

Korean *-lato* as additive free choice

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Abstract

Korean *-lato* combines with indefinite expressions to form Polarity Sensitive Items with a puzzling distribution: $\exists$ -*lato* is grammatical in modal contexts, where it yields Free Choice effects, and in downward-entailing environments—except in the immediate scope of negation—where it is interpreted existentially. This study aims to capture the semantics of *-lato* from the recent perspective that the distribution of PSIs is constrained by their interaction with a syntactically present exhaustification operator (Chierchia 2013). It is shown that the hybrid behavior of *-lato*—sometimes an NPI, sometimes an FCI—arises from a locality constraint together with a domain-widening effect triggered under two layers of exhaustification. The latter property ties *-lato* to Fălăuș & Nicolae’s (2022) discussion of Romanian *orișicine* and points toward a compositional analysis of *-lato*.

1 Introduction

Polarity Sensitive Items (PSIs) are among the most widely discussed topics in the linguistics literature. At least two types of PSIs have been identified: Negative Polarity Items (NPIs) and Free Choice Items (FCIs). NPIs are known to be licensed in downward-entailing (DE) environments, such as the scope of negation (1b) and the restriction of *every* (1c) (Ladusaw 1979).

- (1) a. *I ate any pasta.
b. I didn’t eat any pasta.
c. Every person who ate any pasta got sick.

However, subsequent studies have shown that some NPIs are licensed only in a proper subset of DE environments. For example, English *in weeks* cannot appear in the restriction of *every*, unlike *any*. This observation has led to the distinction between “strong” and “weak” NPIs. According to Zwarts (1996), strong NPIs are licensed in anti-additive (AA) environments, which is a logically stronger property than DE.

- (2) a. *I ate pasta in weeks.
b. I didn’t eat pasta in weeks.
c. *Every person who ate pasta in weeks got sick.

English *any* functions not only as an NPI but also as an FCI. It yields a universal interpretation in the scope of a possibility modal (3b) and in imperatives (3c).

- (3) a. *I ate any pasta.
- b. You may eat any pasta.
- c. Eat any pasta.

The cross-linguistic investigation of PSIs reveals an intriguing pattern: NPIs and FCIs look alike. For instance, English *any* and German *irgendein* have dual functions, and Korean *nwukwu-to* (NPI) vs. *nwukwu-na* (FCI), Japanese *dare-mo* (NPI) vs. *dare-demo* (FCI) point to an undeniable morphological resemblance. Furthermore, a great majority of these items appear to stem from indefinite expressions. The question is why this should be the case, given the *prima facie* disconnect between DE (or AA) environments and modal contexts.

Chierchia (2013) offers an account of this pattern: NPIs and FCIs are subject to a unitary mechanism called *exhaustification*, which limits their distribution and strengthens their meaning in predictable ways. NPIs and FCIs are both underlyingly simple indefinites, and their distinct properties arise from how their alternatives are defined, among other factors. For this reason, the analysis developed in Chierchia (2013) and subsequent work is often referred to as the *alternatives & exhaustification* framework.

This paper focuses on a third type of PSI in Korean, *nwukwu-lato*. *Nwukwu-lato* exhibits a puzzling distribution: it is licensed by DE operators and possibility modals, but not under negation. This is surprising given that Korean NPIs, e.g., *nwukwu-to*, are known to be strong. I argue, however, that the distribution and meaning of *nwukwu-lato* can be accounted for within the *alternatives & exhaustification* framework. Building on Fălăuş & Nicolae’s (2022) discussion of additive FC, I propose a compositional analysis of *-lato*, under which its semantics emerges from two layers of exhaustification.

The rest of the paper is structured as follows. Section 2 presents data showing that *nwukwu-to* is a strong NPI and *nwukwu-na* an FCI, but that *nwukwu-lato* does not fit into either traditional category. Section 3 introduces the *alternatives & exhaustification* framework in more detail and demonstrates how the semantics of *nwukwu-to* and *nwukwu-na* straightforwardly follows. This section also briefly discusses the distinction between weak and strong NPIs and reviews Fălăuş & Nicolae’s 2022 proposal. This leads us to the compositional analysis of *-lato* in section 4. Section 5 concludes.

2 Data

Korean PSIs are formed by combining various indefinite expressions with particles such as *-to*, *-na*, and *-lato*. This is illustrated in (4) with the example of *-to*.¹

- (4) a. *hana-to* ‘one-TO’
b. *cokum-to* ‘little-TO’
c. *han myeng-to* ‘one CL.HUM-TO’
d. *etten salam-to* ‘some person-TO’
...

This paper focuses on *nwukwu-to* ‘who-TO’, *nwukwu-na* ‘who-NA’, and *nwukwu-lato* ‘who-LATO’. *Nwukwu* corresponds to a *wh*-existential, or *quexistential* (Hengeveld et al. 2023).

Nwukwu-to. Before turning to the data, I first establish that *-to* is an additive morpheme, as shown in (5). Accordingly, I will gloss *-to* as ADD from this point on.

- (5) Phasutha-*to* mek-ess-ta.
pasta-ADD eat-PST-DECL
‘(I) also/even ate pasta.’

Nwukwu-to ‘who-ADD’ displays the distribution of a strong NPI: it is grammatical in the scope of negation (6) but ungrammatical in non-negative DE environments (7).

- (6) Na-nun *nwukwu-to* an manna-ass-ta.
I-TOP who-ADD NEG meet-PST-DECL
‘I didn’t meet anyone.’
- (7) a. **Nwukwu-to* manna-ass-ta-myen yonguyca-i-ta.
who-ADD meet-PST-DECL-COND suspect-COP-DECL
‘If you met anyone, you’re a suspect.’
b. **Nwukwu-to* manna-n motun salam-un yonguyca-i-ta.
who-ADD meet-REL every person-TOP suspect-COP-DECL
‘Every person who met anyone is a suspect.’

