The Syntax and Prosody of Discourse Markers in Korean*

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Jung, Sihun and Sung, Moonhyun. 2019. The Syntax and Prosody of Discourse Markers in Korean. Studies in Generative Grammar, 29-1, 17-43. This paper provides an experimental approach following Burton and Matthewson (2015)’s storyboard method, to elicit natural data concerning the distribution of Sentence Final Particles in Korean. The data obtained in the experiments in this study were analyzed with Praat, offering thus an account encompassing prosody. We determine using previous work on the Speech Act layer (Speas and Tenny 2003, Heim et al. 2014, 2016) the different functional projections of discourse marking in Korean, and propose a syntactic account of why these particles may not stack. Our contribution is twofold: First, we present new data empirically confirming and complementing traditional semantic categorizations of discourse particles in Korean, and secondly we offer an enriched syntactic account of these particles namely by adding an intonational dimension. To conclude, we present a parallel between Cantonese and Korean in their abilities to stack overt sentence final morphemes. We point to future research that can combine the discourse, phonology and syntactic interfaces to solve this puzzle.

Keywords: speech act, discourse marker, sentence final particle, Korean intonation, syntax-phonology interface, storyboard experiment

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1. Introduction

The Minimalist Program has opened up new avenues of research by overcoming the formerly strict distinctions between syntax, phonology and semantics, a former division of fields also previously known as the T-model of grammar (Chomsky 1995). Recently, so called post-syntactic phenomena such as speech acts have been brought under new light, with analyses driven by syntactic structures. Specifically, the syntactic integration of discourse elements into the left-periphery – and higher – has been a fruitful area of research with rich cross-linguistic data. Revitalizing Ross’ performative hypothesis (1970), many researchers have proposed syntactic hierarchies for this region of the syntax, also known as the Speech Act Layer. The growing literature in this area suggests that we are still in need of a fine-grained analysis of the speech act layer to properly represent speech acts and relevant discourse information (Speas and Tenny 2003; Haegeman and Hill 2013; Heim et al. 2016). A common problem encountered during the study of this particular interface is the strong interaction of sentence final particles with stable intonational patterns. A syntactic analysis of the discourse-syntax interface thus necessitates a treatment of prosody. Despite this, there is a lack of a systematic documentation detailing the distribution of these particles, intonational elements, and their corresponding discourse contexts. Specifically, we take inspiration from Pierrehumbert and Hirschberg 1990’s style of analysis regarding intonation. Indeed, the present paper presents a morphemic analysis of phrasal, discourse intonation, a view we corroborate by detailing their interaction with sentence final particles. In this paper, we also seek to remedy this lack of an empirical base by using natural elicitations of various discourse contexts in Korean. We then lay out the structure accounting for the patterning of these particles with intonational morphemes.

Korean, like other agglutinative languages such as Makah and Japanese, has a rich array of suffixes or sentence-final particles for various discourse situations —conveying illocutionary forces and configuring speaker-addressee relationships. Other than prescriptive grammar books, there has been little research coming from a generative perspective as to the use of sentence-final particles, let alone an experimental treatment of them. Still, the existence of this traditional grammatical categorization indicates the intuitive knowledge of Korean that these particles are indeed highly grammaticized in Korean. In another strain, there has also been discourse analytic work namely with conversation analysis approaches to some of the sentence final particles mentioned in this paper (Kim 2004). This situation clearly represents a fertile ground to advance frameworks that further

The goal of this paper is twofold. First, we report the distribution of sentence final speech act particles as elicited via a storyboard experiment (following Burton and Matthewson 2015), and second, we propose a syntactic structure that adequately accounts for the suffixes and intonational patterns. The prosodic facts presented in our research also offer evidence towards the analysis of intonations as morphemes in the overt syntax (Pierrehumbert & Hirschberg 1990). Our results and analysis corroborate the need for a syntactic treatment of phenomena previously thought to be post-syntactic. This paper is organized as follows: section 2 presents a short review of the work this paper builds on, and section 3 presents our methodology. Section 4 will introduce the results of the experiment with section 5 offering our analysis of the results. Section 6 briefly discusses the possibility of a typology between tonal languages and non-tonal languages, especially concerning sentence final particle stacking. Finally, section 7 concludes the paper.

2. Literature Review

2.1 The speech act layer analysis in the minimalist program

Deep Structure and Surface Structure dispensed with, the minimalist program enables purported root phenomena to be dealt with in syntax. Despite theory-internal limits to fully integrate PF and LF, the interpretation and realization of intonational patterns and discourse markers can follow from the unifying language computation in syntax as long as the information is adequately encoded via features in syntax. Therefore, the issue is how to represent the speech act layer using syntactically-transparent constructs such as features.

