



Understanding Plural, Singular, and Collective *They* among Korean EFL Learners: A Textbook Input Perspective

Junghyoe Yoon (Gyeongsang National University) · On-Soon Lee (Suncheon National University)



This is an open-access article distributed under the terms of the Creative Commons License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: July 13, 2026
Revised: August 7, 2026
Accepted: August 13, 2026

Yoon, Junghyoe (First author)
Associate Professor, Department
of English Language and
Literature
Gyeongsang National University
Email: jyoon@gnu.ac.kr

Lee, On-Soon (Corresponding
author)
Associate Professor, Institute of
General Education
Suncheon National University
255 Jungang-ro, Suncheon-si,
Jeollanam-do, Korea
Tel: +82-61-750-5622
Email: oslee@scnu.ac.kr

ABSTRACT

Yoon, Junghyoe and On-Soon Lee. 2026. Understanding plural, singular, and collective *they* among Korean EFL learners: A textbook input perspective. *Korean Journal of English Language and Linguistics* 26, 1081-1097.

Although the pronoun *they* is taught as having a plural antecedent (i.e., ‘plural *they*’) in EFL education, it can also refer to a singular antecedent (i.e., ‘singular *they*’) or to individual members of a collective noun that is singular in form (i.e., ‘collective *they*’). To examine the relationship between textbook input and the interpretation of the pronoun *they*, this study analyzes 10 high school English textbooks and conducts an experiment with a pronoun coreference task based on sentences from the textbooks. Seventy-four Korean undergraduate students completed the task and a proficiency test. Results showed that plural *they* was by far the most frequent type in the textbooks, and the participants showed the highest accuracy for plural *they* in the interpretation task. The learners also interpreted singular *they* and collective *they* relatively accurately despite their low frequencies in the textbooks. The relationship between English proficiency and interpretation accuracy differed across conditions, showing a more positive relationship in the plural *they* condition than in the collective *they* condition. Overall, the mean accuracy pattern (plural *they* > singular *they* > collective *they*) was consistent with the frequency pattern in the textbooks. However, the relatively high accuracy for singular and collective *they* despite their low textbook frequencies suggests that textbook distribution patterns alone may not fully explain learners’ interpretation of the three types of *they*.

KEYWORDS

singular *they*, collective *they*, frequency, pronoun resolution, English textbook

1. Introduction

Although the pronoun *they* is typically introduced in EFL classrooms as a pronoun that refers to a third-person plural antecedent, the increasing acceptance of singular *they* in various L1 contexts has drawn attention in EFL acquisition research. Given that the third-person singular pronouns for human referents in English are gender-specific (i.e., *he* as masculine and *she* as feminine), which pronoun can refer to an indefinite singular antecedent, such as *everyone*, *a person*, *each student*, and so on, is an important question. Despite the form-meaning mismatch (i.e., plural in form but singular in meaning), singular *they* is a viable candidate for a gender-neutral singular pronoun (Bjorkman 2017). In the last several decades, singular *they* has gained substantial acceptance as an alternative to generic *he*, which is criticized for evoking a male-biased interpretation, or to *he or she*, which is often considered stylistically unnatural or restrictive in repetitive use (Huddleston and Pullum 2005). For instance, a recent corpus study shows growing use of singular *they* as a gender-neutral or epicene pronoun in academic writing (Stormbom 2019, 2020).

In fact, a form-meaning mismatch in number is not rare in English grammar. Collective nouns, for example, are singular in form but can be construed as either singular or plural in pronoun resolution. A collective noun, such as *the committee*, *the team*, *the family*, *the army*, *the class*, or *the hospital*, can be interpreted as a unit or an institution, or as the individual members of the unit/institution. The noun can be referred to in the former interpretation by the singular pronoun *it*, but in the latter by the plural pronoun *they*. With collective *they*, the relevant form-meaning discrepancy is located in the antecedent: a morphologically singular collective noun can receive a member-oriented plural interpretation, and the plural pronoun *they* agrees with that notional interpretation. This description does not assume that collective *they* is inherently more complex to process than singular *they*. That is, pronoun replacement of a collective noun is related to not only grammatical number but also notional number, and pronouns are more sensitive than verbs to notional number (Bock et al. 2004, Bock et al. 2006, Zeldes 2018).