As expected, *nwukwu-to* is ungrammatical in both positive episodic contexts (8) and FCI-licensing environments (9).

- (8) *Na-nun *nwukwu-to* manna-ass-ta.
I-TOP who-ADD meet-PST-DECL
‘I met anyone.’

¹Some expressions fail to form FCIs when combined with *-na*, for reasons that remain unclear.

- (9) a. *Na-nun *nwukwu-to* manna-l swu iss-ta.
 I-TOP who-ADD meet-REL way exist-DECL
 ‘I can meet anyone_{NPI}.’²
 b. **Nwukwu-to* manna-la.
 who-ADD meet-IMP
 ‘Meet anyone_{NPI}.’

Nwukwu-na. Analogously, I first establish that *-na* is a disjunctive morpheme, as shown in (10). From this point forward, *-na* is glossed as DISJ.

- (10) Phasutha-*na* phica-lul mek-ess-ta.
 pasta-DISJ pizza-ACC eat-PST-DECL
 ‘(I) ate pasta or pizza.’

Nwukwu-na ‘who-DISJ’ is an FCI: it yields FC effects under possibility modals (11a) and imperatives (11b).

- (11) a. Na-nun *nwukwu-na* manna-l swu iss-ta.
 I-TOP who-DISJ meet-REL way exist-DECL
 ‘I can meet anyone.’
 b. *Nwukwu-na* manna-la.
 who-DISJ meet-IMP
 ‘Meet anyone.’

By contrast, it is ungrammatical in non-modal, episodic contexts—whether positive, negative, or DE.³

- (12) *Na-nun *nwukwu-na* manna-ass-ta.
 I-TOP who-DISJ meet-PST-DECL
 ‘I met anyone.’
 (13) *Na-nun *nwukwu-na* an manna-ass-ta.
 I-TOP who-DISJ NEG meet-PST-DECL
 ‘I didn’t meet anyone_{FCI}.’
 (14) a. **Nwukwu-na* manna-ass-ta-myen yonguyca-i-ta.
 who-DISJ meet-PST-DECL-COND suspect-COP-DECL
 ‘If you met anyone_{FCI}, you’re a suspect.’

²Note that the English translations in (9a) and (9b) sound perfectly acceptable, because *any* functions as both an NPI and an FCI. The ungrammaticality of *nwukwu-to* in (9a) and (9b) arises from an NPI appearing in non-DE environments. The subscript NPI on *any* is included to illustrate this point.

³*Nwukwu-na* can be made felicitous in environments without an overt modal, under an ‘embedded’ FC reading. This is attested for English *any* as well, e.g., in *I didn’t eat ANY pasta*, where *any* is stressed. Chierchia (2013) analyzes such cases as involving a covert modal intervening between a DE operator and an FCI. I set these cases aside in this study.

- b. **Nwukwu-na* manna-n motun salam-un yonguyca-i-ta.
 who-DISJ meet-REL every person-TOP suspect-COP-DECL
 ‘Every person who met anyone_{FCI} is a suspect.’

Nwukwu-lato. Let us first consider the effect of attaching *-lato* to a regular NP, as shown in (15). It has been observed that *-lato* invokes a pragmatic scale: in (15), it contributes a not-at-issue meaning that pasta is not an ideal option for the speaker’s appetite (Kang 2023a). This pragmatic component constrains the type of NP *-lato* can combine with, depending on the context. For example, native speakers find (16) weird out of the blue, since winning a gold medal is typically the optimal outcome.

- (15) Phasutha-*lato* mek-ko siph-ta.
 pasta-LATO eat-CONN want-DECL
 ‘(I) want to eat pasta.’
 Presupposition?: ‘Pasta ranks low on the scale of foods I want to eat.’
- (16) ??Kum-meytal-*ilato* tta-ko siph-ta.
 gold-medal-LATO win-CONN want-DECL
 ‘(I) want to win the gold medal.’

We now turn to the puzzling distribution of *nwukwu-lato*. It is licensed in DE environments (17), where it is interpreted existentially, but not in the immediate scope of negation (18). Moreover, it yields FC effects in typical FCI-licensing environments (19) and is disallowed in non-DE episodic contexts (20). Note also that the FC use of *nwukwu-lato* carries a stronger, more “emphatic” flavor than the regular FCI *nwukwu-na*; this is indicated by capitalized *any* in the translations.

- (17) a. *Nwukwu-lato* manna-ass-ta-myen yonguyca-i-ta.
 who-LATO meet-PST-DECL-COND suspect-COP-DECL
 ‘If you met anyone, you’re a suspect.’
 b. *Nwukwu-lato* manna-n motun salam-un yonguyca-i-ta.
 who-LATO meet-REL every person-TOP suspect-COP-DECL
 ‘Every person who met anyone is a suspect.’
- (18) *Na-nun *nwukwu-lato* an manna-ass-ta.
 I-TOP who-LATO NEG meet-PST-DECL
 ‘I didn’t meet anyone.’
- (19) a. Na-nun *nwukwu-lato* manna-l swu iss-ta.
 I-TOP who-LATO meet-REL way exist-DECL
 ‘I can meet ANYone.’
 b. *Nwukwu-lato* manna-la.
 who-LATO meet-IMP
 ‘Meet ANYone.’

- (20) *Na-nun *nwukwu-lato* manna-ass-ta.
 I-TOP who-LATO meet-PST-DECL
 ‘I met anyone.’

