cooking contains onions.

(48) Con-i   yoliha-nun   mwues-**inka**-ey-nun   yangpha-ka   **an**

  John-Nom   cook-Rel   what-INKA-Loc-Top   onion-Nom   Neg

  tulekan-ta.

  contain-Pres-Decl

  'Something John cooks (I don't know what it is) does not contain onions.'

  NOT: Something John cooks may not contain onions.

(49) Con-i   yoliha-nun mwues-**inka**-ey-nun yangpha-ka   tulekan-ta.

  John-Nom   cook-Rel   what-INKA-Loc-Top onion-Nom   contain-Pres-Decl

  'Something John cooks (I don't know what it is) contain onions.'

If we assume that *wh-inka* has a truth-conditional meaning and functions as existential quantification over epistemic alternatives, it cannot account for why *wh-inka* is reserved for the ignorance implication in the presence of other operations such as negation. In embedded contexts the implication of ignorance as to the identity of the referent of the *wh-inka* description projects like a presupposition, but the epistemic certainty is not part

34

of the truth-conditional content. The RVIs do not assert that the speaker does not know what the referent is (Giannakiodu and Quer 2013; Giannakidou and Yoon 2016).

The descriptive content of the *wh-inka* is contextually restricted implicitly. For instance, in (50), there is a contextually given domain of soup.

Context: John and Jack are Mary's roommates. Today when Mary and Jack enter the kitchen, Mary finds some soup that John cooked in the refrigerator. In the refrigerator, there are broccoli and green peas which John seems to have used for the soup. The color of the soup is green. Jack asks Mary what John cooked. Mary can felicitously say:

(50) Con-un   pulokholi   suphu-na   wantwukhong suphu

       John-Top   broccoli   soup-or   green.pea   soup

       chelem-poi-nun   mwues-inka-lul   yoliha-ss-ta.

       like-seem-Rel   what-INKA   cook-Past-Decl

       'John cooked something (I don't know what it is) which seems to be broccoli

       soup or green pea soup.'

       'Something John cooked (I don't know what it is) may be broccoli soup or green

       pea soup.'

The RVI *wh-inka* here is interpreted with respect to a set of alternatives in the world of evaluation, and denotes a set of epistemic individuals, i.e. broccoli soup and green pea

soup. Across the set of epistemic alternatives in *wh-inka*, there can be a different individual who qualifies as soup in each world, as illustrated below:

(51) $[[\text{what-inka}]]^{(w0)} = \{\text{soup}\} = \{\text{broccoli soup, green pea soup}\}$

W1 → broccoli soup

W2 → green pea soup

The use of *wh-inka* is felicitous if it has no specific referent across the set of worlds compatible with the speaker's belief in the actual world. There are at least two worlds where the entity satisfies the description. The presuppositional contents impose a variation condition on the identity of the referent of the *wh-inka*'s description. A variation condition requires that the referent of the description corresponding to the *wh-inka* phrase should vary across possibilities in the speaker's epistemic state.

4.3 Referential vagueness of *wh-inka*

Given the discussion so far, we propose that the referential vagueness of *wh-inka* can be defined as follows:

(52) **RVI *wh-inka***:

A sentence of the form $\lambda w.[[VP(\alpha)]]^{c,w}$ where α is a singular indefinite containing *inka*, expresses a proposition only on those utterance context c where the following conditions are fulfilled:

a. **Non-identifiability**:

$\lambda w.[[VP(\alpha)]]^{c,w}$ is defined for a given context c, iff the speaker s of c is unable to identify a referentially vague variable of α

b. **Referential vagueness**

$\exists w1,w2 \in W: [[\alpha]]^{w1} \neq [[\alpha]]^{w2}$;

$[[\text{wh-inka came}]]$ will be defined in c, only if: $\exists w1,w2 \in W: [[\alpha]]^{w1} \neq [[\alpha]]^{w2}$;

where α is the referentially vague variable;

if defined, $[[\text{wh-inka came}]]$ is true if there is at least one assignment g that verifies the condition *someone (x) & came (x)*.

By using RVI *wh-inka*, the speaker intends to refer to a vague individual in the world of utterance. It is available because the speaker believes there is more than one value and the *wh-inka* receives distinct values in the contextual domain. This definition imposes a weaker demand on the context in which there are simply at least two alternative worlds where the RVI *wh-inka* receives distinct values. This is equivalent to the sentences with a plain indefinite—but we still need to capture the referential vagueness effect of existential-like quantification. This effect is a presupposition of non-exhaustive variation that the RVI, but not the regular indefinite, gives rise to. These individual alternatives are determined by the denotation of the wh-words within the set of worlds compatible with the speaker's belief in the world of evaluation, which is equivalent to the speaker's epistemic state. Building on Giannakidou (2009), we model an individual's epistemic state as a set of doxastic alternatives, called a belief model, i.e. a function that gives a set

of possible worlds compatible with what *x*, the bearer of the attitude, believes in the actual world:

(53)   Belief model of an individual (Giannakidou 1999: (45))

Let c = <cg(c), W(c), M, s, h, w0, f,…> be a context.