Since Speas and Tenny (2003), the possibility that discourse information is syntactically generated and thus syntactically constrained has risen. As a rekindled exploration of the ideas presented by Ross (1970), Speas and Tenny successfully justifies a highly articulated syntactic treatment of the speech act layer by drawing a strong analogy between argument structure and
discourse-participant structure. We recognize and agree with Speas and Tenny's argument that there is a robust analogy to be drawn between grammatically-relevant pragmatic roles and syntactic structure. To disassociate the pragmatic component from the syntactic component thus, would involve relying on an explanation leaning too much on coincidence. (1) below presents the full structure of a declarative sentence proposed by Speas and Tenny (2003); combining the Sentience phrase and the Speech act phrase:

(1) Speech act Layer and Sentience Phrase (Speas and Tenny 2003)\(^1\)

For the interrogative structure that will be used in this paper, the HEARER is promoted to a higher position, c-commanding the UTTERANCE. In Speas and Tenny (2003)’s words: “In a question it is the HEARER who possesses the knowledge relevant to evaluating the UTTERANCE CONTENT.” (2003; 7).

Chronologically following Speas and Tenny’s proposal, Heim et al. (2014, 2016) have since depicted the interplay between speech act phrases and prosodic elements. In particular, Heim et al. (2014) is of interest in that they touch on tonal languages. Based on Cantonese and Medumba — respectively Sinitic and Bantu languages with lexical tone — point to tonal languages “in which lexical

contrast and intonation are competing for the same resource, namely pitch to convey information.” The paper then correlates increased presence of particles in tonal languages as a substitute to sentence intonation, further materializing the rationale for a syntactic treatment of discourse elements. (2) underneath shows the grounding layer presented by Heim et al. (2014):

(2) The grounding layer (Heim et al. 2014)

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Call on Addressee

Intonation/Particle  Speaker Commitment

Intonation/Particle  CP

P
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2.2 Cinque’s analysis

Cinque’s analysis (1999) of the functional heads opens up the possibility of utilizing English sentence-initial adverbs as functional heads that encode sentential Mood, such as deontic or epistemic mood, in the left periphery. Citing data like (3), Cinque argues that Korean left-periphery functional heads are ordered as in (4).

(3) a. ku pwun-i    cap-hi-ess-ess-keyss-sup-ti-kka?
    that person-nom catch-pass-agr-ant-past-epistem-agr-evid-q
    ‘Did you feel that he had been caught?’

b. Minswu-nun    ttena-ss-te-kwun-yo!
    M.-top     leave-past-evid-eval-polite
    ‘I noticed Minswu had left!’

(4) Speech Act > Evaluative > Evidential > ... > TP

While this hierarchy has been corroborated by a variety of further studies and cross-linguistic data (Cinque 2006), the analysis of the Korean data has had little inspection vis-à-vis how these suffixes are actually selected depending on discourse situations. In other words, sentences like (3a) are highly engineered to exhibit and validate the complex structures of the left-periphery. Furthermore, the sentence final particles surveyed in this paper are ultimately in a higher position compared
to the left-periphery of Cinque. Thus, we will not be directly concerned with Cinque’s adverbial hierarchy. In effect, this paper only covers what could be called the ‘far-left periphery’, or what is called in the literature the speech act layer. Accordingly, we took a different approach in procuring our data. If the speech act layer is indeed, in following the neo-performative literature, the syntactic structure that interfaces with discourse, then the collection of data best be embedded in believable discursive situations, and furthermore performed by subjects. Ultimately, we take the actual performance of a structure to be the best way to validate its grammaticality especially as we relate to discourse structure. Moreover, the analysis of natural performances allowed us to detect intonational elements in these constructions. Therefore, while we assume the adverbial structure laid down by Cinque, we also turn to simpler, more readily elicitable utterances to enable an experimental confirmation of the speech act hierarchy.

3. Methodology

Our experiment consisted of 30 participants, all undergraduate students of Sogang University in Seoul, South Korea. Of those participants, 7 were male and 23 were female. The participants were screened to be speakers of Seoul Korean. In order to achieve this, we questioned participants beforehand on their native region of residence (born and raised). We also surveyed the native regions of their parents in the process. We gave preference to participants from Seoul and the metropolitan area including Incheon. During analysis of the data, 6 female informants were excluded from the pool as they clearly did not speak Seoul Korean, with the parents from regions other than the Seoul metropolitan area. The remaining 24 informants’ data were analyzed; 7 of them were male and 17 of them were female.