To summarize, the *wh*-existential *nwukwu* in Korean combines with the additive *-to* to form a strong NPI and with the disjunction *-na* to form an FCI. The focus of this paper is on the third type, *nwukwu-lato*, which appears to resist the traditional classification of PSIs.

	strong NPI <i>nwukwu-to</i>	FCI <i>nwukwu-na</i>	?? <i>nwukwu-lato</i>
positive episodic	✗	✗	✗
negative episodic	✓	✗	✗
non-negative DE	✗	✗	✓
possibility modal & imperative	✗	✓	✓

Table 1: The distribution of *nwukwu-to*, *nwukwu-na*, and *nwukwu-lato*

Questions that arise from the distribution and interpretation of *nwukwu-lato* are as follows: (i) Why is *nwukwu-lato* ungrammatical under negation but grammatical in non-negative DE environments? (ii) Why does *nwukwu-lato* behave like an NPI in non-negative DE environments but like an FCI in modal contexts? (iii) What’s going on with the “emphatic” feel of *nwukwu-lato* in FCI-licensing environments? To address these questions, I introduce relevant theoretical background and develop an analysis of *nwukwu-to* and *nwukwu-na*. This will hopefully clarify what analytical options remain for an account of *nwukwu-lato*.

3 Alternatives & exhaustification

3.1 The EXH operator

Various forms of exhaustification have been proposed in the literature: covert *only* (Chierchia 2006), innocent exclusion (Fox 2007), presuppositional exhaustification (Bassi et al. 2021), etc. In this paper, I adopt the simplest version of Chierchia’s—the EXH operator takes two arguments, the prejacent *p* and the alternative set *Alt*, and asserts *p* conjoined with the negation of all alternatives not entailed by *p*.

$$(21) \quad \llbracket \text{EXH} \rrbracket(\text{Alt})(p) = p_w \wedge \forall q \in \text{Alt} : p \not\sqsubseteq q \rightarrow \neg q_w$$

EXH plays a central role in deriving scalar implicatures (Chierchia et al. 2012). Consider (22): the sentence carries the implicature that some, *but not all*, pastas are easy to make. If we assume that EXH applies at the propositional level, the prejacent and

the alternative set are as given in (22a) and (22b), respectively. Since the prejacent does not entail the alternative in *Alt*, EXH negates it. The resulting meaning is shown in (22c), and corresponds exactly to the observed scalar implicature.

- (22) Some pastas are easy to make.
- a. $p = \exists x \in D : \text{EASY}(x)$
 - b. $\text{Alt} = \{\forall x \in D : \text{EASY}(x)\}$
 - c. $\llbracket \text{EXH} \rrbracket(\text{Alt})(p) = \exists x \in D : \text{EASY}(x) \wedge \neg \forall x \in D : \text{EASY}(x)$

EXH also plays a role in deriving FC effects (Fox 2007). FC effects are well-known to arise when disjunction appears in the scope of a possibility modal, as in (23). Sentences of this type seem to convey a meaning stronger than their surface form suggests—namely, that you may eat pasta *and* you may eat pizza.

- (23) You may eat pasta or pizza.
- a. $\Diamond(\text{pasta} \vee \text{pizza})$ (what is said)
 - b. $\Diamond\text{pasta} \wedge \Diamond\text{pizza}$ (FC effect)

According to Fox (2007), FC effects arise as a result of exhaustification over *pre-exhaustified* domain alternatives (DAs). For disjunction, the DAs correspond to each disjunct (cf. Sauerland 2004), as in (24a), and their pre-exhaustified counterparts are given in (24b). Note that a pre-exhaustified DA in this case is equivalent to an exclusive statement such as *you're only allowed to eat pasta*, as shown in (25).

- (24) a. DAs: $\Diamond\text{pasta}$, $\Diamond\text{pizza}$
b. *pre-exh* DAs: $\text{EXH}\Diamond\text{pasta}$, $\text{EXH}\Diamond\text{pizza}$
- (25) $\text{EXH}\Diamond\text{pasta} = \Diamond\text{pasta} \wedge \neg\Diamond\text{pizza}$ ($\sim$ *You're only allowed to eat pasta.*)

Now consider applying EXH, assuming that *Alt* consists of these pre-exhaustified DAs. Since the prejacent does not entail any of them, they are all negated. Crucially, the negation of an exclusive statement like $\Diamond a \wedge \neg\Diamond b$ yields a conditional $\Diamond a \rightarrow \Diamond b$. This strengthens the meaning to universal-like modal claims over all disjuncts and gives rise to the FC effect.