A model $M_B(x) \in M$ is a set of world associated with an individual x representing world compatible with what x believes.

(54)   a. John won the race.

b. [John won the race] = 1 iff

$\forall w[w \in M_B(s) \rightarrow w \in \lambda w'.$John wins the race in $w']$

If the RVI *nwukwu-inka* 'someone (I don't know who it is)' is assigned a non-fixed value, i.e. in the narrow scope with respect to the attitude, we may have different visitors in each world:

(55)   No particular individual in mind = no fixed value in $M_B(s)$:

w1 → John, w2 → Bill, w3 → Charles ...

The worlds w1, w2 are epistemic alternatives of the speaker: $\exists w1, w2 \in$ M(speaker), where M(speaker) is the speaker's belief state, the set of worlds compatible with what she believes/knows.

Via the individual anchor, the belief worlds are available as a parameter of evaluation. Variation is modeled as different values in at least two worlds.

4.4 Two types of RVIs in Korean: *wh-rato* vs. *wh-inka*

In this subsection, we discuss the properties of individual alternatives of *wh-inka* by comparing with polarity-sensitive RVIs. The anti-specificity constraint of referential vagueness of certain polarity items such as Greek *kanenas* and Korean *wh-rato* require non-exhaustive variation over type *e* alternatives which are *dependent variables* (Giannakidou and Yoon 2016). A dependent variable is a variable that is non-deictic and cannot introduce a discourse referent:

(56) Non-deictic dependent variable (Giannakidou 1998, 2011b)

A variable *v* is non-deictic iff *v* cannot be interpreted as a free variable, or (ii) it cannot introduce a discourse referent.

A dependent variable cannot obtain a value from the context. In the sense that they always appear to be narrow scope bound by world variable, the NPIs are ruled out in episodic contexts in the simple past tense because their contexts do not contain a *w* binder (Giannakidou and Yoon 2016: (42b)):

(57) Phathi-eyse   *{amwu/nwukwu}-**rato**   manna-ss-ta.

     party-at   person.NPI/who-even   meet-Past-Decl

'I met someone or other at the party.'

Rather, they should be licensed in contexts such as modals, generics, and imperatives, and the dependency is reflected in the *logical form* by designating the dependent variable as w_d. Here is the derivation for polarity NPI *wh-rato*; it contains a dependent variable of type *e*:

(58)   [[who-rato]] = person(x_d)

The dependent variable contains a morphosyntactic feature encoding the polarity dependency, i.e., the need for being bound by a nonveridical operator. In this sense, *wh-rato* does not assert existence. This can be demonstrated by the fact that *rato* can combine with the non-specific indeterminate *amwu* 'any(one)' which has open domain (Lee et al. 2000; Kim and Kaufmann 2007; Park 2009, inter alia). See the example below:

(59)   Phathi-eyse   amwu-**rato**   manna-la.

        party-at   person.NPI-even   meet-Past-Imp

        'Meet anyone at the party.'

In contrast, *wh-inka* is fine with episodicity. In the episodic context, the truth condition can be verified when there exists some object z that it was involved in the event. See the example below:

(60) Phathi-eyse   nwukwu-**inka**   manna-ss-ta.

    party-at   who-INKA   meet-Past-Decl

    'I met someone (I don't know who he is) at the party.'

Alternatives of *wh-inka* can have actual individuals which are existentially closed. That is the reason why *inka* is incompatible with *amwu* 'any(one)'*:*

(61)   *Phathi-eyse   amwu-**inka**   manna-la.

    party-at   person.NPI-INKA   meet-Past-Imp

    'intended: Meet anyone at the party.'

The contrast between *wh-rato* and *wh-inka* leads us to conclude that the epistemic alternatives of RVIs can have two different types, i.e. either intensionalized property of polarity-sensitive like *wh-rato* or being interpreted as an extensional individual of non-polarity items like *wh-inka*. There might be various other differences between the two types of RVIs, *wh-rato* and *wh-inka*, but the difference with respect to episodicity suffices for our purposes.

    In what follows, we discuss the crucial difference between FCI *wh-na* vs. RVI *wh-inka*. It will be shown that the RVI *wh-inka* requires non-exhaustive variation, as opposed to exhaustive variation which is the hallmark of FCIs. The indefinite nature of

marked *wh-inka*, we argue, is not due to the absence of a definiteness requirement, but due to the presence of an indefiniteness constraint.

5. RVI *wh-inka* vs. FCI *wh-na*: (non)exhaustive variation

In this section, we compare RVIs with FCIs. We show how the two types of anti-specific indefinites differ with respect to domain exhaustification.

5.1 Necessity modals

Here we show how FCIs and RVIs bring about their distinct properties regarding (non-)exhaustive variation in imperatives and universal modals. The free choice effect is stronger than referential vagueness in the sense that FCIs exhaust all values in the given domain while RVIs do not. Here we compare Korean data with Giannakidou and Quer's (2013) example in Greek and Spanish RVIs to show that the effect is strikingly parallel, which supports our assumption that Korean *wh-inka* is equivalent to RVIs in these languages.

