

# On the meaning of *wh*-(N)-*ina* and *wh*-(N)-*itun* in Korean

Abstract: This paper provides a compositional semantics of *wh*-expressions followed by the particles *-ina* and *-itun*. Although those expressions have often been considered as semantically identical in the literature, a closer scrutiny reveals that *wh*-(N)-*ina* is essentially a universal quantifier, whereas *wh*-(N)-*itun* is a free choice item. I propose that the two constructions are derived from the same structure, i.e., *alternative conditionals*, but the different derivational processes yield their different quantificational forces. Specifically, *wh*-(N)-*itun* is synchronically an alternative conditional with ellipsis, *wh*-(N)-*ina* has become a distributive universal operator via reanalysis.

## 1 Introduction

It has been noticed that *wh*-expressions in Korean can be used as universal quantifiers when they combine with certain particles such as *-ina* and *-itun* (C-S Suh 1990, D Chung 1996, Y Lee 1999, J-M Yoon 2004, J Choi 2007, among others). The following examples illustrate that both *wh*-(N)-*ina* and *wh*-(N)-*itun* have a universal reading.

- (1) *Nwukwu-na/tun*<sup>1</sup> *ku mwuncey-lul phwu-l swu iss-ta*<sup>2</sup>.  
who-INA/ITUN that problem-ACC solve-can-DECL<sup>3</sup>  
'Everyone can solve that problem.'
- (2) *Yuna-nun nwukwu-eykey-na/tun chincelha-ta*.  
Yuna-TOP who-DAT-INA/ITUN kind-DECL  
'Yuna is kind to everyone.'

Although *wh*-(N)-*ina* and *wh*-(N)-*itun* have been analyzed as having the same interpretation in the literature (D Chung 1996, J-M Yoon 2004, among others), a closer scrutiny reveals that they are not always interchangeable. Rather, the universal interpretation is restricted to certain contexts such as possibility modal contexts (1) or generic contexts (2), which are well known to allow the universal interpretation of free choice items as the English sentences *Anyone can solve that problem* and *Yuna is kind to anyone* also have universal-like readings.

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<sup>1</sup> The vowel *i* in the particles *-ina* and *-itun* drops after another vowel.

<sup>2</sup> For notational ease, I will ignore the internal structure of complex predicates. Therefore, for example, *-l swu iss-*, *-ya ha-*, and *-ul kesi-* are simply glossed as 'can,' 'must,' 'will,' respectively.

<sup>3</sup> The list of abbreviations used in this paper is as follows:

NOM: nominative	ACC: accusative	DAT: dative
TOP: topic	PL: plural	CL: classifier
HON: honorific	PRES: present tense	PAST: past tense
DECL: declarative	Q: interrogative	IMP: imperative
REL: relativizer	ADV: adverbializer	

In other contexts, however, *wh*-(N)-*ina* and *wh*-(N)-*itun* have different readings: the following data in (3) through (7) suggest that *wh*-(N)-*ina* is a universal, whereas *wh*-(N)-*itun* is a free choice item.

i) Distribution in necessity modal contexts

In necessity modal contexts, *wh*-(N)-*ina* is interpreted as a universal, while *wh*-(N)-*itun* is ambiguous between a universal and a free choice reading.

- (3) a. *Nwukwu-na w-aya ha-n-ta.*  
 who-INA come-must-PRES-DECL  
 ‘Everyone must come.’  
 b. *Nwukwu-tun w-aya ha-n-ta.*  
 who-ITUN come-must-PRES-DECL  
 ‘(i) Everyone must come.  
 (ii) Someone must come; it does not matter who it is.’

ii) Distribution in episodic contexts

The construction *wh*-(N)-*itun* exhibits degraded acceptability in episodic contexts, compared to *wh*-(N)-*ina*.

- (4) a. *Nwukwu-na onul hakhoy-ey w-ass-ta.*  
 who-INA today conference-DAT come-PAST-DECL  
 b. ?*Nwukwu-tun onul hakhoy-ey w-ass-ta.*<sup>4</sup>  
 who-ITUN today conference-DAT come-PAST-DECL  
 ‘Everyone came to the conference today.’

iii) Modification by floating quantifiers

*Wh*-(N)-*itun* can be restricted by a floating quantifier, while *wh*-(N)-*ina* cannot.

- (5) a. *\*Mwues-ina hana kolu-kela.*  
 what-INA one choose-IMP  
 (lit. ‘\*Choose every one item.’)  
 b. *Mwues-itun hana kolu-kela.*  
 what-ITUN one choose-IMP  
 ‘Choose any one item.’
- (6) a. *\*Nwukwu-na sey myeng-i cwuk-umyen*  
 who-INA 3 CL-NOM out-if  
*kyengki-nun kkuthna-n-ta.*  
 game-TOP over-PRES-DECL  
 (lit. ‘\*If every three players are out, the game is over.’)

<sup>4</sup> The question mark indicates an individual variation in judgment. However, it seems obvious that the degree of acceptability of (4b) is lower than (4a) for most speakers.

- b. *Nwukwu-tun sey myeng-i cwuk-umyen*  
 who-itun 3 CL-NOM out-if  
*kyengki-nun kkuthna-n-ta.*  
 game-TOP over-PRES-DECL  
 ‘If any three players are out, the game is over.’

iv) Restriction with *wh*-degree expressions

The particle *-itun* can be combined with certain *wh*-expressions such as *myech N* ‘how many N’ to mean ‘any number of’, whereas *-ina* cannot.

- (7) a. \**Myech myeng-ina i cha-ey tha-l swu iss-ta.*  
 how.many CL-INA this car-DAT ride-can-DECL  
 (lit. ‘\*Every number of people can ride in this car.’)  
 b. *Myech myeng-itun i cha-ey tha-l swu iss-ta.*  
 how.many CL-ITUN this car-DAT ride-can-DECL  
 ‘Any number of people can ride in this car.’

The only difference between the paired sentences in the above examples is the choice between the particle *-ina* and *-itun*. This leads us to conclude that the different meanings of the particles *-ina* and *-itun* are responsible for the difference between *wh*-(N)-*ina* and *wh*-(N)-*itun*. Thus this paper aims to provide an analysis of the semantics of the particles *-ina* and *-itun*, and to show the meaning of *wh*-(N)-*ina/itun* is derived compositionally.

In addition, an appropriate analysis should also be able to capture the difference between *wh*-(N)-*ina* and ordinary universal quantifiers such as *motwu* ‘all’. A characteristic property of *wh*-(N)-*ina* is that it is inherently distributive. Thus, as pointed out in Y Lee (1999), collective predicates such as *moi-* ‘gather’ cannot co-occur with *wh*-(N)-*ina*:

- (8) a. *Haksayng-tul-i motwu kangtang-ey moy-ess-ta.*  
 student-PL-NOM all auditorium-DAT gather-PAST-DECL  
 b. \**Haksayng-tul-i nwukwu-na kangtang-ey moy-ess-ta.*  
 student-PL-NOM who-INA auditorium-DAT gather-PAST-DECL  
 ‘Students all gathered in the auditorium.’