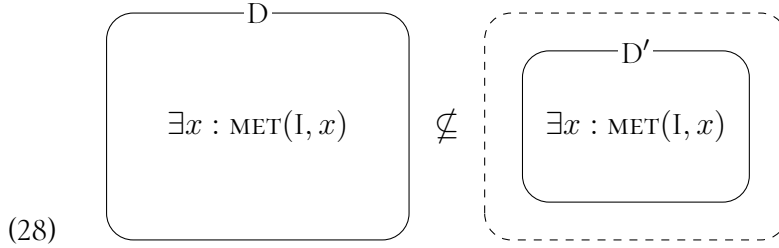
- (26) You may eat pasta or pizza.
- a. $p = \Diamond(\text{pasta} \vee \text{pizza})$
 - b. $\text{Alt} = \{\text{EXH}\Diamond\text{pasta}, \text{EXH}\Diamond\text{pizza}\}$
 - c. $\begin{aligned} \llbracket \text{EXH} \rrbracket(\text{Alt})(p) &= \Diamond(\text{pasta} \vee \text{pizza}) \wedge \neg\text{EXH}\Diamond\text{pasta} \wedge \neg\text{EXH}\Diamond\text{pizza} \\ &= \Diamond(\text{pasta} \vee \text{pizza}) \wedge \neg(\Diamond\text{pasta} \wedge \neg\Diamond\text{pizza}) \wedge \neg(\Diamond\text{pizza} \wedge \neg\Diamond\text{pasta}) \\ &= \Diamond(\text{pasta} \vee \text{pizza}) \wedge (\Diamond\text{pasta} \rightarrow \Diamond\text{pizza}) \wedge (\Diamond\text{pizza} \rightarrow \Diamond\text{pasta}) \\ &= \Diamond(\text{pasta} \vee \text{pizza}) \wedge (\Diamond\text{pasta} \leftrightarrow \Diamond\text{pizza}) \\ &= \Diamond\text{pasta} \wedge \Diamond\text{pizza} \end{aligned}$

3.2 Understanding *nwukwu-to* and *nwukwu-na*

In this subsection, I develop an analysis of *nwukwu-to* and *nwukwu-na* within the *alternatives & exhaustification* framework, largely following Chierchia (2013). In brief: NPI *nwukwu-to* activates DAs that must be obligatorily exhaustified; a semantic contradiction arises if *nwukwu-to* is not under the scope of a DE operator. On the other hand, FCI *nwukwu-na* activates *pre-exhaustified* DAs that must be obligatorily exhaustified, deriving the FC effect in modal contexts.

Nwukwu-to. As seen earlier, *nwukwu-to* is a strong NPI that is licensed in a proper subset of DE environments. We begin by examining positive environments, in which *nwukwu-to* is ungrammatical. Consider (8), repeated below as (27). Assuming that PSIs are underlyingly simple indefinites, the prejacent is given in (27a). We further assume that *nwukwu-to* activates DAs, formed by replacing the domain variable D in the prejacent with its subdomains D' (Chierchia 2013). Since an existential statement over a larger domain D does not entail one over a smaller domain D' (28), EXH negates all DAs, resulting in a semantic contradiction (27c).

- (27) *Na-nun *nwukwu-to* manna-ass-ta.
 I-TOP who-ADD meet-PST-DECL
 'I met anyone.'
- a. $p = \exists x \in D : \text{MET}(I, x)$
 b. $\text{Alt} = \{ \exists x \in D' : \text{MET}(I, x) \mid D' \subset D \}$
 c. $\llbracket \text{EXH} \rrbracket (\text{Alt})(p) = \exists x \in D : \text{MET}(I, x) \wedge \bigwedge \{ \neg \exists x \in D' : \text{MET}(I, x) \mid D' \subset D \} = \perp$

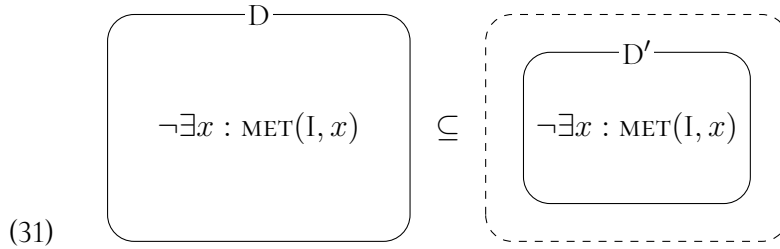


To see more clearly why this is a semantic contradiction, consider the concrete example below where D consists of two individuals, Vincent and Jules. The prejacent is equivalent to the disjunctive statement *I met Vincent or Jules* (29a). The smaller domains D' correspond to each disjunct (29b). When these are negated and conjoined with the prejacent, the result is a clear contradiction, as shown in (29c).

- (29) Suppose $D = \{\text{Vincent}, \text{Jules}\}$.
- a. $p = \text{MET}(I, v) \vee \text{MET}(I, j)$
 b. $\text{Alt} = \{ \text{MET}(I, v), \text{MET}(I, j) \}$
 c. $\llbracket \text{EXH} \rrbracket (\text{Alt})(p) = (\text{MET}(I, v) \vee \text{MET}(I, j)) \wedge \neg \text{MET}(I, v) \wedge \neg \text{MET}(I, j) = \perp$

In negative environments, however, no semantic contradiction arises. Consider (6), repeated below as (30). The prejacent (30a) and the alternative set (30b) are defined in the same way as before, modulo negation. Crucially, the entailment pattern is now reversed: p entails every element of Alt , as illustrated in (31). As a result, EXH negates none of the alternatives, an instance of vacuous exhaustification (30c).

- (30) Na-nun *nwukwu-to* an manna-ass-ta.
 I-TOP who-ADD NEG meet-PST-DECL
 ‘I didn’t meet anyone.’
- a. $p = \neg \exists x \in D : \text{MET}(I, x)$
 b. $Alt = \{ \neg \exists x \in D' : \text{MET}(I, x) \mid D' \subset D \}$
 c. $\llbracket \text{EXH} \rrbracket(Alt)(p) = p$ (vacuous exhaustification)



It is important to note that the reversal of entailment patterns is a general hallmark of DE environments. For example, *Every person you met in D is a suspect* entails *Every person you met in D' is a suspect*, where $D' \subseteq D$. This raises an immediate concern: the analysis developed so far incorrectly predicts that *nwukwu-to* should also be grammatical in DE environments such as the restriction of *every*, contrary to the evidence in (7). Existing treatments of strong NPIs within the exhaustification literature appeal to the distinction between at-issue and not-at-issue meaning. I defer discussion of this point to the next subsection.