Therefore, the form-meaning mismatch found in singular *they* is not the same as that found in collective *they*. In the case of singular *they*, the plural form has a singular antecedent; learners can simply take singular *they* as a gender-neutral alternative to *he* or *she*. In contrast, to understand the use of collective *they*, learners must have already acquired the understanding of singular collective nouns as having a plural interpretation. In short, singular *they* involves a number mismatch between the plural-form pronoun and a singular referent, whereas collective *they* involves a morphologically singular antecedent that can be construed notionally as plural, followed by a pronoun that matches that plural construal. These are distinct loci of form-meaning alignment, and the present study does not establish that one necessarily imposes greater processing difficulty than the other.

As interest in the use of singular *they* has increased, previous studies have examined the grammaticality, acceptability, processing, frequency, and sociolinguistics of singular *they* as used by L1 English speakers (Arnold 2026, Block 2019, Bradley 2020, Kesan and Arnold 2025), suggesting that input, semantic features of antecedents, and form-meaning mapping may also contribute to pronoun resolution. In addition, several L2/EFL studies have explored how learners select singular *they*, generic *he*, or *he or she* as alternatives to gender-specific pronouns, but they have not reached a clear consensus (Eun 2025, Kim 2011, LaScotte 2021, Stormbom 2022). More specifically, little is known about how Korean EFL learners distinguish plural *they*, singular *they*, and collective *they* in interpretation and whether the interpretation pattern corresponds to the distribution of *they* types in the analyzed EFL textbooks. To address this topic, the present study conducts two analyses to explore Korean EFL learners' interpretation of *they*. First, the study analyzes the distribution of plural *they*, singular *they*, and collective *they* in textbooks used in the Korean EFL context. Second, it analyzes the results of a pronoun coreference task based on sentences from the analyzed textbooks and administered to Korean EFL learners.

This paper is organized as follows. Section 2 reviews the three uses of *they* and empirical L1/L2 studies of singular *they*. Section 3 provides the analysis of textbooks as input for Korean EFL learners. Sections 4 and 5, respectively, describe the experimental procedure and the results. Section 6 discusses the results in terms of input, form-meaning mismatch, and semantic features of antecedents, and it points out theoretical and pedagogical implications in EFL contexts. Section 7 concludes.

2. Literature Review

2.1 Pronoun Agreement and Form-Meaning Mismatch

Pronouns in English typically agree in person, gender, and number with their antecedent. That is, a pronoun can replace a repeated referring expression when they show agreement in person, gender, and number. Plural pronouns do not distinguish gender, as shown in (1).

- (1) The students submitted their papers. They were satisfied with the results.

In (1), the third-person plural noun phrase ‘the students’ is coreferential with the possessive pronoun ‘their’ and the nominative pronoun ‘they’ (i.e., ‘plural *they*’ henceforth) here. Interestingly, however, the third-person plural pronoun may not show agreement in number with its antecedent, as in (2).

- (2) a. Each student should submit their paper.
b. The committee announced that they would meet again.

‘They’ in (2a) and (2b) is coreferential with ‘each student’ and ‘the committee’, respectively. In (2a), given that ‘each student’ is singular in number, the third-person plural pronoun has a third-person singular antecedent. In other words, the plural form of the pronoun does not match its singular referent; this is what we call ‘singular *they*’. In (2b), the plural form ‘they’ has as its antecedent the singular form ‘the committee’. Here, however, the noun ‘committee’ is a collective noun, whose singular form can be interpreted as a singular meaning (i.e., the group or single institutional unit denoted by the expression) or a plural meaning (i.e., individual members of the group or institution). Unlike plural *they*, singular *they* contains a number mismatch within the pronoun–referent relation (a plural-form pronoun with a singular referent). In collective *they*, the potential mismatch lies instead between the collective antecedent’s singular morphology and its member-oriented plural construal; the pronoun *they* matches that notional plurality. The two configurations should therefore not be assumed to create comparable processing difficulty.

Stormbom (2022) discusses the possibility that singular *they* and plural *they* are stored separately in the speaker’s mental lexicon. More interestingly, she maintains that the interpretation of *they* is strongly conditioned by the semantic characteristics of the antecedents, rather than by grammatical number alone. For example, some antecedents, such as *everybody*, *anyone*, and *every employee*, are low in individuation, whereas others, such as *the student*, the name of a specific person, or a gender-stereotyped noun, are highly individuated.