The distributivity of *wh*-(N)-*ina* is also attested by the association with floating quantifiers: while the sentence with the genuine universal quantifier *motwu* ‘all’ (9a) is ambiguous between a distributive reading (‘Each person will eat three pieces of rice cake.’) and a collective reading (‘There are three pieces of rice cake and everyone will share them.’), the sentence with *wh*-(N)-*ina* (9b) only receives a distributive interpretation.

- (9) a. *Motwu-ka ttek sey cokak-ul mek-ess-ta.*  
 all-NOM rice.cake 3 piece-ACC eat-past-DECL

'Everyone will eat three pieces of rice cake.' (distributive or collective)

b. *Nwukwu-na ttek sey cokak-ul mek-ess-ta.*  
who-INA rice.cake 3 piece-ACC eat-will-DECL

'Everyone will eat three pieces of rice cake.' (only distributive)

The structure of the paper is as follows. Section 2 reviews and criticizes previous analyses on *wh*-(N)-*ina* and *wh*-(N)-*itun*. Section 3 introduces the notion of 'alternative conditional' and its compositional semantics. Section 4 shows how we can explain the semantics of *wh*-(N)-*ina* and *wh*-(N)-*itun* in terms of alternative conditionals. Section 5 discusses the remaining questions and concludes the paper.

## 2 Previous Analyses

### 2.1 Embedded Question Analysis

Since the construction *wh*-(N)-*ina/itun* involves *wh*-items in its form that can be interpreted as an interrogative in other contexts, one might think that its meaning is related to the semantics of questions. Indeed, C-S Suh (1990) and D Chung (1996) argue that *wh-ina/itun*(*ci*)<sup>5</sup> should be analyzed as embedded questions. Paying attention to the similarity in form between the embedded question markers *-na* and *-ci* in (10) and the particles *-ina* and *-itunci* in (11), they decompose the particle *-ina/itunci* into the copular verb *i-* and a question ending *-na/ci*.

(10) *Na-nun John-i nwukwu-lul*  
I-NOM John-top who-ACC  
*salangha-na/salangha-nun-ci kwungkumha-ta.*  
love-Q/love-PRES-Q curious-DECL  
'I am curious who John loves.'

(11) *John-un mwues-i-na/tunci mek-nun-ta.*  
John-top what-be-Q eat-PRES-DECL  
'John eats anything.'

(example, gloss, and translation from D Chung 1996: 217 (15b))

In this Embedded Question Analysis, sentences with *wh*-(N)-*ina/itun* have an adverbial clause that takes as argument the indirect question that is brought out by *wh*-(N)-*ina/itun*. More specifically, D Chung (1996) provides the following underlying structure (12) for the sentence in (11), postulating a covert predicate 'regardless of' or 'no matter', which licenses the question complement clause.

(12) *John-un* [CP<sub>1</sub> [CP<sub>2</sub> e<sub>i</sub> *mwues-i-na/tun*] (*sangkwaneps-i*)] e<sub>i</sub> *mek-nun-ta.*

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<sup>5</sup> *-itunci* is another form of *-itun*.

John-top                      what-be-Q              QPred-ADV              eat-PRES-DECL  
 ‘John eats anything<sub>i</sub>, regardless of what it<sub>i</sub> is.’

Though the Embedded Question Analysis has the advantage of explaining the role of *wh*-morphology in *wh*-(N)-*ina/itun*, it fails to capture the difference between *wh*-(N)-*ina* and *wh*-(N)-*itun* that we have seen in the previous section. A more crucial problem is its basic assumption that the part *-na* and *-tun(ci)* in the particles *-ina/itun(ci)* indicate question markers. First, *-na* is not a question ending that the copula *i-* can co-occur with.

(13) \**Na-nun kukes-i mwues-i-na kwungkumha-ta.*  
 I-top    it-NOM    what-be-Q    curious-DECL  
 (intended meaning: ‘I am curious what it is.’)

Second, although *-ci* is indeed used to mark a question, it does not automatically follow that *-tunci* is also a question marker. The form *-tunci* cannot make a question, as shown in the following example:

(14) \**Na-nun John-i nwukwu-lul salangha-tunci an-ta.*  
 I-NOM    John-top    who-ACC    love-Q              know-DECL  
 (intended meaning: ‘I know who John loves.’)

Furthermore, the segments *-ci* can be omitted from *-tunci*, which undermines the argument that *-tunci* is a question marker because it shares the same form with the attested question marker *-ci*. Thus, I conclude that *-ina/itun* are not embedded question markers.

## 2.2 Concessive Construction Analysis

It is well known that when a *wh*-expression is followed by the concessive particle *-to* ‘even,’ it behaves like a negative polarity item (NPI) ‘any.’

(15) *Nwukwu-to onul hakhoy-ey an w-ass-ta.*  
 who-even    today    conference-DAT    not come-PAST-DECL  
 ‘No one came to the conference today.’

The rationale behind the Concessive Construction Analysis is that the semantics of *wh*-(N)-*ina* can be analyzed in the same way as the NPI *wh*-(N)-*to*. C Lee (2003) argues that a *wh*-item indicates the most arbitrary or general member in a certain domain that the *wh*-expression introduces, and a ‘concessive particle’ *-to* or *-ina* is attached to convey an NPI in negative contexts or a universal-like reading in positive contexts, respectively, since if even the most arbitrary member of the set has a certain property, then it is expected that every member in the set would have the same property. J-M Yoon (2004) also adopts this

line of analysis and argues that both *wh*-(N)-*ina* and *wh*-(N)-*itun* receive a universal-like reading by the same mechanism.

However, their basic assumption that *-ina* is a concessive marker like *-to* is questionable: unlike the concessive particle *-to* in (16) which is interpreted as ‘even’ when attached to a non-*wh*-item, *-ina* is interpreted as ‘only’ rather than ‘even’ in such contexts, as shown in (17).

(16) *Chencay-to ku mwuncey-lul phwu-l swu eps-ta.*  
genius-even that problem-ACC solve-cannot-DECL  
‘Even a genius cannot solve that problem.’

(17) #*Papo-na ku mwuncey-lul phwu-l swu iss-ta.*  
idiot-INA that problem-ACC solve-can-DECL  
‘(intended meaning) Even an idiot can solve that problem.’  
‘(actual meaning) #Only an idiot can solve that problem.’

Furthermore, *-itun* cannot combine with a single non-*wh*-item at all. As we will see later, it can only combine with either a *wh*-item or a list of alternative items, and the result of such combination does not involve a concessive meaning. Since neither *-ina* nor *-itun* has concessive interpretation on its own, an analysis in terms of concession cannot provide an adequate account for the meaning of *wh*-(N)-*ina/itun*.

### 2.3 Free Relative Analysis

Due to the apparent similarities in the forms and meanings between *wh*-(N)-*ina/itun* and free relatives (FR) such as *whatever* in English, one might think that the same semantics can apply to both constructions. Indeed, J Choi (2007) adopts the basic template of the semantics of FRs in Dayal (1997) and von Stechow (2000) to explain the meaning of *wh*-(N)-*ina*.

Dayal (1997) and von Stechow (2000) suggest that *wh-ever* is essentially a definite description and that its quasi-universal force is due to quantification over epistemic alternatives. First of all, there are cases in which FRs are interpreted as definite expressions, as illustrated in the following example.