Nwukwu-na. *Nwukwu-na* is an FCI licensed under possibility modals.⁴ Consider (11a), repeated below as (32). Under the assumption that *nwukwu-na* activates pre-exhaustified DAs, the prejacent is given in (32a) and its alternative set in (32b). Note that the negation of a pre-exhaustified DA results in conditional statement over subdomains D' and $D \setminus D'$. Conjoining these conditionals with the prejacent gives rise to the FC effect—*For all x in D , I can meet x* —as shown in (32c).

- (32) Na-nun *nwukwu-na* manna-l swu iss-ta.
 I-TOP who-DISJ meet-REL way exist-DECL
 ‘I can meet anyone.’
- a. $p = \Diamond \exists x \in D : \text{MEET}(I, x)$

⁴I limit the discussion here to possibility modals, as the precise semantic characterization of imperatives remains unclear (see von Stechow & Iatridou 2017, Kaufmann 2020, 2023, and references therein).

- b. $Alt = \{\text{EXH} \Diamond \exists x \in D' : \text{MEET}(I, x) | D' \subset D\}$
 $= \{\Diamond \exists x \in D' : \text{MEET}(I, x) \wedge \neg \Diamond \exists x \in D \setminus D' : \text{MEET}(I, x) | D' \subset D\}$
- c. $\llbracket \text{EXH} \rrbracket(Alt)(p) = p \wedge \bigwedge \{\neg \text{EXH} \Diamond \exists x \in D' : \text{MEET}(I, x) | D' \subset D\}$
 $= p \wedge \bigwedge \{\neg(\Diamond \exists x \in D' \dots \wedge \neg \Diamond \exists x \in D \setminus D' \dots) | D' \subset D\}$
 $= p \wedge \bigwedge \{(\Diamond \exists x \in D' \dots) \rightarrow (\Diamond \exists x \in D \setminus D' \dots) | D' \subset D\}$
 $= \forall x \in D : \Diamond \text{MEET}(I, x)$

Let me illustrate this more concretely, referring again to the domain D consisting of two individuals. The prejacent p and the alternative set Alt are given in (33a) and (33b), respectively. Since p entails none of the alternatives, EXH negates all of them, and the conjunction of these negated alternatives yields the biconditional $\Diamond \text{MEET}(I, v) \leftrightarrow \Diamond \text{MEET}(I, j)$. Because $p = \Diamond \text{MEET}(I, v) \vee \Diamond \text{MEET}(I, j)$, combining it with the biconditional strengthens the meaning to $\Diamond \text{MEET}(I, v) \wedge \Diamond \text{MEET}(I, j)$.

- (33) Suppose $D = \{\text{Vincent}, \text{Jules}\}$.
- a. $p = \Diamond(\text{MEET}(I, v) \vee \text{MEET}(I, j)) = \Diamond \text{MEET}(I, v) \vee \Diamond \text{MEET}(I, j)$
 - b. $Alt = \{\text{EXH} \Diamond \text{MEET}(I, v), \text{EXH} \Diamond \text{MEET}(I, j)\}$
 $= \{\Diamond \text{MEET}(I, v) \wedge \neg \Diamond \text{MEET}(I, j), \Diamond \text{MEET}(I, j) \wedge \neg \Diamond \text{MEET}(I, v)\}$
 - c. $\llbracket \text{EXH} \rrbracket(Alt)(p) = p \wedge \neg \text{EXH} \Diamond \text{MEET}(I, v) \wedge \neg \text{EXH} \Diamond \text{MEET}(I, j)$
 $= p \wedge \neg(\Diamond \text{MEET}(I, v) \wedge \neg \Diamond \text{MEET}(I, j)) \wedge \dots$
 $= p \wedge (\Diamond \text{MEET}(I, v) \leftrightarrow \Diamond \text{MEET}(I, j))$
 $= \Diamond \text{MEET}(I, v) \wedge \Diamond \text{MEET}(I, j)$

Although the analysis developed above correctly predicts the FC effect of *nwukwu-na* in modal environments, some additional assumptions are needed to rule it out in non-modal ones. First, excluding *nwukwu-na* in non-modal UE environments requires us to consider its scalar alternatives (in addition to its domain alternatives), according to Chierchia (2013). For reasons of space, I will not go into the details of this technical point, but note that the addition of scalar alternatives has almost no effect on (32).

Second, ruling out *nwukwu-na* in non-modal DE environments requires positing a lexical condition that Chierchia terms ‘Proper Strengthening’ (PS). PS prevents FCIs—which do not behave as NPIs—from appearing in DE environments by imposing a requirement that the strengthened, exhaustified meaning *strictly* entail the original assertion.

$$(34) \quad \llbracket \text{EXH}_{\text{PS}} \rrbracket = \lambda A_{\text{st}, \text{t}}. \lambda p_{\text{st}} : \llbracket \text{EXH} \rrbracket(A)(p) \subset p. \llbracket \text{EXH} \rrbracket(A)(p)$$

This solution is admittedly unsatisfactory, and I leave it to future work to determine whether this condition can be recast as a more general constraint on exhaustification.

3.3 Strong NPIs

As previously noted, the current analysis incorrectly predicts that *nwukwu-to* should be licensed in non-negative DE environments. This indicates the need for a theory that distinguishes between weak and strong NPIs, one that will predict a more limited distribution for the latter. A widely held assumption in the literature is that the distinction arises from the dimension(s) of meaning to which they are sensitive (Gajewski 2011). Weak NPIs are sensitive only to assertive meanings, which accounts for their occurrence under Strawson-DE operators such as *only*, as convincingly argued by von Stechow (1999).