Each participant was presented with a total of 4 different storyboards; A, C, D and E. The storyboards consist of a single cartoon tier composed of 3 borderless panels. The storyboards feature Mary, John, Peter and a dog. Informants were only given basic background information on these storyboards: that these characters live in the same building, that they are friends and that Mary suspects – to the exception of storyboard A – that John has a new dog. Each storyboard concerns itself with John’s ownership, or non-ownership of a new dog, and the circumstances under which Mary discovers whichever to be true. Although the storyboards do not have explicit empty speech balloons, each panel is meant to be enacted by informants and clearly features oral action from at least one of the
characters in each panel. After having been familiarized with each storyboard’s plot, the informants were asked to repeat the story in their own words, enacting in person each invisible speech balloon in each panel, and adding narration wherever they deem it natural. Narration occurred naturally at the transitions of panels. The informants were told to recount the storyboards as if to talk to a friend, so even as directed to the experimenter in the recording room, all spoke in casual, non-honorific Korean. Of these invisible speech balloons, the last speech bubble is the target utterance we want to elicit. The recordings of the speech balloons before the last one were not considered in this experiment. The last speech balloon is in the third and last panel, and are in all cases – A, C, D and E – instances of Mary either discovering that John indeed has a new dog, or instances where Mary asks John, under her suspicions, of his possible ownership of a new dog. A summary of the storyboard’s plots is given in (5):

(5) Storyboard A, Neutral interrogative elicited: Mary hasn’t seen John in a long time, and wonders how he is doing. She sees him moments later with a dog on a leash. Mary asks John a question to confirm that this is his dog.

Storyboard C, No hearsay, but with direct evidence: Mary crosses Peter in the hallway. Mary asks Peter whether John has a new dog. Peter doesn’t have this information. Later on, Mary sees John walking a dog. She asks John a question to confirm her previous question to Peter.

Storyboard D, Positive hearsay, but with no direct evidence: Mary crosses Peter in the hallway. Mary asks Peter whether John has a new dog. Peter confirms that John indeed has a new dog. Later on, Mary meets John walking alone. She asks John a question to confirm the hearsay she has heard from Peter.

Storyboard E, Positive hearsay, with direct evidence: Mary crosses Peter in the hallway. Mary asks Peter whether John has a new dog. Peter confirms that John indeed has a new dog. Later on, Mary meets John walking with a dog. She asks John a question on his dog ownership.

The experiment was divided into two parts, but before Part 1 began, each participant was familiarized with the 4 storyboards by having the experimenter run through them in their presence. Each separate storyboard A, C, D and E was

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2 Browse https://syntaxofspeechacts.linguistics.ubc.ca/storyboards/ for a complete library of UBC eh-lab’s library of storyboards, including the storyboards we used in this experiment.
given on a PPT slide independent of others and with no indication of type (A, C, D and E). The slides were randomized for both Part 1 and Part 2 for every informant. The consideration for the workload of informants having to perform 4 separate scenarios of storyboards two times over, led us to deemphasize the benefits of including an equal number of fillers in the experiment. Thus, we did not include other unrelated storyboards in our experiments. Furthermore, although the materials are fashioned in such a way as to be experimental in nature – insofar as there was a targeted treatment – we follow Elfner (2015; 1172) in acknowledging that this type of work somewhat blurs the line between traditional fieldwork and controlled experimental work.

In Part 1 of the experiment, the informants were asked to tell the storyboards in their own words, until the last panel. In the last panel, the participants were presented with the option of three sentence final particles (hereafter, SFPs) from which to choose to construct their final enacted speech for Mary. The three choices were *ni, kwuna, and tanye*. Some examples of target sentences using the optional particles are given underneath:

(6) ne kay khiwu-n tanye?
   2sg. dog have-prs tanye
   ‘I heard you had a (new) dog?’

(7) ne kay khiwu-nun kwuna?
   2.sg dog have-prs kwuna
   ‘(I see) you have a (new) dog’

(8) ne kay khiwu ni?
   2sg. dog have Q
   ‘Do you have a (new) dog?’

The order of presentation of the options was randomized for every participant and for each storyboard they were presented with, so that no order of the options came more often for a particular storyboard type.

In Part 2, the informants were given full control over their telling of the stories, and the last target utterance could be uttered without heed to the previous three options given in Part 1. Informants were explicitly told before starting Part 2 that they could use different SFPs from what was offered in Part 1. This time the whole performance was recorded. If the informant stuttered during the performance or simply wanted to try again, they were free to do so
and only the last recording was kept. All responses were recorded and processed on Praat. The tonal transcriptions were done separately by both authors, and then combined. Rare instances of disharmonious judgments were discussed and easily resolved. We only assumed the existence of H and L tones, following the autosegmental model (Ladd 2008). Much of our concerns and considerations in exhibiting select, sample pitch tracks throughout the paper and concerns over inter and intra-speaker variation in pitch tracks are largely undiscussed in this paper. We follow Elfner (2015) in stating those concerns, but leave the specifics to future research.

We proceeded with the following hypotheses. Firstly, that the 
particle in Korean is a neutral question marker, and it will show a global distribution in all interrogative utterances. Second, Korean makes a morphological distinction between direct evidence and hearsay – indirect evidence. Thirdly, we expected at least two different types of sentential intonation, based on the plots of the storyboard: namely, one intonation for neutral questions in the ‘all-new’ context, and another intonation for a request for confirmation. We were indeed able to discern within our data either a simplex pitch accent H% or a complex contour (LHL)% , both realized on the last syllable of the SFP. We also predict that different compositions of pitch accents with kwuna and tamyegen will each have different meanings and uses across discourse situations.