2.2 Singular *They*

Singular *they* is not a recent invention; it has been used since the Middle English period (around the 1400s; Bjorkman 2017). The *Oxford English Dictionary*, for example, dates singular *they* to 1375. However, the

prescriptive approach that treats *he* as a gender-neutral form and singular *they* as non-standard “dates back to the 1700s” (Bjorkman 2017, p. 1).

Singular *they* can be used to refer to a generic antecedent (3), or a specific one (4), or a nonbinary-specific one (5), where both Alex and Jay are introduced as preferring *they*/them pronouns.

- (3) a. Everyone_i should know their_i own phone number. (Bjorkman’s (1a))
b. Every student_i does their_i homework. (Arnold 2026)
- (4) a. The professor_i said they_i cancelled the exam. (Bjorkman’s (2a))
b. I’ll let my cousin_i introduce themselves_i. (Bjorkman’s (2c))
- (5) a. Alex_i made breakfast with Will. They_i broke some plates. (Arnold 2026)
b. This is my friend, Jay_i. I met them_i at work. (Merriam-Webster 2019)

Consider the use of gender-neutral *he* in the examples in (6), from Huddleston and Pullum (2005, p. 104).

- (6) a. We need a manager_i who is reasonably flexible in his_i approach.
b. ?In that case [the husband or the wife]_i will have to give up his_i seat on the board.

Huddleston and Pullum (2005) maintained that the real problem of gender-neutral *he* is that it is inappropriate in many contexts. In (6a), the use of ‘his’ colors the hypothetical manager as masculine. In (6b), it is impossible for the pronoun ‘his’ to refer to “a coordination of a masculine and a feminine NP” (p. 104). In other words, the pronoun *he* cannot be interpreted as genuinely gender-neutral by speakers.

In a corpus-based discourse analysis using the British Web Corpus (ukWaC), Diamanti (2025) investigated uses of the gender-inclusive expressions *he/she* and *s/he*. According to the study, *he/she* is both more conventional than *s/he* (15,980 hits vs. 7,310 hits) and more flexible syntactically, with subject, object, possessive, and reflexive forms (i.e., *he/she*, *him/her*, *his/her*, and *himself/herself*). Regardless, both expressions fail “to account for non-binary identities” (Diamanti 2025, p. 97), unlike singular *they*. In this vein, Bradley (2020) reported that singular *they* had the highest acceptability among a range of generic singular pronouns, although the definite/specific use (7b) was judged less grammatical than the generic use (7a).

- (7) a. When a student_i is raising their_i hand, you should call on them_i. (Bradley’s (1))
b. When [the student/Quinn]_i gets here, please give them_i their_i package. (Bradley’s (2))

Bradley also observed that acceptance of singular *they* depends on gender-related attitudes as well as antecedent type.

2.3 Collective They

Collective nouns are grammatically singular but may be interpreted as semantically plural, as consisting of multiple individual members. For this reason, the choice between singular and plural pronouns may vary depending on how the antecedent is construed. Zeldes (2018) illustrated this point clearly, showing that a single collective noun, ‘the government,’ can be interpreted in two different ways, as shown in (8).

- (8) a. The government has voted and it has announced the decision. (Zeldes’ (1))
b. The government have voted and they have announced the decision.

Under grammatical concord, ‘government’ is treated as a morphologically singular noun, and therefore the

singular verb *has* and the singular pronoun *it* are expected, as in (8a). Under notional concord, however, ‘government’ is understood as an institution composed of multiple people, and therefore the plural verb ‘have’ and the plural pronoun ‘they’ are also possible, as in (8b).

However, Zeldes (2018) pointed out that subject–verb agreement and pronoun agreement should not necessarily be treated as the same phenomenon. They may diverge, as shown in (9).

(9) [One hospital] in Ramallah tells us [they] have treated seven people. (Zeldes’ (3))

In this example, ‘one hospital’ is morphologically singular, and the singular verb ‘tells’ is used in the first clause. In the following clause, however, the plural pronoun ‘they’ appears in ‘they have treated’. Here, ‘they’ does not refer to the hospital as a building or as a single institutional unit, but rather to the doctors, nurses, or staff members associated with the hospital. In other words, although ‘one hospital’ is grammatically singular, it can be interpreted notionally as an institution made up of multiple people, allowing the use of plural *they*.

Zeldes (2018) also noted that a person-related interpretation may facilitate the use of plural pronouns, as illustrated in the examples in (10).