- (35) Only Jules ate any pasta.
 P: Jules ate any pasta. (UE)
 A: No one other than Jules ate any pasta. (DE)

Strong NPIs, on the other hand, attend to both assertive and non-assertive meanings, such as presuppositions and implicatures. This accounts for their ungrammaticality under *only*; the presupposition of *only* disrupts the DE status of its assertive component. Likewise, the existential presupposition of *every* renders its restriction non-DE, thereby ruling out strong NPIs in that position.⁵

- (36) *Only Jules ate pasta in weeks.
 P: Jules ate pasta in weeks. (UE)
 A: No one other than Jules ate pasta in weeks. (DE)
- (37) *Every person who met *nwukwu-to* is a suspect.
 P: $\exists x : [\exists y \in D : \text{MET}(x, y)]$ (UE)
 A: $\forall x : [\exists y \in D : \text{MET}(x, y)] \rightarrow \text{SUSPECT}(x)$ (DE)

However, Chierchia (2013) suggests that an additional locality constraint might be necessary for strong NPI licensing. The problem is that *in weeks* appears to be degraded in (38), even though *no* is both AA and presuppositionless.

- (38) *No person that had seen Mary in weeks was contacted.

I pursue Chierchia's idea further and argue that strong exhaustification is, indeed, a strictly local (i.e. clause-bound) phenomenon. This straightforwardly accounts for the ungrammaticality of *nwukwu-to* in the restriction of *every* and in the antecedent of conditionals. To see this, consider the simplified version of (7b) in (39).

⁵To be precise, this formulation of strong NPI licensing does not fully align with Zwarts's (1996) notion of AA. For example, Chierchia (2013) shows that the restriction of *every* blocks strong NPIs, despite counting as AA under Zwarts's classification.

- (39) *Every person who met *nwukwu-to* is a suspect.
- a. EXH $[\forall x : [\exists y \in D : \text{MET}(x, y)] \rightarrow \text{SUSPECT}(x)]$
 - b. $\forall x : [\text{EXH } \exists y \in D : \text{MET}(x, y)] \rightarrow \text{SUSPECT}(x)$

Assuming that EXH applies at the propositional level, there are two possible LFs: one where EXH scopes over the entire sentence (39a), and another where it scopes only over the restriction of *every* (39b). The first LF is ill-formed due to the locality constraint of *nwukwu-to*. The second LF yields a semantic contradiction, since from the perspective of EXH, *nwukwu-to* occurs in a UE environment. (EXH intervenes between the universal quantifier and *nwukwu-to*.) This, I argue, is the reason why *nwukwu-to* cannot appear in non-negative DE environments.

3.4 Additive free choice

The final ingredient in accounting for the semantics of *nwukwu-lato* comes from Fălăuş & Nicolae’s (2022) discussion of additive free choice. They introduce a novel class of FCI in Romanian, which they refer to as additive FCIs (ADD-FCIs). The ADD-FCI *orişicine* differs from the regular FCI *oricine* in that it is morphologically made up of disjunction *and* an additive particle.

- (40) a. *orişicine*: *ori* ‘DISJ’ + *şi* ‘ADD’ + *cine* ‘who’ (ADD-FCI)
 b. *oricine*: *ori* ‘DISJ’ + *cine* ‘who’ (FCI)

In contrast to *oricine*, *orişicine* is shown to be felicitous in an unconditional structure only when the antecedent is marked with the conditional mood.

- (41) a. {*Oricine*/**orişicine*} *va suna azi, sunt ocupată.*
 FCI/ADD-FCI FUT.3SG call today am busy
 ‘Whoever is going to call today, I’m busy.’
 b. {*Oricine*/*orişicine*} *ar suna azi, sunt ocupată.*
 FCI/ADD-FCI COND.3SG call today am busy
 ‘Whoever may call today, I’m busy.’

Fălăuş & Nicolae’s analysis of ADD-FCIs builds on two assumptions. First, the additive *şi* signals exhaustification over the *pre-exhaustified* variant of the prejacent. Consider example (42). Assuming that its alternative is the pre-exhaustified variant—i.e., *Only Ana came to the party* (42b)—we get the desired additive interpretation from the negation of this alternative, as shown in (42c).

- (42) *Şi Ana a venit la petrecere.*
 ADD Ana has come to party
 ‘Even/also Ana came to the party.’
 a. $p = \text{CAME}(\text{Ana})$

- b. $Alt = \{EXH \text{ CAME}(Ana)\}$
 $= \{CAME(Ana) \wedge \forall x \in D : x \neq Ana \rightarrow \neg CAME(x)\}$
- c. $\llbracket EXH \rrbracket(Alt)(p) = CAME(Ana) \wedge \neg[EXH \text{ CAME}(Ana)]$
 $= CAME(Ana) \wedge \neg[\forall x \in D : x \neq Ana \rightarrow \neg CAME(x)]$
 $= CAME(Ana) \wedge [\exists x \in D : x \neq Ana \wedge CAME(x)]$

The second assumption concerns the scope relation between two layers of exhaustification: EXH_{ADD} takes scope over EXH_{FCI} . If the basic meaning of *orişicine* is a simple existential, EXH_{FCI} will first strengthen it to a universal, which corresponds to the FC effect. Since this intermediate meaning, $\forall x \in D : P(x)$, is already the strongest in its domain, applying EXH_{ADD} results in *domain widening*, as in (43). This is illustrated in (44); the pre-exhaustified variant amounts to the claim that a domain-sensitive statement *only* holds of D. This brings into consideration a larger domain $D^\uparrow$, which results in a domain widening effect when exhaustified, as shown in (44c).

$$(43) \quad \exists x \in D : P(x) \Rightarrow \boxed{EXH_{FCI}} \Rightarrow \forall x \in D : P(x) \Rightarrow \boxed{EXH_{ADD}} \Rightarrow \forall x \in D^\uparrow : P(x),$$

where $D \subset D^\uparrow$.