4. Results

The results for the distribution of sentence-final particles for each Part of the experiment is shown in the tables below.

<table>
<thead>
<tr>
<th>Part 1</th>
<th>A</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>ni</td>
<td>13</td>
<td>16</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>kwuna</td>
<td>10</td>
<td>8</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>tamye/tamyense</td>
<td>1</td>
<td>0</td>
<td>20</td>
<td>11</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part 2</th>
<th>A</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>ni</td>
<td>13</td>
<td>7</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>kwuna</td>
<td>3</td>
<td>9</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>tamye/tamyense</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>others³</td>
<td>8</td>
<td>8</td>
<td>7</td>
<td>5</td>
</tr>
</tbody>
</table>

<Table 1>
The results indicate a number of encouraging issues to be discussed. Firstly, the global distribution of the SFP *ni* is in accord with our analysis. The *ni* particle appeared the most as a response for A in both Parts 1 and 2. Storyboard A was our neutral treatment; thus we confirm that *ni* is indeed the neutral question particle in Korean. The particle *ni* also appeared the most for C in Part 1. Nonetheless, its distribution was reduced in Part 2 in favor of the more discourse-charged particle *kwuna* which aligns with our hypothesis that direct evidence in discourse will be marked by a particle in Korean. The fact that informants converged out of the neutral SFP *ni* towards more discourse-marking particles in Part 2 – the free elicitation – and not the other way around, is meaningful. The discourse situation does indeed influence directly the choice of sentence-final particles in Korean. For storyboards type D, both Part 1 and Part 2 saw a higher *tamye* concentration. Storyboard E showed an interesting 50:50 distribution between *kwuna* and *tamye*, a result we will discuss in the next section. Strikingly, *tamye* never appears for C and only appeared once for A. An analysis on the interaction of these SFPs with intonation will be given in the next section.

5. Analysis

Taking inspiration from the analysis of pitch accents as given in Pierrehumbert and Hirschberg (1990), we propose that Korean uses a variety of SFPs conjointly with pitch accents to compositionally produce stable meanings for discourse. First, we may distinguish two intonational patterns across our data: a simplex H% and a complex (LHL)%. These tones are always realized on the last syllable of the

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3 As Part 2 was a free elicitation without prompted morphemes given as options, we varyingly obtained other morphemes. The other morphemes obtained are given in Table 2.
SFP. In the narrow syntax, these intonational morphemes are base-generated in the higher Sa* head of (1), for reasons we will present shortly. These two pitch contours coupled with the appropriate SFPs create the correct speech act for each storyboard type. These intonations are taken to be hosted in the Call on Addressee projection in Heim et al (2014)’s sense. The layers underneath are what govern the choice of SFP to be used. For instance, we take ni to always take a H% tone to form the neutral interrogative speech act in Korean. A pitch track is given in Fig. 1:

![Pitch Track](image)

We agree with Heim et al. (2014)’s reasoning that overt particles must first attach within the syntactic structure before intonational morphemes. According to Heim et al. this ensures that the rising intonation in Canadian English attaches to the eh particle and not “the sentence as a whole” (2014; 14). Heim et al. (2014)’s observation can be uncontroversially noted with the simple illustration in (9):
The examples in (9) show that what can be presumably analyzed as the yes/no-question intonational morpheme H will always attach to the last syllable of an utterance, no matter what the material exactly is. For *ni* we ensure the same behavior by assuming that the morpheme heads C, and by having intonations in Korean head the higher speech act head. The following structure is assumed to account for the distribution of sentence-final particles we have elicited:

\[(9) \quad H\]

Do you know Peter?
You know Peter yes?
You know Peter right?
Do you know Peter by any chance?
You know Peter don’t you?

In this complete hierarchy of the speech act layer, the CP in Korean houses the neutral interrogative morpheme *ni*. Taking CP as its complement, the Evid head houses the overt morpheme that expresses the type of evidence available to the speaker. The evidence itself comes from the discourse situation directly, and is situated in the Spec position of the Evid phrase. Taking Evid as its complement is the Eval head. This head encodes the attitude of the Speaker (hereafter S) towards the utterance. This paper is not concerned with morphemes that are housed here. Finally, the SaP with its extended shell possesses two head positions, the lower Sa head and the higher Sa head. Of these, the higher Sa head houses the intonations that appear on the last syllable of the SFPs in Korean. The SaP we adopt from Speas and Tenny (2003), is taken in our hierarchy to have essentially the same role as the CoA in Heim et al. (2014). Thus, intonation in Korean will be crucial in actually bringing about action from the Addressee (hereafter A). A detailed structure for Korean is presented in Figure 7. The following subsections will clarify the motivations behind this structure by relating the facts that come with each storyboard elicitation.