(18) *Zack simply voted for whoever was at the top of the ballot.*  
(von Stechow 2000:(18))

Dayal (1997) argues that even when they have a free choice reading, FRs still retain the characteristic of definite expressions. For instance, the only reading of (19) is that for each book in the series, Mary has read two thirds of it, while (19) and (19) are ambiguous because they have an additional reading that Mary has read two thirds of the total number of the books in the series. Since the FR exhibits a similar pattern with the definite

expression but not with the regular universal quantifier, FRs should be definites rather than universals.

- (19) a. *Mary has read two thirds of every book in the series.*  
 b. *Mary has read two thirds of whatever books are in the series.*  
 c. *Mary has read two thirds of the books in the series.*  
 (Dayal 1997: (18))

In order to explain the quantificational force of FRs, von Stechow (2000) claims that a *whatever*-FR implies that in all possible worlds that differ only in the identity of the FR referent, the truth of sentence is still the same. Thus, he analyzes the sentence (18) as having a definite assertion and a presupposition involving universal quantification over possible worlds:

- (20) a. Assertion: In  $w_0$ , Zack votes for the person at the top of the ballot in  $w_0$ .  
 b. Presupposition: In all worlds  $w'$  minimally different from  $w_0$  in which someone different is at the top of the ballot, Zack votes for that person iff in  $w_0$  he votes for the person at the top of the ballot in  $w_0$ .

The immediate problem with applying the same analysis to *wh*-(N)-*ina* is that it is never interpreted as definite. For example, the translation of (18) with *wh*-(N)-*ina* yields a pragmatically awkward sentence (21), since its assertion is rather universal, not definite.

- (21) #*Zack-un thwuphyo yongci mayn wi-ey iss-nun*  
 Zack-top ballot most above-DAT exist-REL  
*nwukwu-na ccik-ess-ta.*  
 who-INA vote-PAST-DECL  
 ‘#Zack simply voted for everyone who was at the top of the ballot.’

Furthermore, if we replace *whatever book* in (19) with *etten chayk-ina* ‘what book-INA’ as in (22), the sentence only has the first reading that for each book Mary has read two thirds of it. This suggests that *wh*-(N)-*ina* does not behave like a definite.

- (22) *Mary-nun i silicu-eyse etten chayk-ina*  
 Mary-top this series-DAT what book-INA  
*sam pwun-uy i-lul ilk-ess-ta.*  
 three part-of two-ACC read-PAST-DECL  
 ‘Mary has read two thirds of every book in the series.’

J Choi (2007) recognizes this problem and claims that *wh*-(N)-*ina* involves an indefinite expression in its assertion instead of a definite one. According to her analysis, the basic quantificational force of *wh*-(N)-*ina* is existential, while its universal quantificational force is derived by a generic operator. For example, she provides the sentence (23) as an

example of the existential *wh*-(N)-*ina* and the sentence (24) as an example of the universal *wh*-(N)-*ina*. The universal reading of the latter comes from the generic operator that is introduced because *nwukwu-na* is in the topic position, as shown in (25).

(23) *John-un etten chayk-ina ilk-eya ha-n-ta.*  
 John-top what-kind-of book-INA read-must-PRES-DECL  
 ‘John must read a book, every kind book is a possible reading option for John.’  
 (the example and translation are from Choi 2007: 218 (4))

(24) *Nwukwu-na pelkum-ul nay-ya ha-n-ta.*  
 who-INA fine-ACC pay-must-PRES-DECL  
 ‘Everyone must pay the fine, regardless of who they are.’  
 (the example and translation are from Choi 2007: 219 (6b))

(25) [<sub>IP</sub> Gen [<sub>IP</sub> *nwukwu-na*<sub>i</sub> [<sub>IP</sub> *must* [<sub>TP</sub> *t<sub>i</sub>* *pay the fine* ]]]]

However, this analysis fails to provide a descriptively adequate account for *wh*-(N)-*ina*, since it is always interpreted as a universal, never as an existential. In fact, the quantification involved in the sentence in (23) should be universal, as it cannot be associated with a floating quantifier such as *han kwen* (‘one’ + classifier for books), while an ordinary indefinite can.

(26) a. \**John-un etten chayk-ina*  
 John-top what-kind-of book-INA  
*han kwen ilk-eya ha-n-ta.*  
 one CL read-must-PRES-DECL  
 (lit. ‘John must read every one book.’)  
 b. *John-un chayk-ul han kwen ilk-eya ha-n-ta.*  
 John-top book-ACC one CL read-must-PRES-DECL  
 ‘John must read one book.’

Thus, it seems hard to apply the semantic analysis of the free relative *wh-ever* (N) to *wh*-(N)-*ina/itun*. However, the idea that those two constructions share similarities is still tenable. More specifically, I argue that it is the conditional-like usage of *wh-ever* (N) that is similar with *wh*-(N)-*ina/itun*. The next section will explore this idea in detail.



### 3 Alternative Conditionals

#### 3.1 Alternative Conditionals and Disjunction

The main argument of this paper is that both of the constructions *wh*-(N)-*ina* and *wh*-(N)-*itun* originate from what I call alternative conditionals. The following sentence is an example of alternative conditionals in English.

(27) *Whether you drink beer or wine, you (still) get fat.* (Gawron 2001: (3b))<sup>6</sup>

Like ordinary conditionals, an alternative conditional consists of two parts, namely, the antecedent and the consequent. The distinctive property of the alternative conditional is that it actually contains two or more alternative conditions in the antecedent. An alternative conditional is true if and only if the proposition indicated by the main clause is true for any of the conditions in the antecedent. For instance, the above example (27) contains two conditions, i.e., ‘you drink beer’ and ‘you drink wine,’ and it implies that you will get fat, given any of these conditions. In other words, we can infer from (27) that both of the following sentences are true.

(28) a. *If you drink beer, you will get fat.*  
b. *If you drink wine, you will get fat.*

Thus, the assertion of an alternative conditional is formally represented as follows<sup>7</sup>:

(29)  $[[\textit{whether } p_1 \textit{ or } p_2, q]] = (p_1 \rightarrow q) \wedge (p_2 \rightarrow q)$

Note that the above representation of alternative conditionals involves conjunction, despite the apparent disjunctive expression *or*. To resolve the mismatch between the linguistic expression and its semantic representation, one might analyze alternative conditionals simply as conditionals with a disjunctive antecedent. Then the conjunctive interpretation can be explained by the logical properties of material implication shown in (30), which indicates that a conditional with a disjunctive antecedent is logically equivalent to a conjunction of two conditionals.

$$\begin{aligned} & (p_1 \vee p_2) \supset q \\ (30) \quad & \equiv \neg(p_1 \vee p_2) \vee q \\ & \equiv (\neg p_1 \wedge \neg p_2) \vee q \\ & \equiv (\neg p_1 \vee q) \wedge (\neg p_2 \vee q) \\ & \equiv (p_1 \supset q) \wedge (p_2 \supset q) \end{aligned}$$

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<sup>6</sup> Gawron (2001) calls this type of construction an ‘alternative question,’ but ‘conditional’ seems a more adequate term than ‘question’ to reflect its semantic and syntactic properties.