First, let's observe deontic universal modals where the FCIs are infelicitous:

Context: The family is in a dire financial situation and Mary must save the family's face by marrying a rich guy. Lawyers are rich guys, so she needs to marry some lawyer or other, a member of the set 'lawyer'.

(62) a. #I Maria prepi na pandrefti **opjondhipote** dhikighoro.　　　　　[Greek]

　　b. #Maria-nun　　pyenhosa　　**nwukwu-na**-hako　　kyelhonhay-yaha-n-ta.

Mary-Top	lawyer	who-or-with	marry-must-Pres-Decl

'lit. Maria must marry any lawyer.'   [Korean]

The presupposition imposes that there will be a value for FCI 'any lawyer' in each w we consider. The result is an undesirably strong statement because Maria cannot marry all the lawyers. In contrast, the use of the RVI in this context is felicitous:

Context: same as above.

(63) a. I Maria prepi na pandrefti **kapjon** dhikighoro.   [Greek]

b. Maria-nun   pyenhosa   **nwukwu-inka**-hako   kyelhonhay-yaha-n-ta.

Maria-Top   lawyer   who-INKA-with   marry-must-Pres-Decl

'Maria must marry some lawyer or other.'   [Korean]

The sentence becomes plausible in this case since Maria needs to marry some lawyer or other, a member of the set lawyer, without having to run all the values in the set.

Likewise, in epistemic necessity modals, we get a similar contrast:

Context: I am talking with John and I see that he is very informed about Mary's illness.

(64) a. (Tha) prepi na milise me {**kapjon/#opjondhipote**} giatro.   [Greek]

b. Ku-nun uysa   **nwukwu-{inka/#na}**-hako   iyakiha-nkey [Korean]

he-Top doctor   who-INKA-with   talk-Rel

pwunmyengha-ta.

must-Decl

'He must have talked with {some doctor or other/*any doctor}.'

The FCI *nwukwu-na* creates an excessively strong statement that forces John to have talked to every doctor in the hospital; in order to be informed about one's illness you do not have to talk with all doctors.

5.2 Imperatives (invitations and suggestions)

Second, let's consider invitations and suggestions. FCIs and RVIs influence these contexts in different ways:

Context: A variety of delicious desserts are presented at the buffet in front of Maria. But she does not show much of an appetite. A says:

(65) *FCIs:*

    a. Fae **opjodhipote** ghiliko!   [Greek]

    b. Prueba **cualquier** dulce!   [Spanish]

    c. Kwaca mwues-**ina**   tusey-yo.   [Korean]

       cookie what-NA   eat-Imp

       'Eat all of these cookies!'

(66) *RVIs:*

    a. Fae **kanena** ghiliko/**kanena** ap'afta ta ghiliko   [Greek]

    b. Prueba **algún** dulce/**alguno** de estos dulces!   [Spanish]

c. Kwaca mwues-**inka**-lul   tusey-yo.   [Korean]

   cookie what-INKA-Acc   eat-Imp

   'Eat some (or other) of these cookies!'

Note the different situation between the FCI vs. RVI-imperatives in (65) and (66). The contrast in interpretations, i.e. exhaustive and non-exhaustive variation induced by FCIs and RVIs, respectively, reveals that FCIs and RVIs show different behaviors with respect to domain exhaustification. With the FCI in (65) we have strong imperative to eat as many cookies as the addressee wants; we exhaust all available values in the domain of quantification, whereas with the RVI in (66), the imperatives are gentle invitations to eat some sweet or other. In uttering the sentence, the speaker is not inviting the addressee to consider *all* sweets; she is only inviting the addressee to consider some and try. In this sense, RVIs do not exhaustify the domain. What they require is only partial variation in their domain.

5.3 Universal quantifiers

Finally, differences between FCIs and RVIs are also shown in the context of universal quantifiers and generics (Park 2009). For example, the exhaustive variation of FCI *wh-na* in Korean is manifested by the maximality marker *ta* 'all' in which case the FCI has a reading on a par with the definite plural reading:

(67)   a. Nwukwu-**na**   **ta**,   sihem-ey   thongkwaha-(e)ss-ta.

           who-NA   all   test-in   pass-Past-Decl

           'Everyone/all the people, no matter who they are, passed the test.'

        b. John-un   nwukwu-**na**   **ta**   macwuchi-ess-ta.

           John-TOP   who-NA   all   run.into-Past-Decl

           'John ran into anyone/everyone.'

Such domain exhaustification, however, is too strong for the RVI *wh-inka*, hence the co-occurrence with *ta* 'all' is infelicitous:

(68)   a. #Nwukwu-**inka**   **ta**,   sihem-ey   thongkwaha-(e)ss-ta.

             who-INKA   all   test-in   pass-Past-Decl

             Intended: 'Everyone/all the people, no matter who they are, passed the test.'

        b. #John-un   nwukwu-**inka**   **ta**   macwuchi-ess-ta.

             John-Top   who-INKA   all   run.into-Past-Decl

             Intended: 'John ran into anyone/everyone.'