\[\text{(10) SaP} > \text{EvalP(SentienceP)} > \text{EvidP(Sentience*)} > \text{EpisP} > \text{CP}\]

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4 EpisP = Epistemological Phrase.
5.1 Storyboard A

Storyboard A was our neutral treatment for the experiment. As such, we have elicited the highest number of the neutral particle *ni*, with its default pitch accent H% as exemplified in Fig. 1. In alternation with this option, especially for Part 1, seems to be the use of *kwuna* in some participants. Under close examination of the pitch tracks of *kwuna* users in storyboard A, we determine the complex pitch accent (LHL)% on the last syllable *na*. Fig. 2 and 3 show participants 15 and 12 performing this contour.

![Pitch track diagram](image-url)
In the pitch tracks observed in figures 2 and 3, the tonal targets L, H and L are met in sequence during the prolonged syllable na. We analyze this pitch contour as the neutral pitch of the SFP kwuna. This default intonation indicates that S has processed new discourse information, and wants confirmation from the A. In this case, the sight of John walking an unfamiliar dog is adopted into S’s set of beliefs under the assumption that the dog is John’s new dog. S simultaneously wants A to confirm this. Thus S demands confirmation from A as to the truth of the proposition, much like the Canadian eh in (Heim et al. 2014). Thus, storyboard A is met with either: a neutral question using ni, or a ‘demand for confirmation kwuna(LHL)%’ utterance. Ultimately, we identify the (LHL)% contour performed on kwuna as a ‘demand for confirmation’ since in essence it is a question with a specific end, namely, one that is to instigate in the hearer a confirmation for a distinct proposition that is part of the S’s set of beliefs. When kwuna is performed as part of a monologue however, the speech act layer would arguably not contain an addressee proper. For monologues, there are two conceivable ways of representation: Firstly, the HEARER is absent from the SaP, and secondly the HEARER is simply replaced by the SPEAKER itself (refer to Figure 7). In both cases it could be argued that kwuna(LHL)% loses its quality as
a demand for confirmation, and rather takes on the property of a declarative sentence. The confirmation of this however requires a prerequisite that is outside the scope if this paper: confirming the natural performance of a kwuna(LHL)% as part of a monologue.

5.2 Storyboard C

Storyboard C contains a plot device in which Mary asks Peter about John’s ownership of a dog. From storyboards C to E, Mary is now configured to have a suspicion that John owns a new dog. In C, Peter doesn’t know the answer to the question, and without any more knowledge on the matter, Mary meets John walking a dog in the street. Since Mary has had no further information from which to base her suspicions – Peter failed to answer her – there is the possibility that subjects will still resort to using a neutral interrogative particle to John upon their meeting. Nonetheless, the threefold increase in the use of kwuna in Part 2 of the experiment for C remains unexplained. Again closer examination of the pitch tracks of Part 2-C reveals that some of the kwunas are performed with a different pitch contour from that of kwuna(LHL)% performed for storyboard A. These kwuna are performed with a simplex rising pitch H% as shown in Fig. 4.

Unlike storyboard A where participants uniformly performed kwuna(LHL)%, storyboard C performances contain instances of kwuna with a H%. Recall that the difference between storyboard A and C is the fact that Mary is configured for suspicion in C, and that the topic of John’s dog ownership – although unresolved due to Peter’s ignorance on the matter – was raised before Mary meets John in C. Crucially, the topic of John’s ownership of a dog is by no means completely new to Mary, as she has had (i) a suspicion and (ii) talked about the matter with someone else previously. We analyze this difference in pitch contour for kwuna, along with the increase in use of kwuna compared to ni use in A, to reflect that contextual difference in storyboards A and C. To distinguish the default kwuna(LHL)% in storyboard A from C’s kwunaH% we call this the discourse kwuna. Arguably this kwuna is the type that has been described in the traditional literature most often, where the particle is used to indicate that S has accepted a belief that is not completely new.
5.3 Storyboard D

Storyboard D is the discourse context where Peter confirms that John owns a new dog, but where Mary meets John alone. Thus, Mary is in possession of hearsay but not of direct evidence of John’s dog ownership. As expected, D thus entailed the highest use of the particle tamye, a particle traditionally known for expressing hearsay. In Part 2 where informants were freely elicited, some informants performed the allomorphic form of tamye: tamyense. Expectedly so – recall (9) – the long form tamyense shows the same pitch contour as tamye as illustrated by Figures 5 and 6, and indeed is still realized on the last syllable which is now se.

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5 In this case, we did not entertain nor suggest to subjects that they could choose whether Mary decided to believe Peter’s hearsay. By default thus we assume that participants proceeded with the expectation that Peter was truthful and Mary believes his words.