<sup>7</sup> For ease of reference, the arrow sign  $\rightarrow$  is used as a general symbol to indicate conditionals in natural languages.

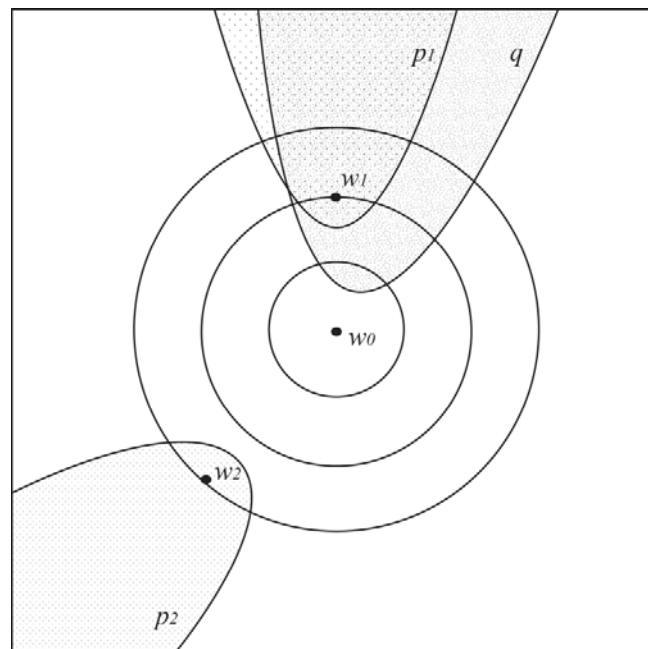
This seems intuitively correct in most cases, as we can also infer both of the sentences in (28) from the conditional sentence with a disjunctive antecedent: *If you drink beer or wine, you will get fat.*

The problem of this analysis is that conditional sentences in natural languages are not always analyzable as having the same truth conditions of material implication. Especially, a derivation like (30) does not hold for the well-known possible world semantics of counterfactuals (Lewis 1973, Stalnaker 1968). In fact, it has been noticed in the literature that the Lewis-Stalnaker system lacks Simplification of Disjunctive Antecedents (SDA), which blocks the derivation such as (30).

(31) Simplification of Disjunctive Antecedents (SDA) (Nute 1975)

$$((p_1 \vee p_2) > q) \supset (p_1 > q)^8$$

In the Lewis-Stalnaker system, a counterfactual is analyzed as true if and only if the consequent is true at every world where the antecedent is true that is as close as possible to the actual world. To see how this analysis of counterfactuals allows counterexamples to SDA, suppose that we have a counterfactual  $(p_1 \vee p_2) > q$  and we know that  $p_1 > q$  is true, while  $p_2 > q$  is false, and that  $p_1$  seems more plausible than  $p_2$  from the viewpoint of the actual world. This situation can be illustrated with spheres of accessibility around the actual world (Lewis 1973) as in Figure 1:



<sup>8</sup> I will use 'A > B' for counterfactuals with the form 'if it were the case that A, it would be the case that B', following the notation in Stalnaker (1968).

Figure 1. Spheres of accessibility

In this diagram, both  $p_1$  and  $p_2$  are false at  $w_0$ , thus the antecedent  $p_1 \vee p_2$  is false at the actual world. The closest worlds to  $w_0$  in which the antecedent  $p_1 \vee p_2$  is true are located somewhere around  $w_1$ . Since  $q$  is true at  $w_1$ , the conditional  $(p_1 \vee p_2) > q$  is true. Obviously,  $p_1 > q$  is also true in this situation. However,  $p_2 > q$  is false, since  $q$  is false at the closest worlds to  $w_0$  where  $p_2$  is true, which would be around  $w_2$ . This shows that there can be a situation where the antecedent of the formula **Error! Reference source not found.** is true, while its consequent is false, which makes SDA untenable.

It is noticeable at this moment that proponents of SDA have criticized the Lewis-Stalnaker system for its discrepancy with natural language. For instance, Nute (1975) points out that the apparent counterexample to SDA as in Figure 1 actually does not hold in natural languages, as shown below:

(32) #*If we had had good weather this summer or the sun had grown cold before the end of summer, we would have had a bumper crop.*

The above sentence gives an example of the situation shown in Figure 1, where the first disjunct in the antecedent *we have good weather* is closer to the state of affairs in the actual world than the second disjunct *the sun grows cold*. Since we would not expect to have a bumper crop if the sun grew cold, the sentence (32) does not make sense intuitively. Contrary to intuition, however, the Lewis-Stalnaker system predicts that the sentence is true. If we add SDA to the system and analyze the sentence (32) as a conjunction of two conditionals *If we had had good weather this summer, we would have had a bumper crop* and *If the sun had grown cold before the end of summer, we would have had a bumper crop*, the system gives the intuitively correct answer that the sentence is false because its second conjunct is false. For this reason, Nute (1975) argues that the system of counterfactuals should include SDA.

However, SDA does not always seem to be valid. McKay and van Inwagen (1977) points out that SDA allows an implausible inference as follows:

(33) a. *If Spain had fought on the Allied side or the Nazi side, it would have fought on the Nazi side.*  
b. #*Thus, if Spain had fought on the Allied side, it would have fought on the Nazi side.*

Though the first sentence in (33) is a felicitous counterfactual that can be made by someone who knows that Spain did not enter the war, the next sentence inferred by SDA does not seem to make sense. Such a counterexample to SDA has led some researchers to conclude that SDA is not a semantic condition but rather a pragmatic one and that the basic interpretation of disjunctive antecedents of conditionals is still disjunctive (cf. Loewer 1976, Warmbrod 1981).

On the other hand, alternative conditionals are always interpreted as conjunctive, whether they are counterfactual or not. In fact, examples like (33) are not possible for alternative conditionals from the first.

(34) #*Whether Spain had fought on the Allied side or the Nazi side, it would have fought on the Nazi side.*

Note that disjunction takes scope inside the antecedent of the conditional in (33), as the antecedent of (33) can be paraphrased as (35), while such paraphrasing is impossible for alternative conditionals as illustrated in (36).

(35) *If Spain had fought on either side, ...*

(36) \**Whether Spain had fought on either side, ...*

Thus, the discussion so far suggests that while *if*  $p_1$  or  $p_2$ ,  $q$  basically involves disjunction in its representation, *whether*  $p_1$  or  $p_2$ ,  $q$  does not, despite the apparent disjunctive expression *or*. The following example also suggests that alternative conditionals do not have a disjunctive antecedent.

(37) a. A: *John came here and there was trouble.*

b. B: #*Well, if John or Bill had come, there would have been trouble.*

c. B': *Well, whether John or Bill had come, there would have been trouble.*

As the name of the construction suggests, counterfactuals carry a presupposition that the antecedent is false at the actual world. After the utterance of A, B accepts the proposition 'John came' as true, which in turn makes the proposition 'John or Bill came' true in B's mind. Thus a counterfactual such as B in (37) cannot be made because the antecedent is true. However, an alternative conditional can be constructed with the seemingly same antecedent as shown in B' in (37). If the antecedents of B and B' receive the same disjunctive interpretation, we cannot explain this difference. Then how can an alternative conditional like B' be interpreted as counterfactual? It seems that an alternative conditional is counterfactual if not all of the alternative conditions is true at the actual world. For instance, if one interprets B' as 'counterfactual,' the 'fact' in the real world is not the event indicated by the negation of the disjunctive proposition 'John or Bill came' (i.e., 'Neither John nor Bill came.') but the negation of its conjunctive counterpart (i.e., it is not the case that both 'John came.' and 'Bill came.' are true). This again suggests that an alternative conditional does not have a disjunctive antecedent.