Furthermore, FCI *wh-na* is available in typical FCI contexts such as generics. In (69), the FCI *enu-koyangi-na* 'lit. which-cat-or' conveys a universal-like reading such as 'every cat':

(69) **Enu**-koyangi-**na**   cwi-lul   sanyangha-n-ta.

    which-cat-or   mouse-Acc   hunt-Pres-Decl

    'Any cat/every cat hunts mice; it doesn't matter which one.'

Once again, unlike FCI, the non-exhaustive variation of *wh-inka* makes it infelicitous in generic contexts:

(70) #**Enu**-koyangi-**inka**   cwi-lul   sanyangha-n-ta.

    which-cat-INKA   mouse-Acc   hunt-Pres-Decl

    Intended: 'Any cat/every cat hunts mice; it doesn't matter which one.'

5.4 Path to grammaticalization of anti-specific indefinites

We close our discussion with two sets of historical reanalysis of *wh-inka* and *wh-na*, and show that an understanding of these diachronic developments leads to new insights into the formal synchronic analysis. Specifically, based on the previous literature, we show that *na* and *inka* have different development processes: *inka* develops from a question marker to a postpositional particl—from C (i.e., *wh*-questions) to non-C elements (i.e., RVIs), whereas *na* develops from a postpositional particle to a question marker.

The following are formalizations of the use of *inka* and *na* which exhibit variations in their current uses, each of which appears to be unrelated to the others. Morphologically, they are used either as sentence-ending question markers or as nominal particles. Consider the examples below:

(71) *na*:

a. *na* forms questions (68a);

b. *na* forms anti-specific *wh*-indefinites, FCIs (68b)

(72) *na*:

a. Con-i   o-ass-**na**?

John-Nom   come-Past-Q

'(I wonder) whether John came.'

b. Nwukwu-**na**   o-lswuiss-ta.

who-or   come-can-Decl

'Anybody can come.'

(73) *(i)nka*:

a. *(i)nka* forms questions (70a);

b. *(i)nka* forms anti-specific *wh*-indefinites, RVIs (70b)

(74) *(i)nka*:

a. Na-nun chencay-i-**nka**?

I-Top   genius-Q

'(I wonder) whether I am a genius.'

b. Nwukwu-**inka**(-ka)   o-ass-ta.

who-INKA-Nom   come-Past-Decl

'Somebody (I don't know) came.'

The fundamental assumption that the previous approaches share seems to be that in languages which mark the different kinds of disjunctive, free choiceness and referential vagueness, there is a morpho-syntactic and semantic correlation from a grammaticalization perspective. We investigate the sources of the Korean Q-particles *na* and *inka*, and examine their development from Old Korean into Modern Korean, including their spread into new environments and the development of the ignorance component associated with FCI *wh-na* and RVI *wh-inka*.

The grammaticalization of Korean FCIs seems to have followed the *usual way*. According to Koo and Rhee (2013a,b), the grammaticalization path of *-na* in Korean has been from the nominal particle to the interrogative particle:

(75) Diachronic development of (*i)na* (Koo and Rhee 2013a,b):

N-*i-na* [N-copular-clausal connective *na*] > N-*ina* [nominal particle] (enumerative) > sentence-final particle (morphologic interrogative)

(76) Clausal Connective (Koo and Rhee 2013a: (3))

pilok   simhi   kong-ul   sAlanghA-**na** kulena kong-ul

though   very.much   master-Acc   love-Conn   but   master-Acc

kAlAchi-otAy

discipline-Conn

'Though the Master's (Junghen) mother loved him very much, [but] she disciplined him (rather than spoiling him when he was young in such a way that...) (1475, *Nayhwun* 3:15a)

(77) Postpositional Particle (Nominal Disjunctive) (Koo and Rhee 2013a: (7))

pam-**ina** nac-**ina**　　honca anc-asye　　ha　wul-ko

night-Prt day-Prt　　　　alone sit-and　　much weep-and

'(I) sit alone and weep a lot day and night.'　　(15xx, *Swunchenkimssienkan* 73:15)

(78) Sentence-Final Particle (Koo and Rhee 2013a: (11))

mwusun　　　　　il-i　　　　sayngki-ess-**na**?　　(molukeyss/kwungkumha-ta)

what.kind　　　　matter-Nom　occur-Past-Q　　(I.don't.know, I.wonder...)

'(I don't know/I'm wondering) what happened.'　　(Present Day Korean)

As shown above, the first use of *na* started from adversative forms. The use of the clausal connective *-na* is attested in the oldest extant poems in Old Korean. In Middle Korean *-na* was used in the form of *-i-na*, i.e. preceded by the copula *-i*. But this clausal connective was reanalyzed as a nominal postposition. The main function of the nominal disjunctive connective *-na* (and *-ina*) was to enumerate options.