(10) a. And this fall [the couple] expects [its] first child. (Zeldes’ (4))

b. A Florida court ruled against [a Pennsylvania couple] who contend May’s 10-year-old daughter is actually [their] child. (Zeldes’ (5))

In (10a), ‘the couple’ denotes a group consisting of two people. Nevertheless, the singular possessive pronoun ‘its’ is used. This suggests that the couple is conceptualized as a single unit, perhaps as one family unit. By contrast, in (10b), the same type of collective noun, ‘couple’, is followed by the plural possessive pronoun ‘their’. In this case, the couple is not construed primarily as a single unit, but as two individual people.

Bock et al. (2006) further showed that collective agreement is shaped not only by grammatical number but also by notional number. The study by Bock et al. (2004) experimentally demonstrated that pronouns are more sensitive than verbs to the notional number of collective antecedents. Previous findings on notional agreement suggest that collective antecedents can be interpreted as plural in meaning. However, this does not directly show that collective *they* is more difficult to comprehend than singular *they*.

2.4 Empirical Studies of Singular *They*

Singular *they* has generally been used when the referent gender is underspecified or less individuated in the discourse (Foertsch and Gernsbacher 1997, Stormbom 2020). The expanded use of singular *they* is occurring in tandem with the decreasing use of generic *he* (Stormbom 2019). Yet the use of singular *they* is not homogeneous, and several factors may play a role in its interpretation. Table 1 summarizes several L1 studies and their findings.

Several L1 studies consistently reported that singular *they* is processed more easily when the antecedent is generic, nonreferential, or low in individuation (Block 2019, Foertsch and Gernsbacher 1997). For example, the findings of Foertsch and Gernsbacher (1997) showed that singular *they* was easily processed when the antecedent was nonreferential or generic. This finding is also confirmed in the study by Block (2019), which found that singular *they* is preferred when referring to nonspecific referents. These results suggest that singular *they* is generally easier to process with generic, nonreferential, or low-individuation antecedents. Other studies show that the acceptance of singular *they* interpretations varies in accordance with gender, antecedent type, and referentiality (Blankestijn 2020, Bradley 2020, LaScotte 2016). The most recent study found that repeated exposure to singular *they* affects the use of singular *they* in context (Kesan and Arnold 2025), suggesting that relevant experience may

contribute to understanding how L2 learners use and acquire singular *they*.

Table 1. Summary of Main Findings from L1 Studies

Study	Participants	Findings
Foertsch and Gernsbacher (1997)	Native English speakers (<i>n</i> = 108)	Singular <i>they</i> was processed more efficiently with nonreferential antecedents than with specific referential antecedents.
LaScotte (2016)	Native English speakers (<i>n</i> = 38)	68% of participants selected singular <i>they</i> for the antecedent ‘ideal student’.
Block (2019)	Native English speakers (<i>n</i> = 83)	Singular <i>they</i> was rated as more natural for non-specific referents.
Bradley (2020)	Native English speakers (<i>n</i> = 354)	Acceptance of singular <i>they</i> was influenced by antecedent type.
Blankestijn (2020)	Native English speakers (<i>n</i> = 69)	Singular <i>they</i> was preferred when referring to individuals of unknown gender.
Kesan and Arnold (2025)	Native English speakers (<i>n</i> = 81)	Repeated exposure to singular <i>they</i> led to increased rates of a singular interpretation in ambiguous contexts.

As singular *they* has become increasingly common in contemporary English, a few L2 studies have begun to pay attention to it. Stormbom (2019) reported that, in Swedish L2 English learners’ academic writing, singular *they* is used as an epicene pronoun when referring to gender-neutral nouns. The same researcher analyzed a corpus of open access research articles (Stormbom 2020) and found that singular *they* is the most frequently used epicene pronoun, followed by *he or she* forms and generic *he*; and, interestingly, singular *they* tends to occur more frequently with low-individuation antecedents. While these studies provide insights into the use of singular *they* in actual contexts, they do not directly address whether this distribution pattern affects L2 learners’ understanding of singular *they*.