Another distinctive property of alternative conditionals is that they carry a presupposition that at least one of the alternative conditions does actually realize. For example, the sentence *Whether you drink beer or wine, you still get fat* presupposes that you will drink something, either beer or wine. As shown below, such a presupposition is maintained under negation:

(38) *It is not the case that whether you drink beer or wine, you (still) get fat.*

The following summarizes the conclusion of this section:

(39) *whether  $p_1$  or  $p_2$ ,  $q$*

a. assertion:  $(p_1 \rightarrow q) \wedge (p_2 \rightarrow q)$

b. presupposition:  $p_1 \vee p_2$

### 3.2 Compositional Semantics for Alternative Conditionals

In the previous section we have seen that the antecedent of an alternative conditional is not interpreted as a disjunctive. This in turn suggests that the apparent disjunctive expression *or* in an alternative conditional form is not the ordinary logical disjunction. If it is not disjunction, what is it? To answer this question, let us take a look at another form of alternative conditionals in which the list of alternatives is given implicitly. For instance, compare the following two sentences which are closely related to each other:

(40) *Whether you drink beer or wine, you will get fat.*

(41) *Whatever you drink, you will get fat.*

If the set of things that you can drink in the given model is {beer, wine}, (41) has the same meaning as (40). The only difference between these two sentences is whether the set of alternative conditions is given explicitly in the sentence or implicitly in the context. Thus I assume that the phrase *whatever x* introduces a set of alternative entities in line with the treatment of *wh*-words in Hamblin (1973) and Rooth (1985). According to this line of theory, a *wh*-word denotes a set of alternative individuals, and a clause that contains *wh*-expressions indicates the set of propositions obtained by making substitutions in the position of those expressions. For example, the phrase *whatever* in (41) indicates the set of things you can drink given by the context, and the clause *whatever you drink* means the set of propositions derived by recursive substitution of the set of drinks in the position of *whatever*. If *whatever* indicates the set {beer, wine}, the set of alternative propositions will be {you drink beer, you drink wine}. This explains how the implicit alternative conditional in (41) has the same alternative conditions as the explicit one in (40).

Going back to explicit alternative conditionals, I propose that the seemingly disjunctive expression *or* in (40) also introduces a set of alternatives, rather than making a disjunctive proposition. In other words, there are two types of *or*: disjunctive and alternative. The disjunctive *or* functions as an ordinary disjunction operator, while the alternative *or* takes arguments and returns a set whose members are those arguments.

(42)  $[[or_{DIS}]] = \lambda p_1. \lambda p_2. [p_1 \vee p_2]$

(43)  $[[or_{ALT}]] = \lambda p_1. \lambda p_2. \{p_1, p_2\}$

The alternative *or* must be in the scope of *whether*, which I analyze as an operator that takes a set of alternative propositions and yields an assertion that for every member of the alternative set, if it is true then the consequent should also hold true:

$$(44) [[\textit{whether}]] = \lambda \bar{p} . \lambda q . \forall p_i [(p_i \in \bar{p}) \supset (p_i \rightarrow q)],$$

where  $\bar{p}$  is a set of propositions  $\{p_1, p_2, \dots, p_n\}$

(45) and (46) show how the meanings of sentences containing the disjunctive *or* and the alternative *or* are derived, respectively:

(45) disjunctive *or*

*John or Bill came.*

a.  $[[\textit{John or}_{\text{DIS}} \textit{Bill}]] = \lambda P . [P(j) \vee P(b)]$

b.  $[[\textit{John or}_{\text{DIS}} \textit{Bill came}]] = \textit{come}(j) \vee \textit{come}(b)$

(46) alternative *or*

*Whether John or Bill comes, Mary will be happy.*

a.  $[[\textit{John or}_{\text{ALT}} \textit{Bill}]] = \lambda P . \{P(j), P(b)\}$

b.  $[[\textit{John or}_{\text{ALT}} \textit{Bill comes}]] = \{\textit{come}(j), \textit{come}(b)\}$

c.  $[[\textit{whether John or}_{\text{ALT}} \textit{Bill comes}]] =$   
 $\lambda q . [( \textit{come}(j) \rightarrow q ) \wedge ( \textit{come}(b) \rightarrow q )]$

d.  $[[\textit{whether John or}_{\text{ALT}} \textit{Bill comes, Mary will be happy}]] =$   
 $( \textit{come}(j) \rightarrow \textit{happy}(m) ) \wedge ( \textit{come}(b) \rightarrow \textit{happy}(m) )$

The idea that the disjunctive *or* and the alternative *or* are different lexical items can be supported by languages that employ different morphology for those two. Chinese is such a language, which has two lexical items *huozhe* and *haishi* to represent the meaning of *or* in English. The following examples illustrate the typical usage of these two expressions: *huozhe* is used for ordinary disjunction in assertions as in (47), while *haishi* is for alternative questions as in (48) (Huang 1998). Note that if *huozhe* is used in a question, it is interpreted as a yes-no question rather than an alternative question, as seen in (49).

(47) (Huang 1998 pp194:(216))

*Zhangsan huozhe Lisi hui lai.*

Zhangsan or Lisi will come

‘Zhangsan or Lisi will come.’

(48) (Huang 1998 pp194:(220))

*Zhangsan haishi Lisi hui lai?*

Zhangsan or Lisi will come

‘Will Zhangsan or will Lisi come?’  
 (The speaker wonders whether Zhangsan or Lisi will come.)

- (49) *Zhangsan huozhe Lisi hui lai ma?*  
 Zhangsan or Lisi will come Q  
 ‘Will Zhangsan or will Lisi come?’  
 (The speaker wonders if it is true that Zhangsan or Lisi will come.)

When they are used in conditionals, *huozhe* makes ordinary disjunctive conditionals, while *haishi* makes alternative conditionals as in (50). Therefore, we can conclude that *huozhe* corresponds to the disjunctive *or*, whereas *haishi* corresponds to the alternative *or*.

- (50) a. *Yaoshi Zhangsan huozhe/\*haishi Lisi lai, Mali dou hui gaoxing.*  
 if Zhangsan or Lisi come, Mali all will happy  
 ‘If Zhangsan or Lisi comes, Mali will be happy.’  
 b. *Buguan Zhangsan \*huozhe/haishi Lisi lai, Mali dou hui gaoxing.*  
 no-matter Zhangsan or Lisi come, Mali all will happy  
 ‘Whether Zhangsan or Lisi comes, Mali will be happy.’