6 Apart from a selectional difference a reviewer kindly pointed out, namely, vis-à-vis the honorific marker -yo (-yo only selects for tamyense) we take the two SFPs to be essentially identical in their semantic content and syntactic behavior.
Examination of the pitch tracks of Figure 5 and 6 show that there is a great resemblance between the (LHL)% complex contour of *tamye* and previous iterations of the default *kwuna* for storyboard A. We believe thus that the demand for confirmation stays the same in both performances and that this is due to the same pitch contour. The difference in particle thus indicates independently the different discourse context. There is in effect, a division of labor between intonation and SFPs in Korean; each occupying different discourse meanings.
5.4 Storyboard E

Storyboard E is our most discourse-charged treatment. It figures both hearsay evidence and direct evidence. Thus, Mary has heard from Peter the fact that John has a dog, and she is seeing the dog while she asks her question to John. Interestingly, the distribution of tamye and kwuna finds a rough 1:1 allotment. This optional alternation between particles indicates (i) that these particles cannot be stacked to indicate both hearsay and direct evidence, and (ii) that informants do not seem to have a preference over which type of evidence to prioritize in discourse. We derive this optionality from our syntactic analysis of the SFPs in Korean, namely by the obvious choice of placing these SFPs in the same syntactic position; the Evid head.

5.5 The Speech act layer in Korean: The big picture

By observing the compositional use of a stable intonation and SFP in marking separate projections in the discourse interface, we have shown that indeed the intonational contour that is found on the last syllable of an SFP in Korean has to be treated as a separate morpheme. In particular with respect to the free-varying allomorphs tamye and tamyense, the intonation exhibits a predictable
behavior, along with a stable semantic meaning. Borrowing from Speas and Tenny (2003), we then establish the following head-final structure for Korean in Figure 7:

Following the ideas laid down in Heim et al. 2014’s grounding layer we adopt the hierarchy Call on Addressee > Speaker Commitment. We propose that the higher Sa head encodes the Call on Addressee. Thus, the H and LHL contour indicate respectively, the “answer Proposition” and “confirm Proposition” calls. Consequently, the *ni morpheme that is heading the C head simply indicates that

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A reviewer has suggested that in Figure 7 we sever the base positions of the two intonations H% and LHL%, on the lower and higher Sa heads respectively. This call relies on the idea that the source of confirmation always has to be in the specifier position of the Sa head intonation. However, we disagree that the source of confirmation for LHL% is always the speaker. As quoted from Speas and Tenny (2003), the structure in figure (7) is fundamentally a question with the HEARER promoted to a position that can evaluate the proposition. Thus, the confirmer in both cases (H and LHL%) cannot be the speaker, but structurally only the HEARER.
the speaker lacks the necessary knowledge to evaluate the proposition $P$. The separation of the $ni$ particle and the intonation $H$ into pure CoA and a type of Speaker Commitment is roughly in line with the structure of the grounding layer, whereby in our structure the SaP would encode CoA, and the EvalP complement structure corresponds to the Speaker Commitment phrase. Furthermore, the separation of the particle from the intonation in Korean allows us to account for other observed facts in the language. In many cases, what is traditionally viewed as a question particle in Korean is actually optional for questions, especially in casual speech. Simply adding a rising intonation suffices. Secondly, there are cases where the question particle appears without the corresponding $H$ tone, creating a ‘question’ without the expectation of an answer. This is illustrated in (11):

\begin{verbatim}
(11) yelepwun annyeng-ha-sip-ni-kka?
    Ladies.and.gentlemen good-do-hon-IND-Q?
‘Hello ladies and gentlemen’
\end{verbatim}

(11) is a standard formal greeting addressed to a plural audience. The formal question marker $kka$ does not demand an answer from the audience; it is not realized with the $H$ tone Call on Addressee. The dissection of SFPs into units of smaller meanings is an approach already taken by other researchers. For example in Li 2006, the purported array of Cantonese SFPs – estimated at as many as 90 by Leung (1992) – is diminished into a total of 11 fundamental semantic units, each assigned a functional projection. Crucially, Li (2006) treats tonal elements as having separable discourse meaning and possibly that they stand as separate morphemes, though the possibility is not explicitly voiced. Heim et al. (2014) however, treated Cantonese SFPs along with their accompanying tones as whole particles that “span[s] across two syntactic heads” (11), the two syntactic heads referring to the heads that project Heim et al. (2014)’s Call on Addressee and Speaker Commitment phrases. If Li (2006) is correct, Cantonese may not be so different from English and Korean.