Moreover, findings from L2 studies have been mixed. Other L2 studies have reported a preference for generic *he* (Kim 2011, LaScotte 2021). In a study with 117 Korean L2 learners, Kim (2011) found the participants preferred generic *he* (40.8%) as the most acceptable gender-neutral pronoun, followed by singular *they* (23.4%). Similarly, with 24 L2 learners, LaScotte (2021) found that the learners most frequently used generic *he* (23.5%) in a production task, and that 32.4% of the learners did not understand singular *they* in context, with a significant effect of English proficiency on the accurate identification of the antecedent. On the other hand, Eun (2025) found that Korean EFL learners used singular *they* frequently with indefinite antecedents (e.g., *everybody*). Stormbom’s (2022) study showed that L2 learners (*n* = 338) with eight European L1 backgrounds generally preferred singular *they*, albeit with large differences among L1 groups. These mixed findings suggest that proficiency, L1 background, and semantic features of antecedent may affect L2 learners’ interpretation of singular *they*. Furthermore, previous studies have focused on singular *they*, while much less attention has been paid to how learners distinguish singular *they* from plural *they* and from collective *they* within a single experiment.

2.5 Research Questions

Taken together, previous findings suggest that L2/EFL learners’ interpretation and use of singular *they* are affected by several factors: English proficiency, first language background, and the semantic nature of the antecedent. Despite these findings, the question of how EFL learners resolve the antecedents of different types of *they* has yet to be explored. Furthermore, little is known about how the textbook distribution of plural, singular, and collective *they* relates to EFL learners’ interpretation. Third, no previous studies have examined these questions

among Korean EFL learners using authentic textbook materials. To address these gaps, the current study combines a corpus analysis of Korean high school English textbooks with a pronoun coreference experiment involving Korean college students. By comparing plural, singular, and collective *they*, the study investigates how learners' interpretation patterns relate to aggregate textbook frequencies and English proficiency. The specific research questions are as follows:

1. How accurately do Korean EFL learners interpret plural *they*, singular *they*, and collective *they*?
2. Does learners' English proficiency affect their interpretation of different types of *they*?
3. To what extent does the aggregate frequency distribution of plural, singular, and collective *they* in the analyzed textbooks correspond to learners' interpretation patterns?

3. Distribution of *They* Types in English Textbooks

To analyze the distribution of singular *they* in EFL learners' input,¹ 10 English textbooks published for first-year high school use in South Korea's 2015 national curriculum were selected to generate a corpus. Reading passages from all 10 textbooks were input into Microsoft Word files, and 10 subcorpora were generated from these files. The analysis was conducted using R statistical software (RStudio version 2026.01.1+403, Posit Software, PBC).

Table 2. Descriptive Statistics of *They* Distribution across 10 English Textbooks

Textbook	Total sentences of reading passages	Sentences with <i>they/them/their</i>	Ratio (%)
A	605	76	12.56
B	508	9	1.77
C	594	23	3.87
D	382	41	10.73
E	498	2	0.40
F	571	74	12.96
G	442	7	1.58
H	418	8	1.91
I	540	43	7.96
J	485	56	11.55
Total	5,043	339	6.72

All sentences including *they*, *their*, or *them* were extracted from the corpus. Table 2 shows descriptive statistics of the corpus. As the table shows, across all 10 books, sentences including a member of the *they* family (*they*, *them*, and *their*) occurred 339 times, and the overall ratio of these sentences to all sentences in the selected reading passages was approximately 6.72%. For example, textbooks A and F have a relatively high frequency of the *they* family (12.56% for A and 12.96% for F), whereas textbooks E, G, and H show relatively low frequencies (0.40% for E, 1.58% for G, and 1.91% for H). These findings indicate that the occurrence of *they* is not evenly distributed

¹ One reviewer raised a concern about the causal relationship between the distributional patterns observed in the textbooks and learners' pronoun interpretation in the experimental task, as it was not clearly reported which textbook each participant had used during high school. Furthermore, the distribution of *they* varied considerably across textbooks; for example, the frequency of collective *they* ranged from 0 to 10 instances (see Table 3). In addition, the interval between learners' exposure to the textbooks and their participation in the present study was not reported. This may have influenced learners' pronoun interpretation and weakened the potential effects of textbook input. We agree with the reviewer's concerns and have acknowledged these methodological limitations.

across textbooks.² This variation may result from differences in the topics of each textbook's reading passages. It further suggests that the overall frequency of the *they* family in textbook input may not be sufficient for Korean learners of English to fully learn the semantic functions of the pronoun *they*.

Next, the researchers examined the contexts and manually classified each token of the *they* family as plural *they*, collective *they*, or singular *they* according to its antecedent. After the initial coding, the two researchers cross-checked their classification. They discussed ambiguous cases and discrepancies until they reached consensus on the interpretation of each token of *they*. Table 3 shows the distribution of the three semantic types across the 10 English textbooks.