The semantics of implicit alternative conditionals is analyzed in a similar way. The phrase *whatever x* introduces an alternative set of entities, and the entire clause containing that phrase is interpreted as a set of propositions. However, the set of propositions is not the final interpretation of the clause; it is eventually interpreted as a conditional clause that contains all the propositions in the set. Thus I assume that an implicit alternative conditional has an empty operator that functions almost same as *whether*, which takes a set of alternative propositions to make an alternative conditional clause.

$$(51) [[ \text{OP} ]] = \lambda \bar{p}. \lambda q. \forall p_i [(p_i \in \bar{p}) \supset (p_i \rightarrow q)]$$

$$(52) [[ \text{OP } \textit{whatever } x P, q ]] = (P(x_1) \rightarrow q) \wedge (P(x_2) \rightarrow q) \wedge \dots \wedge (P(x_n) \rightarrow q),$$

where  $\{x_1, x_2, \dots, x_n\}$  is a set of individuals introduced by the expression *whatever x*

The following illustrates how the meaning of an implicit alternative conditional is derived:

- (53) *Whatever student comes, Mary will be happy.*  
 a.  $[[ \textit{whatever student} ]] = \{j, b\}$   
 b.  $[[ \textit{comes} ]] = \lambda x. [\textit{come}(x)]$   
 c.  $[[ \textit{whatever student comes} ]] =$   
 $\{\lambda x. [\textit{come}(x)](j), \lambda x. [\textit{come}(x)](b)\} = \{\textit{come}(j), \textit{come}(b)\}$   
 d.  $[[ \textit{OP whatever student comes} ]] =$

$$\lambda q. [(come(j) \rightarrow q) \wedge (come(b) \rightarrow q)]$$

e. [[ *OP whatever student comes, Mary will be happy* ]] =  
 [(*come(j) \rightarrow happy(m)*) \wedge (*come(b) \rightarrow happy(m)*)]

## 4 Alternative Conditional Approach to *wh*-(N)-*ina/itun*

### 4.1 alternative conditional markers *-na/tun*

Korean also has two kinds of alternative conditionals: i) explicit ones in which the alternative conditions are listed in the antecedent and ii) implicit ones where the alternative conditions are derived from the denotation of *wh*-expressions in the antecedent. The examples of explicit and implicit alternative conditionals are given in (54) and (55), respectively.

(54) *John-i o-na/tun Bill-i o-na/tun*  
 John-NOM come-ALT Bill-NOM come-ALT  
*Mary-nun kippeha-l kesi-ta.*  
 Mary-top happy-will-DECL  
 ‘Whether John comes or Bill comes, Mary will be happy.’

(55) *Nwuka o-na/tun Mary-nun kippeha-l kesi-ta.*  
 who.nom come-ALT Mary-top happy-will-DECL  
 ‘Whoever comes, Mary will be happy.’

The semantic representation of the alternative conditional marker *-na/tun* is given in (56). Note that while the alternative *or* in English can coordinate phrases of various syntactic categories including nominal phrases, *-na/tun* connects clauses only. Also, unlike ordinary coordinators which appear in between conjuncts, *-na/tun* occurs at the end of each conjunct. Thus I propose that *-na/tun* takes as argument a set of alternative propositions, and its repeated appearance after each clause in explicit alternative conditionals like (54) is due to a morphological epenthesis which is ignored in the semantic representation.

$$(56) [[ -na/tun ]] = \lambda \bar{p}. \lambda q. \forall p_i [(p_i \in \bar{p}) \supset (p_i \rightarrow q)],$$

where  $\bar{p}$  is a set of propositions  $\{p_1, p_2, \dots, p_n\}$

Notice that the alternative conditional markers *-na* and *-tun* are clearly similar in form with the particles *-ina* and *-itun* in the constructions of our interest *wh*-(N)-*ina/itun*. Furthermore, the notion of alternatives is also crucial in case of *wh*-(N)-*ina/itun* since *-ina/itun* should combine with a set of alternatives. The following examples show that *-ina/itun* must combine with *wh*-elements (57) or a list of alternative elements (58), but



cannot combine with a single non-*wh*-expression (59) even if it is a plural description (60).

(57) *Enu haksayng-ina/itun ttokttokhata.*  
which student-INA/ITUN smart  
'Every student is smart.'

(58) *John-ina/itun Bill-ina/itun ttokttokhata.*  
John-INA/ITUN Bill-INA/ITUN smart  
'Both John and Bill are smart.'

(59) \**John-ina/itun ttokttokhata.*  
John-INA/ITUN smart  
(Intended meaning: 'John is smart.')

(60) \**Haksayng-tul-ina/itun ttokttokhata.*  
student-PL-INA/ITUN smart  
(Intended meaning: 'All students are smart.')

Thus I propose that the *wh*-(N)-*ina/itun* constructions are derived from implicit alternative conditionals and that their universal-like interpretation comes from the conjunctive interpretation of alternative conditionals. The rest of the paper will discuss this proposal in detail.

#### 4.2 *-i* in *-ina/itun*: a copular verb?

Despite the striking similarities in form and meaning between the particle *-ina/itun* and the alternative conditional marker *-na/tun*, their syntactic properties are different in that the former is attached to a noun phrase to yield a syntactic argument, while the latter combines with verbs to yield a clause. One possible way to resolve the discrepancy is to postulate a clausal structure for *wh*-(N)-*ina/itun*, which is indeed one of the assumptions of the Embedded Question Analysis as we have seen earlier. According to D Chung (1996), the vowel *i* in the particles *-ina/itun* is analyzed as a copular verb 'be.' However, the following data suggest that only *-itun* can be analyzed this way, while *-ina* cannot.

i) *-itun* can be used in a predicate position and interpreted as 'be' + *tun*, while *-ina* cannot.

(61) a. \**Kukes-i mwues-ina, na-nun pantay-ta.*  
it-NOM what-INA I-top against-DECL  
b. *Kukes-i mwues-itun, na-nun pantay-ta.*  
it-NOM what-ITUN I-top against-DECL  
'Whatever it is, I am against it.'

ii) In Korean, the honorific morpheme *-si-* can be attached to a verb to show respect to the subject of the sentence. D Chung (1996) points out that *-si-* can be inserted between the vowel *i* and the following *-tun* in the construction of *wh-(N)-itun*, which supports the argument that the vowel *i* in *-itun* is actually a verb. However, *-si-* cannot be inserted between *i* and *na* in *wh-(N)-ina*.

- (62) a. *Etten pwun-i>(\*si)-na hwanyengha-pnita.*  
 what-kind-of person-be-HON-ALT welcome-DECL  
 b. *Etten pwun-i(si)-tun hwanyengha-pnita.*  
 what-kind-of person-be-HON-ALT welcome-DECL  
 ‘We welcome anyone.’

iii) The vowel *i* of *-ina* must drop after a vowel, while it optionally drops in *-itun* under the same environment as in (63). Note that the copular verb *i-* also optionally drops after a vowel as illustrated in (64).

- (63) a. *mwues-ina / nwukwu>(\*i)na / encey>(\*i)na*  
 what-INA / who-INA / when-INA  
 b. *mwues-itun / nwukwu(i)tun / encey(i)tun*  
 what-ITUN / who-ITUN / when-ITUN

- (64) *John-un sonyen-i-ta. / Mary-nun sonye(i)-ta.*  
 John-top boy-be-DECL / Mary-top girl-be-DECL  
 ‘John is a boy. / Mary is a girl.’