Additionally, we pointed to the fact that there was a division of labor between intonational contours and evidence-marking SFPs in Korean. Thus, $tamye$ and $kwuna$ are realized within the Evidence phrase, as indicators of the specific circumstances of the utterance content – in this case the evidence type available. As we said earlier, the intonation morpheme in Korean exclusively indicates the pragmatic force of a sentence – Call on Addressee. Namely, we have seen that $H%$ incurs a neutral question that needs answering, while $(LHL)%$ is a demand
for confirmation. We have also noted in section 5.4 that Korean does not allow stacking of *tamye* and *kwuna* to account for the richness of evidence types. This is simply accounted, as it follows from the fact that these particles share the same position syntactically. This same prediction is mentioned in Law (1990), for segmental particles in Cantonese that occupy the same heads (163). More important and perplexing perhaps is the fact that neither *kwuna* nor *tamye* can appear stacked with *ni*. Although these particles head separate projections, they may not co-occur. The problem of the unavailability of SFP stacking in Korean is a subject that is beyond the scope of this paper. However, the next section briefly discusses the possibility that SFP stacking may be strongly regulated by a prosodic requirement specific to SFPs. Meanwhile, the table underneath summarizes the different particles and intonations that have been discussed.

<table>
<thead>
<tr>
<th>Morpheme/Form</th>
<th>Syntactic Head</th>
<th>Evidence type</th>
<th>Speaker Commitment</th>
<th>Call on Addressee</th>
</tr>
</thead>
<tbody>
<tr>
<td>-ni</td>
<td>C</td>
<td>-</td>
<td>'I lack knowledge to evaluate P'</td>
<td>-</td>
</tr>
<tr>
<td>-kwuna</td>
<td>Evid.</td>
<td>direct</td>
<td>'I noticed this evidence'</td>
<td>-</td>
</tr>
<tr>
<td>-tamye</td>
<td>Evid.</td>
<td>hearsay</td>
<td>'I heard relevant evidence'</td>
<td>-</td>
</tr>
<tr>
<td>H%</td>
<td>Sa</td>
<td>-</td>
<td>-</td>
<td>'Answer the Proposition'</td>
</tr>
<tr>
<td>LHL%</td>
<td>Sa</td>
<td>-</td>
<td>-</td>
<td>'Confirm the Proposition'</td>
</tr>
</tbody>
</table>

6. Stacking SFPs: A comparison between tonal and non-tonal languages

As can be seen in Cinque’s data in (3), Korean is — as it should for an agglutinative language — able to stack a variety of suffixes without much constraint. When particles come higher than the CP layer however, as we have seen with the SFPs in figure 7 above, they may no longer stack freely. Why Korean suddenly loses its potential as an agglutinative language in this region of the syntax is mysterious. On top of this fact, Cantonese seems to be able to stack several SFPs in the form of sentence final clusters. Law (1990) relates these facts extensively, and presents a prediction on the list of particles that may
co-occur in an entire appendix consisting of 230 combinations that are in the vast majority, attested forms. For lack of space, we relate in (12) underneath, a subset taken directly from Law's data (160). 8

(12) (Some) Well-formed particle clusters (Law 1990; 160)

'ge tim la/lak/lo' 'tim ge la/lak/lo'
'ge tim le 13' 'tim ge le 13'
'ge tim za' 'tim ge za'
'ge tim ma 33' 't' im ke ma 33'

Far exceeding this small list, Cantonese allows the regular stacking of SFPs up to four at a time. Since Law (1990) predates the Speas and Tenny (2003)'s structure presented previously in (1), she situates the various particles along an articulated structure that does not exceed the matrix CP (Law 1990; 153). Allowing Law's account to encompass the speech act layer, the combined structure adequately houses the necessary stacking particles. Indeed, as long as segmental particles occur in separate projections, and excepting the semantic awkwardness some compositions create, Cantonese allows particles to stack. In this section, we briefly point to a parallel that could possibly explain why the same speech act layer structure could give rise to such language variation as seen between Cantonese and Korean. Specifically, we consider a discourse constraint that may be requiring SFPs to be properly associated with sentence final discourse intonation. That is, we consider the existence of a pressure that arranges for SFPs and discourse intonation to be exhaustively associated to each other. We remain agnostic as to whether the constraint is syntactic or phonological in nature. Thus, a mechanism of this kind of relationship may be realized by either a checking of features in the Speech act layer, or by contiguity requirements that must be met in the syntax (Richards 2016). One can entertain the possibility that SFPs and discourse intonation particles require a Contiguity relation, analogous to Probe-Goal Contiguity in Richards (2016). If Probe-Goal Contiguity must be satisfied within each phase, the Speech act layer above C would present the domain in which this relation must be met between SFPs and intonational morphemes. Additionally, while the Probe-Goal Contiguity relation of, for example, C and a wh-phrase may be erased after spell-out, a Probe-Goal Contiguity relation born in the speech act layer would be much more transparent across languages due to

8 For a compendious review of Cantonese sentence final particles and the nuances they convey, see Sybesma and Li 2007.
the fact that it is the last phase to be spelled-out. This approach may start to open venues through which we may account for language differences regarding SFP stacking. More specifically, we would be looking for a constraint that would result in the following behavior:

(13) If a derivation contains both types of discourse-marking morphemes within the speech act layer – intonational (possibly along with tone) and overt SFP – they must exhaustively be assigned to each other at spell-out.9