Table 3. The Distribution of Semantic *They* Types across 10 English Textbooks³

Textbook	No. of Sentences with <i>they/them/their</i>	No. of Plural <i>they</i>	No. of Singular <i>they</i>	No. of Collective <i>they</i>
A	76	64	2	10
B	9	0	5	4
C	23	23	0	0
D	41	35	3	3
E	2	1	1	0
F	74	69	4	1
G	7	0	6	1
H	8	0	7	1
I	43	34	6	3
J	56	56	0	0
Total	339	282	34	23

As Table 3 shows, singular *they* and collective *they* occurred relatively infrequently, with 34 and 23, respectively, of the 339 occurrences. In contrast, plural *they* occurred 282 times, suggesting that learners are predominantly exposed to the semantic interpretation of plural *they* in English textbooks. This imbalance suggests that the analyzed textbooks provide substantially fewer instances of singular and collective *they* than of plural *they*. The difference in the frequency of plural *they*, singular *they*, and collective *they* may correspond to differences in learners' understanding of the different semantic interpretations of *they*. Therefore, the current study examines college students' performance in interpreting *they* in context. Based on the distributional pattern found in the English textbooks to which the college students were likely to have been exposed, it is predicted that the participants will do better at interpreting sentences with plural *they* than at interpreting sentences with singular or collective *they*.

4. Experiment

4.1 Participants

A total of 74 participants (44 women and 30 men; mean age 20.61, *SD* = 0.99, range = 20–23), all undergraduates

² One explanation for the distributional differences across each textbook may be differences in the genres of the reading passages. For example, pronouns may occur more frequently in non-science texts than in social and science texts. This difference in genre could result in the different distribution across textbooks.

³ Generic *they* was included in the category of plural *they* in the current study, as generic *they* refers to nonspecific people in general and semantically shares plural properties. A total of five tokens of generic *they* occurred across the textbooks: one in textbook A, two in textbook F, and two in textbook G.

at a Korean university with various majors, completed this experiment.⁴ The participants were first asked to complete the Oxford Quick Placement Test (QPT; Syndicate 2001) to assess their English proficiency level.⁵ Then they completed the pronoun coreference task.

4.2 Materials

The pronoun coreference task comprised a total of 35 question items, with 20 filler items and 15 items in three conditions: five plural *they* (PT), five collective *they* (CT), and five singular *they* (ST). The 15 target items were developed using sentences from the reading passages of the English textbooks used for the textbook analysis.⁶ Each item was presented with three choices. One choice was the pronoun's antecedent; another choice was a different noun phrase adjacent to the target pronoun; the third choice was a general noun, such as *people*, *individuals*, or *folks*.

Example (11) presents a sample item from the PT condition, in which participants were asked to identify what the underlined word refers to in the sentence. In (11), option (b) is the correct answer, option (a) is a grammatically plausible noun phrase that is linearly adjacent to the pronoun, and option (c) is a semantically plausible general noun that does not appear in the sentence. Examples (12) and (13) are sample items for the CT and ST conditions, respectively; (a) is the correct answer in (12), while (b) is the correct answer in (13).

Instruction: Read the following sentence. Then choose what the underlined words refer to.

(11) Sample item for the Plural *They* (PT) condition

I hope our soap can help children in poor countries wash their hands and, in turn, improve their health.

- a) our soap
- b) children
- c) people

(12) Sample item for the Collective *They* (CT) condition

In 2030, the Ares 3 mission team is sent to Mars, but during their mission they have an accident.

- a) the Ares 3 mission team
- b) Mars
- c) people

(13) Sample item for the Singular *They* (ST) condition

It has been shown by many studies that when a person looks at the color red, they experience an increased heart rate and a boost of adrenaline.

- a) many studies
- b) a person
- c) people

⁴ A total of 101 participants completed the experiment. However, participants whose accuracy rate on filler items was lower than 70%, suggesting a lack of attention, were excluded from the data analysis.

⁵ This test was developed by Oxford University Press and Cambridge ESOL, and consists of 60 questions designed to identify learners' English proficiency, such as those defined by the CEFR levels (A1–C2). The current study used a short version of the QPT, consisting of 40 questions (e.g., Lee 2026, p. 6).