The paradigm of Korean question markers further supports this bidirectional change. Although the paradigm of question markers has undergone much change, some forms have persistently withstood this change and preserved the main forms. The question marker *nka* is the representative form, as shown in table below:

Late middle Korean (15-16C.)	Early modern Korean (17-19C.)	Modern Korean (20-21C.)
-nya, -nye, -nyo, -lye, -lyo, -lya, -nta, -lta, -i, -niska, -liska, -ningiska, -ningisko, -lingiska, -lingisko, -nka, -nko, -lka, -lko, -ni, -li, -nisko, -lisko	*-nya, -nyo, -lya, -lyo, -lio, -lsonya, -nta, -lta, -ni, -li, -niiska, -niisko, -liiska, -liisko, -nka, -nko, -lka, -lko, -lsonka*	*-nya, -ni, -supnikka, -suptikka, **-na**, **-nka**, -lkka, -e, -ci, -uo, -so*

Table 3: Korean Interrogative markers in History (Rhee 2012: table 1)

In the table, unlike *nka*, the *-na* question marker started to appear from around 20C. Thus far, we have observed that the RVI *wh-inka* and the FCI *wh-na* exhibit a contrast with regard to the direction of historical change: *wh-inka* has developed from a question marker to an anti-specific marker, whereas *wh-na* has developed from an anti-specificity marker to a question marker.

It is also worth noting that most of the crosslinguistic 'or' indefinites (e.g. Russian, Hungarian, Portugues, Basque, Latvian, Romanian, West Greenlandic (Haspelmath1997), Hausa (Zimmermann 2009)) are primarily FCIs. Haspelmath notes that the grammaticalization from indefinites to interrogatives is considered a general path. Given this generalization, however, it is surprising to observe that the grammaticalization path of the RVI *wh-inka* seems to be in the reverse direction, i.e. from interrogative to indefinites. An important point that we make here is: contrary to Haspelmath's generalization, the grammaticalization of *wh-inka* shows that the change can be *bidirectional*.

6. Conclusion

In this paper, we proposed an analysis of *wh-inka* as a novel marker of referential vagueness. We showed that the proliferation of marked anti-specific indefinites (i.e., FCI *wh-na* vs. RVI *wh-inka* vs. RVI/NPI *wh-rato*) is not redundant, but each marker has its own role since there are fine-grained distinctions depending on the constraints governing their value assignment. Although they uniformly impose a non-fixed value constraint, the crucial difference between FCIs and RVIs lies in the fact that the constraint for referential vagueness exhibits a weaker form of indeterminacy. It requires individual alternatives as well, but with *non-exhaustive alternative variations*. On the other hand, RVI *wh-inka* is not sensitive to nonveridicality, as opposed to the NPI/RVI *wh-rato*. The indefinite nature of marked *wh-inka* is not due to the absence of a definiteness requirement, but due to the presence of the *referential vagueness constraint.*

In this sense, we proposed that *wh-inka* forms a *dual* of referential indefinite *this*$_{ref}$ in English. Based on a diachronic analysis, we further showed that *inka* is a reanalyzed form of the question marker *nka*. This immediately leads to the prediction that *inka* and *nka* are distinct lexical items, distributing in different clause types. Given that historical transitions from indefinite to wh-meaning have been documented, the opposite path illustrated with Korean *inka* and *na* indefinites that we find is significant since it suggests that the change is *bidirectional*. Furthermore, our finding that synchronically Korean *wh-inka* and *wh-na* are anti-specificity markers is meaningful in that it challenges the routinely claimed *propositional approach* to wh-indeterminates. Although the propositional approach may have advantage in describing the historical paths of

indefinites, it is not applicable for the synchronic analysis of the Korean wh-indeterminates discussed in this paper.

Acknowledgements. To follow.

References

Aloni, Maria. 2011. Modal inferences with marked indefinites. Handout of a talk presented at the Dept. of Linguistics, University of Chicago.

Aloni, Maria, and Angelika Port. 2014. Epistemic indefinites and methods of identifications. In Luis Alonso Ovalle and Paula Menendez-Benito (eds.), *Epistemic Indefinites.* Oxford University Press.

Alonso-Ovalle, L., 2006. Disjunction in alternative semantics. Ph.D. Dissertation, Umass.

Alonso-Ovalle, Luis and Paula Menéndez-Benito. 2003. Some epistemic indefinites. *Proceedings of the 33rd North East Linguistic Society*, ed. by Makoto Kadowaki and Shigeto Kawahara, University of Massachusetts, Amherst: GLSA, pp. 1-12.

Alonso-Ovalle, Luis and Paula Menéndez-Benito. 2008. Minimal domain widening. *Proceedings of the 27th West Coast Conference on Formal Linguistics*, ed. by Natasha Abner and Jason Bishop, Cascadilla Proceedings Project, Somerville, MA, pp. 36-44.

Alonso-Ovalle, Luis and Paula Menéndez-Benito. 2010. Modal indefinites. *Natural Language Semantics*, 18(1):1-31.

Alonso-Ovalle, Luis and Paula Menéndez-Benito. 2011. Domain restrictions, modal

implicatures and plurality: Spanish algunos. *Journal of Semantics*, 28(2): 211-240.