To summarize, the parallels between *i* in *-itun* and the copular verb *i-* support the idea that they are the same syntactic element. On the other hand, the vowel *i* in *-ina* cannot be a lexical element with a concrete meaning but simply functions to resolve a certain phonological restriction.

### 4.3 *wh-(N)-itun*: alternative conditional with ellipsis

Based on the observation in the previous subsection, I analyze the sentence with *wh-(N)-itun* as an alternative conditional in which the subject of the conditional clause and an argument of the consequent are co-indexed and both are phonologically empty. For instance, the sentence with *wh-(N)-itun* in (65) has the underlying structure in (66), where both the conditional clause and the main clause have the null subject with the same index.

- (65) *Enu haksayng-itun Mary-lul cohaha-n-ta.*  
 which student-ITUN Mary-ACC like-PRES-DECL  
 ‘Every student likes Mary.’

- (66) [ e<sub>i</sub> enu haksayng-i-tun ] [ e<sub>i</sub> Mary-lul cohaha-n-ta. ]

which student-be-TUN    Mary-ACC like-PRES-DECL

Note that sentences with omitted arguments are quite common in Korean. A lot of languages allow omission of certain elements that can be contextually understood, and Korean is well known to allow a wide range of omission in any argument position. In fact, the use of explicit pronouns is often considered as marked. Also, indefinites with relatively general property such as ‘a person/a man/a thing’ are often omitted. For instance, the sentence in (67) is easily interpreted as in (68), in which the indefinite subject of the conditional clause and the anaphoric pronoun in the consequent are phonologically empty. In fact, the same sentence with overt arguments in (69) sounds rather artificial and strained.

(67) *Tangnakwi-lul kaci-myen hayngpokha-ta.*  
 donkey-ACC    own-if    happy-DECL  
 ‘If a man<sub>i</sub> has a donkey, he<sub>i</sub> is happy.’

(68) [ e<sub>i</sub> *tangnakwi-lul kaci-myen* ] [ e<sub>i</sub> *hayngpokha-ta.* ]  
 donkey-ACC    own-if    happy-DECL

(69) [ *Salam<sub>i</sub>-i tangnakwi-lul kaci-myen* ] [ *ku<sub>i</sub>-nun hayngpokha-ta.* ]  
 person-NOM    donkey-ACC    own-if    he-top    happy-DECL

The remaining issue is the interpretation of the null elements. In Discourse Representation Theory (Kamp 1981, Heim 1982), an indefinite expression does not have quantificational force on its own but introduces a free variable into the discourse representation structure. Also, according to this theory, a conditional introduces an unselective universal operator if no explicit quantification is provided in the context, and the free variable introduced by an indefinite term in the antecedent and an anaphoric pronoun in the consequent are all bound by the universal operator. When we apply the same mechanism to the case of alternative conditionals, we obtain the following representation for the particle *-itun*:

(70) [ [ *-itun* ] ] =  $\forall[\lambda\bar{P}.\lambda Q.\forall P_i[(P_i \in \bar{P}) \supset (P_i(x) \rightarrow Q(x))]]$ ,  
 where  $\bar{P}$  is a set of predicates  $\{P_1, P_2, \dots, P_n\}$

In the above formula,  $P_i$  indicates a predicate-like usage of proper nouns, which is interpreted roughly as *being identical with  $P_i$* . For example, if the set of students in the given model is {John, Bill, Tom}, the semantic representation of the sentence in (71) can be formalized as in (72).

(71) *Enu haksayng-itun Mary-lul cohaha-n-ta.*  
 which student-ITUN    Mary-ACC like-PRES-DECL

‘Every student likes Mary.’

$\forall[(is\_John(x) \rightarrow like(x)(Mary)) \wedge$   
(72)  $(is\_Bill(x) \rightarrow like(x)(Mary)) \wedge$   
 $(is\_Tom(x) \rightarrow like(x)(Mary))]$

Note that the sentence (71) has the almost same interpretation as the sentence with a genuine universal quantifier *motun* ‘every’ in (73).

(73) *Motun haksayng-i Mary-lul cohaha-n-ta.*  
every student-NOM Mary-ACC like-PRES-DECL  
‘Every student likes Mary.’

The difference between a universal quantifier and *wh*-(N)-*itun* is that the former is always interpreted as universal, but the quantificational force of the latter varies depending on what kind of quantifier binds the variables in its semantic representation. Recall that the existence of an unselective universal quantifier in a conditional is due to the lack of explicit quantification. If there exists an explicit quantificational expression over the conditional, the quantificational force expressed by *wh*-(N)-*itun* may not be universal. For example, we can explain the association of *wh*-(N)-*itun* with the floating quantifier *hana* ‘one’ in (74) (repeated from (5) in Section 1):

(74) *Mwues-itun hana kolu-kela.*  
what-ITUN one choose-IMP  
‘Choose any one item.’

Let us assume that floating numeral expressions in Korean are quantificational adverbs rather than stranded quantifiers (cf. Nakanishi 2006). Then the existential quantification in (74) is due to the quantificational adverb which takes scope over the free variables as shown in (75). In this case, a free choice reading is obtained due to the inner universal quantifier that allows  $x$  to have the property of  $Q$ , no matter which of the alternatives among  $\{x_1, x_2, \dots, x_n\}$  is identical with  $x$ .

(75)  $\exists[\forall P_i[(P_i \in \bar{P}) \supset (P_i(x) \rightarrow Q(x)) \wedge (|x|=1)]]$

In addition, the alternative conditional approach to *wh*-(N)-*itun* also explains why *wh*-expressions such as *myech myeng* ‘how many (people)’ in (76) (repeated from (7)) can be followed by *-itun*.

(76) *Myech myeng-itun i cha-ey tha-l swu iss-ta.*  
how.many CL-ITUN this car-DAT ride-can-DECL

‘Any number of people can ride in this car.’

Since such expressions can be interpreted as quantificational predicates, they can combine with *-itun* which takes predicates as its argument. On the other hand, the lack of a clausal structure in case of *wh*-(N)-*ina* disables such possibility as we will see later.

Also, the argument that *wh*-(N)-*itun* is actually a conditional clause explains why it hardly appears in episodic contexts.

(77) ?*Nwukwu-tun onul hakhoy-ey w-ass-ta.*  
who-ITUN today conference-DAT come-PAST-DECL  
(Intended meaning: ‘Everyone came to the conference today.’)

#### 4.4 *wh*-(N)-*ina*: reanalyzed alternative conditional

As shown in Section 4.2, *wh*-(N)-*ina* is hard to be analyzed as having a clausal structure and thus cannot be an alternative conditional. Rather, it would be descriptively adequate to analyze *-ina* as a distributive universal quantifier. It takes two arguments, a set of alternative individuals and a predicate, and returns a proposition that is true if and only if the functional application of the predicate to each member in the alternative set is true.