⁶ Previous research has suggested that singular *they* is acceptable when referring to *everybody* as an antecedent. For this reason, the present study excluded sentences including *everybody* from the target items.

Twenty filler items including various pronouns (i.e., *it*, *she*, *your*, *me*, *us*, and *this*) were also based on sentences from the reading passages in the 10 English textbooks. Example (14) presents a sample filler item.

(14) Sample filler (F) item

The teacher told the student, “You should come and see me soon.”

- a) the teacher
- b) the student
- c) folks

Again, all sentences used in the pronoun coreference task were selected from the reading passages in the 10 English textbooks published in 2015, and they were modified to be suitable for the purposes of this study. Two experts, both with doctoral degrees in linguistics, were involved in the process of selection, development, review, and revision of all materials. Two versions of the task were developed in which the items were randomly arranged in order to reduce potential item-order effects.

4.3 Procedures and Data Analysis

The experiment was conducted in one session. All participants were first asked to complete a short version of a QPT in 20 minutes. They then completed the pronoun coreference task, presented in a pen-and-pencil format, in 15–20 minutes. The whole experimental session lasted approximately 35 to 40 minutes.

For the data analysis, the QPT scores were calculated based on the number of correct answers. The maximum possible score was 40 points. According to the QPT proficiency criteria, a QPT score ranging from 20 to 26 out of 40 points is equivalent to the CEFR’s B1, or intermediate, level. Thus, the QPT results ($M = 22.78$ out of 40, $SD = 4.74$) indicate that the participants, on average, had intermediate-level proficiency. For the pronoun coreference task, the accuracy scores were calculated based on the number of correct responses, and item analysis followed.

The statistical analyses were conducted according to the three research questions. Because the dependent variable (interpretation accuracy) was binary (correct vs. incorrect) and responses were nested within both participants and test items, inferential analyses were conducted using binomial generalized linear mixed-effects models (GLMMs) with a logit link function. GLMMs were selected because they account for the non-independence of repeated observations while simultaneously modeling variability attributable to both participants and items. To address RQ1, descriptive statistics (means and standard deviations) were calculated for each condition. Differences among the three conditions were examined using a binomial generalized linear mixed-effects model (GLMM), followed by pairwise comparisons based on estimated marginal means (EMMs) with Tukey-adjusted *p* values. To address RQ2, English proficiency (QPT score), condition, and their interaction were included as fixed effects in the same GLMM, with participants and items treated as random intercepts, to examine whether the effect of English proficiency on interpretation accuracy differed across the three conditions. For RQ3, the aggregate frequencies of the three types of they in the textbook corpus were descriptively compared with learners’ interpretation accuracy. Finally, because the GLMM revealed large item-level variability, an additional descriptive item analysis was conducted to examine the accuracy of individual antecedents.

5. Results

5.1 Descriptive Statistics

Table 4 shows the mean accuracy rates for each condition. The accuracy rate in the PT condition is 82.2% ($SD = 18$), whereas those for the ST and CT conditions are 79.2% ($SD = 20.5$) and 75.1% ($SD = 23.6\%$), respectively. The mean filler accuracy of 84% ($SD = 11$) indicates that the participants paid sufficient attention to the task.

Table 4. Accuracy Rates: Plural *they*, Singular *they*, and Collective *they*

Condition	Accuracy (%)	SD (%)
Plural <i>they</i> (PT)	82.2	18.0
Singular <i>they</i> (ST)	79.2	20.5
Collective <i>they</i> (CT)	75.1	23.6
Filler (F)	84.0	11.0

Table 5 shows pairwise comparisons among the three conditions. The comparisons reported in Table 5 were model-based post-hoc contrasts derived from the estimated marginal means of the binomial GLMM. These contrasts compared the predicted probabilities of a correct response across the plural, singular, and collective *they* conditions while accounting for participant- and item-level random variability. Because three pairwise contrasts were conducted, Tukey-adjusted p values were reported to control for multiple comparisons. The participants showed significantly higher accuracy in the PT condition than in the CT condition ($p = .047$), but no significant difference between PT and ST or between ST and CT.