- (44) a. $p = \forall x \in D : P(x)$
- b. $Alt = \{EXH \forall x \in D : P(x)\}$
 $= \{\forall x \in D : P(x) \wedge \neg \forall x \in D^\uparrow : P(x) \mid D \subset D^\uparrow\}$
- c. $\llbracket EXH \rrbracket(Alt)(p) = \forall x \in D : P(x) \wedge \neg[EXH \forall x \in D : P(x)]$
 $= \forall x \in D : P(x) \wedge \forall x \in D^\uparrow : P(x)$
 $= \forall x \in D^\uparrow : P(x), \text{ for some superset } D^\uparrow$

The ungrammaticality of *orişicine* in (41a) is attributed to this effect; it quantifies over larger domains, which renders it incompatible with the indicative mood.⁶

Before diving into the main analysis, let us take a step back and summarize the key ingredients we have gathered. First, we defined EXH in its simplest form: it asserts the prejacent and negates all alternatives not entailed by it. Next, we introduced a preliminary analysis of strong NPI *nwukwu-to* and FCI *nwukwu-na* within the *alternatives & exhaustification* framework. The general idea is that exhaustification over alternatives produces a semantic contradiction where these items are ungrammatical, and we have also seen how FC effects come about under the same mechanism. This led us to the discussion concerning weak versus strong NPIs, where I tentatively suggest that a locality constraint is relevant for strong NPIs. Lastly, we considered the Romanian ADD-FCI *orişicine*, whose morphological structure and domain-widening effect will prove crucial for analyzing *nwukwu-lato*.

⁶This is a considerable simplification of their account of the incompatibility of *orişicine* with the indicative mood. I refer the interested readers to the original article for a comprehensive discussion.

4 Korean *-lato* as additive free choice

I argue that *-lato* can be decomposed into the disjunction *-la(-na)* and the additive *-to*.⁷ This will contribute two layers of exhaustification, for which I follow Fălăuş & Nicolae (2022) in assuming $\text{EXH}_{\text{ADD}} \gg \text{EXH}_{\text{FCI}}$. I further assume that the locality constraint for *nwukwu-to* also applies to *nwukwu-la-to*; in other words, it is the requirement of *-to* to be locally exhaustified. This will account for the distributional difference between *nwukwu-to*, which has one layer of exhaustification, and *nwukwu-la-to*, which has two.

	strong NPI <i>nwukwu-to</i>	FCI <i>nwukwu-na</i>	ADD-FCI <i>nwukwu-lato</i>
positive episodic	✗	✗	✗
negative episodic	✓	✗	✗
non-negative DE	✗	✗	✓
possibility modal & imperative	✗	✓	✓

Table 2: The distribution of *nwukwu-to*, *nwukwu-na*, and *nwukwu-lato* (repeated)

Recall the distribution of *nwukwu-la-to*: it yields FC effects under possibility modals and imperatives, is interpreted existentially in DE environments, but crucially is ungrammatical in the immediate scope of negation. The generalization that can be drawn from this is that *nwukwu-la-to* is *locally an FCI but globally an NPI*. Put differently, in mono-clausal structures, *nwukwu-la-to* shows the same distribution as the FCI *nwukwu-na*; in bi-clausal structures, it behaves as an NPI.

I first focus on the ungrammaticality of *nwukwu-la-to* in non-modal, episodic environments—both positive and negative.

- (45) *Na-nun *nwukwu-la-to* manna-ass-ta.
I-TOP who-DISJ-ADD meet-PST-DECL
'I met anyone_{FCI}.'
- (46) *Na-nun *nwukwu-la-to* an manna-ass-ta.
I-TOP who-DISJ-ADD NEG meet-PST-DECL
'I didn't meet anyone_{FCI}.'

This follows naturally under the view that *nwukwu-la-to* is locally an FCI. I argue that *nwukwu-la-to* is ruled out in these environments for the same reason as *nwukwu-na*. In other words, the local application of EXH_{FCI} results in ungrammaticality.⁸

⁷I assume here, without explicit evidence, a phonological alternation between *-la* and *-na*. Identifying synchronic or diachronic evidence for this alternation is left for future research.

⁸As discussed in section 3.2, ruling out FCIs in non-modal environments requires invoking scalar alternatives and a constraint such as PS. Without endorsing these specific mechanisms, I assume that whatever excludes *nwukwu-na* in these environments will likewise exclude *nwukwu-la-to*.

The assumption that *nwukwu-la-to* is locally an FCI also captures its use in modal contexts. Under possibility modals and imperatives, *nwukwu-la-to* gives rise to an FC interpretation, as shown in (19)—the possibility modal case is repeated below in (47). Recall that *nwukwu-la-to* is often described as conveying a stronger, more “emphatic” flavor than *nwukwu-na*.

- (47) Na-nun *nwukwu-la-to* manna-l swu iss-ta.
 I-TOP who-DISJ-ADD meet-REL way exist-DECL
 ‘I can meet ANYone.’

I attribute the flavor difference between *nwukwu-na* and *nwukwu-la-to* to the domain widening effect. The LF for (47) is given in (48). The local application of EXH_{FCI} first yields the FC effect, in precisely the same way as described earlier for *nwukwu-na*. The resulting meaning is one in which the universal quantifier scopes over the possibility modal, as shown in (49c).