The result of this constraint can be summarized as follows:

(14) Every SFP uttered must have an intonational morpheme or a tone realized on it.10

If a derivation contains no SFP and only one intonation, as in the first sentence of example (9), it would be exempt from abiding to the behavior in (13). If both types, intonational and overt morpheme are present in a derivation, the number of SFPs and intonation must first match. Then, both types of discourse markers must associate in a certain way; the precise mechanism of association being obscure, we can descriptively state that it is by having the intonation be realized on the SFP. This behavior can be rephrased as SFPs having specific prosodic needs with regards to meaningful discourse prosody. If lexical tone can be made to satisfy the prosodic needs of SFPs, then the stacking behavior of Cantonese can be explained without changes to the general structure of the speech act layer. Each lexical tone marks an SFP, providing that every SFP is satisfied, thus allowing the compositionality observed in Cantonese. In Korean on the other hand, intonation is a morpheme represented in the syntax, crucially on a single

9 A reviewer pointed out that when tamyense co-occurs with -yo, only the final -yo seems to receive intonation. However, the purview of our experiment does not include -yo because its sociopragmatic nature may distract the focus of this research on syntax and prosody. (See Kim & Yim 2014 for a comprehensive study on -yo in Korean) It remains to be seen in future study how precisely SFPs and intonation interacts with honorific discourse situations, and whether (13) would still be descriptively adequate.

10 It has been pointed out that cases of right-dislocation in Korean would not align with our tentative constraint. However, lack of consensus on the definition of Korean right dislocation has led us to postpone empirical experiment on prosodic shifts of SFPs. Moreover, it would be almost impossible to elicit utterances with right dislocation naturally because it has been pointed out that right dislocations can be afterthoughts (Lee 2011).
head. This situation provides that there can only be one SFP per utterance. In Cantonese however, lexical tone—while seemingly fulfilling similar discourse-sensitive meaning to Korean intonational morphemes—is not represented in the narrow syntax. Citing Beckman and Pierrehumbert (1986), and Pierrehumbert and Beckman (1988), Law (1990) draws attention to the “close parallelism between the H boundary tone and Cantonese tonal particles” (84). Li (2006) also discerns five tones that have stable discourse meaning in Cantonese, an expanded inventory from Law (1990)’s original three-way classification; the echo question particle, the strengtheners and the weakeners. Returning to Law (1990), it is simply said that “tonal particles do not occupy any syntactic position.” The absence of lexical tone in Cantonese syntax, while they retain similar characteristics to intonational morphemes in Korean, implies that a purely syntactic account of such a behavior of association as in (13) may be difficult. The intonational requirements of SFPs would have to be materialized and satisfied later in PF, or else by mechanisms that permit phonological requirements early in the narrow syntax akin to contiguity theory. Hopefully, this juxtaposition of Korean and Cantonese, coupled with future research into the universals of the speech act layer across languages, will lead to a generalization that points to a typological tendency for SFP stacking. Namely, tonal languages in general having flexible SFP stacking, while non-tonal languages would be more rigid in this regard. We leave this inquiry to further research.

7. Conclusion

The main goal of this paper was to offer an empirical account of how exactly sentence final particles arise in Korean in relation to specific discourse contexts. Providing new empirical evidence to the use of the particles kwuna and tamye in particular, our research allows the literature to move away from relying on traditional descriptions of these discourse-sensitive morphemes. Our experiment has also successfully shown with the storyboard method elicitation that (i) Korean uses intonation and particles conjointly to express precise speech acts and (ii) that sentence final particles in Korean cannot be stacked like Cantonese. (i) is significant in that intonation was largely overlooked as playing an important role in Standard Korean discourse—contrary to other dialects of Korean, namely Kyeongsang Korean, that have received attention towards intonation (Barrie et al. 2015). Against this backdrop, we have brought to light the need to treat these stable intonations—H and (LHL) as separate morphemes.
Borrowing from Speas and Tenny (2003) and Heim et al. (2014, 2016), while adopting Cinque’s description of the left periphery (1999), we proposed a complete structure to account for evidential and demand-for-confirmation speech acts in Korean. This structure can be used for future research, to investigate the distribution and behavior of other SFPs in Korean not surveyed in this paper. Additionally, drawing on literature concerning Cantonese SFP stacking, we have proposed a line of inquiry that suggests a possible typology concerning cross-linguistic variation with regards to SFP stacking. Namely, if SFPs had a prosodic requirement that dictated a special relationship with discourse-prominent intonation, the stacking and non-stacking of SFPs in Cantonese and Korean can potentially be boiled down to parametric variations of lexical tonality vs. non-tonality. Further cross-linguistic research is needed to establish the role of intonational morphemes and SFPs within the syntacticization of discourse. A typological survey of the different strategies used in languages for discourse is also in order.

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