(78)  $[[ -ina ]] = \lambda \bar{x} . \lambda Q . \forall x_i [(x_i \in \bar{x}) \supset Q(x_i)]$ ,  
where  $\bar{x}$  is a set of individuals  $\{x_1, x_2, \dots, x_n\}$

Still, the question remains why the particle *-ina* takes a set of alternatives as argument. I hypothesize that *wh*-(N)-*ina*, which originally had the form of alternative conditionals, has later been reanalyzed as a distributive universal expression.<sup>9</sup> In fact, Haspelmath (1995) claims that, in a number of languages, distributive universal quantifiers have been developed via grammaticalization. Interestingly, the vast majority of distributive universals involve *wh*-expressions, among their various diachronic sources. Haspelmath observes a cross-linguistic pattern that distributive universal quantifiers have the form of *wh*-expressions to which certain particles are attached. He names those particles ‘indefiniteness markers,’ such as ‘or,’ ‘also,’ ‘even,’ or copular verbs. He then proposes that these expressions have been diachronically developed from two kinds of structures, namely, non-specific free relative clauses or parametric concessive conditional clauses, which are synchronically exemplified in English in (79) and (80), respectively. Note that his notion of ‘parametric concessive conditional’ is the same as what we call in this paper ‘alternative conditional’.

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<sup>9</sup> It has been argued that other quantificational expressions containing *wh*-items can also be explained in terms of reanalysis. See Kinuhata and Whitman (2009) for a reanalysis approach to *wh*-(N)-*inka* ‘some N’ and J-M Yoon (2004) for a more general reanalysis approach to *wh*-expressions.

(79) *She took whatever she wanted.*

(80) *Whoever you may be, you can come in.*

According to his analysis, if the copula and a *wh*-word as its predicate nominal appear in an alternative conditional clause, the conditional clause may lose its clausal status and be integrated into the main clause. For instance, he proposes that a sentence with a copular type of *wh*-universal in Russian such as (81) has a hypothetical proto-sentence as in (82).

(81) *Sovetuju nažit' den'gi, kakim by to ni bylo obrazom.*  
I.advise to.earn money which:INSTR INDEF way:INSTR  
'I advise (you) to make money by any means.' (Haspelmath 1995: pp.372 (14b))

(82) *Sovetuju nažit' den'gi, kakim by obrazom to ni bylo.*  
I.advise to.earn money which:INSTR PTCL way:instr it PTCL be  
'I advise (you) to make money (viz. by some means<sub>i</sub>) (by) whichever means it<sub>i</sub> may be.' (Haspelmath 1995: pp.373 (17))

The same mechanism can be applied to the reanalysis of *wh*-(N)-*ina* from an alternative conditional. Suppose that *wh*-(N)-*ina* used to have the same clausal structure as *wh*-(N)-*itun* as shown in (83), but the combination of the copula *i* and the alternative conditional clause marker *-na* went through grammaticalization and is reanalyzed as a single nominal particle *-ina* as in (84). Now the implicit arguments no longer exist, and the NP *wh*-(N)-*ina* is interpreted as the argument of the main predicate.

(83) [ e<sub>i</sub> enu haksayng-**i-na** ] [ e<sub>i</sub> Mary-lul cohaha-n-ta. ]  
which student-be-NA Mary-ACC like-PRES-DECL  
'Whichever student he<sub>i</sub> is, he<sub>i</sub> likes Mary.'

(84) *Enu haksayng-ina Mary-lul cohaha-n-ta.*  
which student-INA Mary-ACC like-PRES-DECL  
'Every student likes Mary.'

Assuming that the semantic change reflects the syntactic change, the change of the semantic representation of *wh*-(N)-*ina* is suggested as follows. Suppose that in the hypothesized proto-structure of *wh*-(N)-*ina* in (85), which is the same as the synchronic representation of *wh*-(N)-*itun*, the variables representing the implicit arguments have disappeared and the predicate in the main clause takes as argument the reanalyzed *wh*-(N)-*ina*. Thus, each conjunct  $P_i(x) \rightarrow Q(x)$ , where  $P_i$  is a predicate realization of  $x_i$ , has been reanalyzed as  $Q(x_i)$ . Such a change results in distributive universal quantification, as shown in (86).

$$(85) \forall [(P_1(x) \rightarrow Q(x)) \wedge (P_2(x) \rightarrow Q(x)) \wedge \cdots \wedge \boxed{(P_n(x) \rightarrow Q(x))}] ]$$

$$(86) Q(x_1) \wedge Q(x_2) \wedge \cdots \wedge \boxed{Q(x_n)}$$

The reanalysis approach to *wh*-(N)-*ina* forces a distributive reading, which explains why *wh*-(N)-*ina* is always interpreted as a distributive and cannot co-occur with collective predicates.

(87) *Nwukwu-na ttek sey cokak-ul mek-ess-ta.*  
 who-INA rice.cake 3 piece-ACC eat-will-DECL  
 ‘Everyone will eat three pieces of rice cake.’ (only distributive)

(88) \**Haksayng-tul-i nwukwu-na kangtang-ey moy-ess-ta.*  
 student-PL-NOM who-INA auditorium-DAT gather-PAST-DECL  
 ‘Students all gathered in the auditorium.’

In addition, since its basic semantic representation is universal quantification synchronically, *wh*-(N)-*ina* cannot be restricted by a floating quantifier. Note that adverbial quantification cannot override explicit quantification, as in the sentence *Everyone usually arrives more or less on time* the adverb *usually* can quantify over events only, not the set of individuals that is indicated by *everyone*.

(89) \**Nwukwu-na sey myeng-i cwuk-umyen*  
 who-INA 3 CL-NOM out-if  
*kyengki-nun kkuthna-n-ta.*  
 game-TOP over-PRES-DECL  
 (lit. ‘\*If every three players are out, the game is over.’)

## 5 Concluding Remarks

To summarize, I propose that the universal *wh*-(N)-*ina* and the free choice *wh*-(N)-*itun* in Korean are both derived from alternative conditionals. While *wh*-(N)-*itun* is synchronically an alternative conditional with ellipsis, *wh*-(N)-*ina* has become a distributive universal operator via reanalysis.

Before closing this article, it must be noted that the reanalysis account of *wh*-(N)-*ina* would be strongly supported by historical evidence which shows that it actually used to be a combination of the copular verb *i-* and the alternative conditional marker *-na*. Though I leave this issue as a topic for future research, it is suggestive that there appears the form *nwukwu-ina* ‘everyone’ in the text from the 1920s:

(90) *Nwukwu-ina wuli mincokuy chamtamhan hyengphyenul chamulo pithonghi sayngkakhako tongsiey wuli mincokuy unini toylyenun itulun mwuespotato mence cosen nongep palcen saepey chakswuhal kesipnita.*

‘Everyone who really grieves the tragedy of our nation and wants to save our nation will start to work for agricultural improvement.’(in *Sinmin* September 1926, quoted from S-P Hong (2003))

Note that in the form *nwukwu-ina* the vowel *i* remains even though it is preceded by a vowel, which suggests that the grammaticalization of *wh-(N)-ina* has not fully occurred until the 1920s.

Another remaining issue is the relationship between the two kinds of alternative conditionals, namely, explicit and implicit ones. Although I have analyzed them basically as having the same interpretation, there seem to be subtle differences between those two types in terms of interpretation with multiple alternative sets, binding property, and also probably, the presuppositional behavior, which I have not fully dealt with in the present work. I hope future research will provide thorough answers to these issues.

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