Alonso-Ovalle, Luis and Paula Menéndez-Benito. 2013. Two views on epistemic indefinites. *Language and linguistics compass,* 7(2): 105-122.

Alonso-Ovalle, Luis and Junko Shimoyama. 2014. Expressing ignorance in the nominal domain: Japanese *wh-ka*. *Proceedings of West Coast Conference on Formal Linguistics* 31.

AnderBois, S., 2011. Issues and alternatives. Ph.D. Dissertation, University of California Santa Cruz.

AnderBois, S. 2012. Focus and uninformativity in Yucatec Maya questions. *Natural Language Semantics* 20.349–390.

Brasoveanu, A. and Donka F. 2010. Dependent Indefinites within a Typology of Specificity.   Handout of a talk presented at the workshop on Specificity from theoretical and empirical   points of view, University of Stuttgart, August 31-September 2, 2010

Borer, H. 2005. In name only. Oxford: Oxford University Press.

Cheng, Lisa L.-S. 1997. *On the typology of wh-questions*. Garland Publishing, Inc., New York and London.

Cheng, Lisa L.-S. and Huang, C.T.J., 1996. Two types of donkey sentences. *Natural Language Semantics* 4.2: 121-163.

Chierchia, Gennaro and Hsiu-Chen Daphne Liao. forthcoming. Where do chinese *wh* items fit? *Epistemic indefinites*, ed. by Luis Alonso-Ovalle and Paula Mene ́ndez Benito. Oxford: Oxford University Press.

Choi, Jinyoung. 2007. *Free choice and negative polarity. a compositional analysis of Korean polarity sensitive items*. Ph.D. dissertation. UPenn.

Choi, Yoon-Ji. 2011. Correlation between disjunction and modality: focused on *inka* (written in Korean). *Journal of Korean linguistics*, 60:146-181.

Dayal, Veneeta. 1997. Free relatives and *ever*: *identity* and *free choice* readings. *Proceedings of*

SALT VII, 99-116.

Ebert, Christian, Cornelia Ebert and Stefan Hinterwimmer. 2012. The interpretation of the German specificity markers *bestimmt* and *gewiss*. *Different kinds of specificity across languages*, ed. by Cornelia Ebert and Stephan Hinterwimmer, 31–74. Dordrecht: Springer.

Endriss, Cornelia. 2009. Quantificational Topics. A scopal treatment of exceptional wide scope phenomena. Ph.D. dissertation. Humboldt University, Berlin.

Fălăus, Anamaria. 2009. *Polarity items and dependent indefinites in Romanian*. Ph.D. dissertation. Université de Nantes.

Fălăus, Anamaria. 2011. Alternatives as sources of semantic dependency. In *Proceedings of SALT*, volume 20, pp. 406-427.

Farkas, Donka F., 2002a. Extreme non-specificity in Romanian. In: Beyssade, C., et al. (Eds.), *Romance Languages and Linguistic Theory*. John Benjamins,

Amsterdam/Philadelphia, 127-151.

Farkas, Donka F., 2002b. Specificity distinctions. *Journal of Semantics* 19, 1--31.

Farkas, Donka F., 2006. Free choice in Romanian. In: Birner, Betty, J., Ward, Gregory, (Eds.), *Neo-Gricean studies in pragmatics and semantics in honor of Laurence R. Horn*. John Benjamins, Amsterdam.

Fodor, J. D. and Ivan A Sag. 1982. Referential and quantificational indefinites. *Linguistics and philosophy*, 5(3):355-398.

Giannakidou, Anastasia. 1995. Subjunctive, habituality and negative polarity items. In *Proceedings of SALT*, volume 5: 94-111.

Giannakidou, Anastasia.1998. *Polarity sensitivity as (non) veridical dependency*, volume 23. John Benjamins.

Giannakidou, Anastasia. 1999. Affective dependencies. *Linguistics and Philosophy* 22: 367-421.

Giannakidou, Anastasia. 2001. The meaning of free choice. *Linguistics and philosophy*, 24(6): 659–735.

Giannakidou, Anastasia. 2009. The dependency of the subjunctive revisited: temporal semantics and polarity. *Lingua* 120.1883-1908.

Giannakidou, Anastasia. 2011a. Greek quantifiers. *Handbook of Quantifiers in Natural Language*. Dordrecht: Springer.

Giannakidou, Anastasia. 2011b. Negative polarity and positive polarity: licensing, variation, and compostionality. In von Heusinger, Maienborn, and Portner (ed.),

The Handbook of Natural Language Meaning (second edition). Berlin: Mouton de Gruyte.

Giannakidou, Anastasia and, Lisa L.-S. Cheng. 2006. (in)definiteness, polarity, and the role of wh-morphology in free choice. *Journal of semantics*, 23(2):135–183.

Giannakidou, Anastasia. and Josep Quer. 2013. Exhaustive and non-exhaustive variation with free choice and referential vagueness: Evidence from Greek, Catalan, and Spanish. *Lingua*, (126): 120-149.