- (48) $\text{EXH}_{\text{ADD}} \text{EXH}_{\text{FCI}} \Diamond \exists x \in D : \text{MET}(I, x)$
 (49) $\text{EXH}_{\text{FCI}} \Diamond \exists x \in D : \text{MEET}(I, x)$
 a. $p = \Diamond \exists x \in D : \text{MEET}(I, x)$
 b. $\text{Alt} = \{ \text{EXH} \Diamond \exists x \in D' : \text{MEET}(I, x) \mid D' \subset D \}$
 c. $\llbracket \text{EXH} \rrbracket(\text{Alt})(p) = \forall x \in D : \Diamond \text{MEET}(I, x)$ (FC effect)

On top of this, the application of EXH_{ADD} yields a domain widening effect, as described earlier for the Romanian ADD-FCI *orișicine*. The resulting meaning is identical to (49c), except that the universal claim now holds of a larger domain $D^\uparrow$.

- (50) $\text{EXH}_{\text{ADD}} \forall x \in D : \Diamond \text{MEET}(I, x)$
 a. $p = \forall x \in D : \Diamond \text{MEET}(I, x)$
 b. $\text{Alt} = \{ \text{EXH} \forall x \in D : \Diamond \text{MEET}(I, x) \}$
 c. $\llbracket \text{EXH} \rrbracket(\text{Alt})(p) = \forall x \in D^\uparrow : \Diamond \text{MEET}(I, x)$ (domain widening effect)

The current analysis predicts an asymmetry between *nwukwu-na* and *nwukwu-la-to*; this prediction is borne out. The predicted meaning for (51a), shown in (52a), is semantically consistent. By contrast, the predicted meaning for (51b), given in (52b), is semantically contradictory.

- (51) a. Na-nun *nwukwu-na* manna-l swu iss-ciman, *nwukwu-la-to* manna-l
 I-TOP who-DISJ meet-REL way exist-but who-DISJ-ADD meet-REL
 swu-nun eps-ta.
 way-TOP NEG.exist-DECL
 ‘I can meet anyone, but I can’t meet ANYone.’

- b. #Na-nun *nwukwu-la-to* manna-l swu iss-ciman, *nwukwu-na* manna-l
 I-TOP who-DISJ-ADD meet-REL way exist-but who-DISJ meet-REL
 swu-nun eps-ta.
 way-TOP NEG.exist-DECL
 ‘I can meet ANYone, but I can’t meet anyone.’
- (52) a. $\forall x \in D : \Diamond_{\text{MEET}}(I, x) \wedge \neg \forall x \in D^\uparrow : \Diamond_{\text{MEET}}(I, x)$
 b. $\# \forall x \in D^\uparrow : \Diamond_{\text{MEET}}(I, x) \wedge \neg \forall x \in D : \Diamond_{\text{MEET}}(I, x)$

Finally, I account for the grammaticality of *nwukwu-la-to* in non-negative DE environments by appealing to the locality condition associated with *-to*. I illustrated this with (53), where *nwukwu-la-to* appears in the restriction of *every*; the analysis extends straightforwardly to the conditional case as well.

- (53) *Nwukwu-la-to* manna-n motun salam-un yonguyca-i-ta.
 who-DISJ-ADD meet-REL every person-TOP suspect-COP-DECL
 ‘Every person who met anyone is a suspect.’

A possible LF for (53) is given in (54). EXH_{FCI} satisfies the locality constraint, and EXH_{ADD} takes effect from across the DE operator. From the perspective of EXH_{ADD} , *nwukwu-la-to* is in a DE environment and therefore licensed.⁹ (The universal quantifier intervenes between EXH_{ADD} and *nwukwu-la-to*.)

- (54) $\text{EXH}_{\text{ADD}} [\forall x : \text{EXH}_{\text{FCI}} [\exists y \in D : \text{MET}(x, y)] \rightarrow \text{SUSPECT}(x)]$

Crucially, this LF is unavailable for *nwukwu-to*, which involves only a single layer of exhaustification.

5 Conclusion

This paper focused on Korean *-lato*, which combines with indefinites to form a class of PSIs displaying a mixed NPI-FCI profile. On the one hand, *nwukwu-lato* patterns like an NPI in that it is licensed in non-negative DE environments—a surprising property given that Korean NPIs, e.g., *nwukwu-to*, are known to be strong. On the other hand, *nwukwu-lato* behaves like an FCI under possibility modals and imperatives, and it does so with a notably more ‘emphatic’ flavor than the regular FCI *nwukwu-na*. To account for this dual behavior, I developed an exhaustification-based analysis in which *-lato* decomposes into the disjunction *-la(-na)* and the additive *-to*. The resulting semantics becomes fully transparent once we assume a particular scope configuration for stacked exhaustifiers and reconsider the weak versus strong NPI distinction.

⁹To ensure that the contribution of EXH_{FCI} does not interfere with the DE status of this environment, it may be necessary to replace EXH with its presuppositional variant *pex* (Bassi et al. 2021).

However, several issues remain open. In particular, the pragmatic scale associated with *-lato* when it attaches to regular NPs receives no immediate explanation under an exhaustification-based approach. Further work is needed here, especially in comparison with alternative theories of NPIs (cf. Giannakidou & Yoon 2016). Additional insight may also come from cross-linguistic investigation of morphologically and distributionally similar items, such as Japanese *dare-demo*. Nakanishi (2021) analyzes *dare-demo* as an unconditional with a clausal structure, a perspective that may prove relevant for understanding *-lato*. I leave a fuller investigation of this possibility to future research.

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