Giannakidou, Anastasia and Suwon Yoon. 2016. Scalar marking without scalar meaning: non-scalar, non-emphatic EVEN-marked NPIs in Greek and Korean. *Language*. (To appear)

Gill, Kook-Hee, Steve Harlow and George Tsoulas. 2004. Connectives, Indeterminates, and Quantificational Variability", In Bonami, O. and Hofherr, P. C. (eds.) *Empirical Issues in Syntax and Semantics 5*. pp. 75-88 CNR, Paris-7.

Ha, Seungwan. 2004. The existential reading of wh-words and their scope relations. In *Proceedings from the Annual Meeting of the Chicago Linguistic Society*, volume 40, pp. 83-95. Chicago Linguistic Society.

Haspelmath, Martin. 1997. *Indefinite pronouns*. Oxford University Press.

Heim, Iren. 1991. Articels and definiteness, published in German as 'Artikel und Definitheit', A. V. Stechow and D. Wunderlich (eds.), *Semantics: An International Handbook of Contemporary Research*, pp. 4870535. De Gruyter, Berlin.

von Heusinger, K. 2000. The reference of indefinites. In *Reference and anaphoric*

relations, ed. by K. von Heusinger and U. Egli, 247-265. Dordrecht: Kluwer.

von Heusinger, Klaus. 2011. Specificity, referentiality and discourse prominence: German indefinite demonstratives. In *Proceedings of Sinn & Bedeutung*, volume 15: 9-30.

Hopper, P. J., and E. C. Traugott 1993. *Grammaticalization*. Cambridge: Cambridge University Press.

Huang, C.-T. James. 1982. Move wh in a language wighout wh movement. *The Linguistic Review* 1. 369-416.

Ionin, Tania. 2006. This is definitely specific: specificity and definiteness in article systems. *Natural language semantics*, 14(2):175-234.

Ionin, Tania. 2013. Pragmatic variation among specificity markers. In *Different kinds of specificity across languages*, 75-103. Springer.

Jayez, Jacques and Lucia Tovena. 2002. Determiners and (un)certainty. In *Proceedings of SALT XII* Brendan Jackson (ed.) Ithaca, NY, CLC Publications.

Jayez, Jacques and Lucia Tovena. 2006. Epistemic determiners. *Journal of Semantics*, 23(3):217-250.

Kagan, Olga and Ilona Spector. 2008. Alternative semantics for the Hebrew determiner *eyze*. In *Proceedings of the 21st west coast conference in formal lingusitics*, pp. 247-255.

Kaneko, Makoto. 2011. DP external epistemic 'determiner's in Japanese. *Empirical issues in syntax and semantics* 8:239-66.

Kang, Arum. 2015. *(In)definiteness, disjunction and anti-specificity in Korean: A study in the semantics-pragmatics interface*. Ph.D. dissertation. University of Chicago.

Kang, Arum. To appear. A novel wh-indeterminate in Korean: *wh-inka* as a marker of referential vagueness. *Japanese/Korean Linguistics*, vol. 23. ed. by Michael Kenstowicz, Ted Levin and Ryo Masuda. Stanford: CSLI Publications.

Karttunen, Lauri. 1973. Presuppositions of compound sentences. *Linguistic Inquiry*, 4:167-93.

Kim, Ae-Ryung. 2000. *A Derivational Quantification of "WH-Phrase"*. Ph.D. dissertation. Indiana University.

Kim, C.-H. 1992. A study on interrogative and indefinite pronouns in Korean (written in Korean). Ph.D. dissertation. Hanyang University.

Kim, Min-joo and Stefan Kaufmann. 2007. Domain restriction in freedom of choice: A view from Korean indet-na items. In *Proceedings of Sinn und Bedeutung*, 375-389.

Koo, Hyun Jung and Seongha Rhee. 2013a. On the Emergence of the Speaker's Tepidity Stance and Discourse Politeness. In talk presented at the 12th International Cognitive Linguistics Conference (ICLC-12), The University of Alberta, Edmonton June 23-28.

Koo, Hyun Jung and Seongha Rhee. 2013b. On an emerging paradigm of sentence-final particles of discontent: a grammaticalization perspective. *Language Sciences*, 37:70-89.

Kratzer, Angelika. 2005. Indefinites and the operators they depend on: From Japanese to

Salish. In: Carlson, G.N., Pelletier, F.J. (Eds.), *Reference and Quantification: The Partee Effect*. CSLI Publications, Stanford, 113--142.

Kratzer, Angelika and Junko Shimoyama. (2002). *Indeterminate pronouns: The view from Japanese*. In 3rd Tokyo conference on psycholinguistics.

Kuroda, Sige-Yuki. 1965. *Generative grammatical studies in the Japanese language*. PhD dissertation, Massachusetts Institute of Technology.

Lee, Chungmin. 1999. Types of NP is and nonveridicality. Technical report, *UCLA Working Papers in Linguistics* 3 Syntax at Sunset.

Lee, Chungmin. 2003. Negative polarity items and free choice in Korean and Japanese: A contrastive study. *Icwung enehak*, 22.

Lee, Chungmin, Daeho Chung and Seungho Nam. 2000. The semantics of *amwu-n-to/-irato/-ina* in Korean arbitrary choice and concession. *Language and Information*, 4(2):107-123.

Lee, Jung-Hyuck. 2010. Nonverical dependency of Korean particle *-ilato* and Japanese *-demo*. *Japanese/Korean Linguistics* 17: 231-245.

Lim, Dongsik. 2015. On the distribution and the semantics of the Korean focus particle *-lato*, In Chungmin Lee, Ferenc Kiefer, and Manfred Krifka (eds.), *Contrastiveness and Scalar Implicatures*. Springer.

Maclaran, Rose. 1982. *The semantics and pragmatics of the English demonstratives*. University Microfilms

Martin, Fabienne. 2013. Specificity markers and nominal exclamatives in french. In *Different kinds of specificity across languages*, pp. 11-30. Springer.

Nishigauchi, Taisuke. 1990. *Quantification in the theory of grammar*. Dordrecht: Kluwer Academic Publishers.

Park, Eun-Hae. 2009. *Wh-indeterminates, free choice, and expressive content in Korean*. Ph.D. dissertation. University of Chicago.

Potts, Christopher and Shigeto Kawahara. 2004. Japanese honorifics as emotive definite descriptions. In *Proceedings of SALT*, volume 14, pp. 253-270.

Prince, Ellen. 1981a. On the inferencing of indefinite-this NPs. *Elements of discourse understanding*, pp. 231-250.

Rhee, S. 2012. Stance-taking and sentence types in Korean. Paper presented at the First Int'l Conference of Homo Sensus: Perception, Emotion and Semiosis, Hankuk Univ. of Foreign Studies, Seoul, June 8-9, 2012 Conference Handbook, 53-70.

Shimoyama, Junko. 2001. *Wh-constructions in Japanese*. PhD dissertation, UMass.

Shimoyama, Junko. 2006. Indeterminate phrase quantification in Japanese. *Natural Language Semantics*, 14(2):139-173.

Slade, Benjamin M., 2011. *Formal and philological inquiries into the nature of interrogatives, indefinites, disjunction, and focus in Sinhala and other languages*. Ph.D. Dissertation, University of Illinois.

Sudo, Yasutada. 2010. *Wh-ka* pronouns in Japanese and the semantics of indeterminate pronouns. In Talk presented at the Workshop on Epistemic Indefinites, University of Göttingen and Lichtenberg-Kolleg, pp. 10-12.

Suh, C.-M. 1987. *Study of Questions in Korean* (in Korean). Seoul: Tap Publishing, Co.

Suh, Cheong-Soo. 1989. Interrogatives and indefinite words in Korean: with reference to Japanese. In *Harvard studies in Korean linguistics 3*, ed. by S. Kuno et al., 329–340. Cambridge, Mass.: Harvard University, Department of Linguistics.

Traugott, Elizabeth C., 1982, From propositional to textual and expressive meanings: Some semantic- pragmatic aspects of grammaticalization. In Winfred P. Lehmann and Yakov Malkiel (eds.), *Perspectives on Historical Linguistics,* 245–271. Amsterdam/Philadelphia: Benjamin

Traugott, Elizabeth C., 1986. From polysemy to internal semantic reconstruction. In proceeding of *Berkerly Linguistic Society* 12, 539–550.

Traugott, Elizabeth C., 2007. (Inter)subjectification and unidirectionality. *Journal of Historical Pragmatics* 8 (2), 295–309.

Traugott, Elizabeth C., 2010. (Inter)subjectivity and (inter)subjectification: a reassessment. In: Davidse, K., Vandelanotte, L., Cuyckens, H. (Eds.), *Subjectification, Intersubjectification and Grammaticalization*. De Gruyter Mouton, Berlin, pp. 29–71.

Traugott, Elizabeth Closs and Richard B. Dasher. 2002. Regularity in Semantic Change. *Cambridge Studies in Linguistics 96*. Cambridge: Cambridge University Press.

Yanovich, Igor. 2005. Choice-functional series of indefinite pronouns and hamblin semantics. In *Proceedings of SALT*, volume 15, pp. 309-326.

Yoon, Jeong-Me. 2005. Two historical changes in wh-constructions in Korean and their implications. *Studies in Generative Grammar*, 15:457-487.

Yun, Suyeon. 2011. *The semantics of wh-indefinite constructions in Korean*. Ms. MIT.

Yun, Jiwon. 2013. *Wh-indefinites: meaning and prosody*. Ph.D. dissertation. Cornell University.

Zabbal, Youri. 2004. A compositional semantics of the French expression *n'importe.*Ms. University of Massachusetts Amherst.

Zamparelli, Roberto. 2007. On singular existential quantifiers in Italian. *Existence: semantics and syntax*, eds by Ileana Comorovski and Klaus von Heusinger, 293–328. Dordrecht: Springer.

Zimmermann, Malte. 2009. Variation in the expression of universal quantification and free choice: the case of Hausa *koo-wh* expressions. *Linguistic Variation Yearbook 2008,* 179–232. Amsterdam & Philadelphia: John Benjamins.