Table 5. Pairwise Comparisons among the Three Conditions

Contrast	Odds Ratio	SE	z value	p value
CT vs. PT	0.46	0.16	-2.26	.047*
CT vs. ST	0.92	0.36	-0.21	.976
PT vs. ST	2.01	0.74	1.89	.142

Note. PT = plural *they* condition; ST = singular *they* condition; CT = collective *they* condition; p values were adjusted using Tukey's method for multiple comparisons. * $p < .05$

These findings were partly consistent with the textbook distributional patterns. As expected, plural *they* showed the highest interpretation accuracy (82.2%), corresponding to its higher frequency in the textbook corpus. Collective *they*, which occurred least frequently in the textbooks, showed the lowest overall accuracy (75.1%). However, the participants also demonstrated relatively high accuracy for singular *they* and collective *they*, despite their comparatively low frequencies in the textbook corpus (see Table 3). The relatively small condition differences among the three conditions indicate that learners performed reasonably well across all three types of *they*. Taken together, the ordering of interpretation accuracy corresponded partly to the aggregate frequency distribution in the analyzed textbooks; that is, plural *they* was both the most frequent type and the most accurately interpreted type. However, the textbook frequency distribution does not fully account for the observed performance patterns. Other factors associated with different antecedent-pronoun mappings may be relevant to the performance.

5.2 Relations among Measures

To examine the effects of English proficiency level on the participants' accuracy in interpreting *they*, a

generalized linear mixed-effects model (GLMM) was constructed to allow the analysis to consider not only the binary dependent variable of correct versus incorrect responses, but also variations in accuracy both among individual participants and among individual items. Condition, QPT scores, and their interaction were entered as fixed effects, whereas participants and items were included as random intercepts. The participants' variability in accuracy was relatively small ($Variance = 0.372$, $SD = 0.6105$), but item variability was relatively large ($Variance = 1.4714$, $SD = 1.21130$). This finding suggests that the participants' accuracy was affected by item differences, indicating some items were more difficult than others. Table 6 summarizes the results.

Table 6. Results of a Generalized Linear Mixed-Effects Model

Fixed effects	Estimate	SE	z value	p value
Intercept	1.230	0.659	1.880	.060
PT condition	-1.088	0.923	-1.179	.238
ST condition	-0.455	0.954	-0.477	.633
QPT	0.015	0.026	0.587	.557
PT x QPT	0.103	0.041	2.544	.011*
ST x QPT	-0.018	0.038	-0.483	.629

Note. The collective *they* (CT) condition served as the reference level. The intercept represents the estimated log odds for the CT condition.

The model showed a significant interaction between the PT condition and QPT scores ($\beta = 0.103$, $p = .011$). Since the CT condition was used as the reference condition, this significant interaction indicates that the relationship between English proficiency and interpretation accuracy was more positive in the PT condition than in the CT condition. That is, as QPT scores increased, accuracy increased more strongly in the PT condition than in the CT condition. However, the interaction between the ST condition and QPT scores was not significant ($p = .629$), indicating that the relationship between English proficiency and accuracy did not significantly differ between the ST and CT conditions. In addition, the main effect of QPT scores was not significant ($p = .557$). Since CT was the reference condition, this result indicates that English proficiency was not significantly related to interpretation accuracy in the CT condition. Taken together, these results suggest that the relationship between English proficiency and interpretation accuracy differed across the three conditions.

5.3 Item Analysis

Given that the item variability was relatively large, the accuracy rates for each item were calculated across the three conditions, as shown in Table 7. Recall that accuracy reflects the correct identification of the antecedent of *they* in a given context. In the ST condition, the highest accuracy was for the antecedent *someone* (88.5%), followed by the antecedents *The University of California, Berkeley* (84.3%), and *each miner* (76.9%). On the other hand, learners had more difficulty interpreting singular *they* with the antecedents *anyone* (68.7%) and *a person* (62.9%). These item-level differences suggest that antecedent characteristics may affect learners' interpretation accuracy. However, because each antecedent was used in only one item, the effects of lexical and contextual differences cannot be clearly distinguished from those of semantic properties in the present study.

Similarly, in the PT condition, the antecedent *children* (95.1%) was identified with the highest accuracy, followed by *back sleepers* (81%), *sales* (72%), *these birds* (68.6%), and *refugee camps* (62.6%). The PT items also showed substantial differences in accuracy. However, because each antecedent was used in only one item, it is difficult to determine whether these differences were related to the semantic properties of the antecedents, lexical familiarity, sentence context, or other item-related factors.

Table 7. Item-Level Accuracy Rates by Condition

Condition	Item	Antecedent	N	Accuracy
ST	1	someone	74	88.5%
	2	The University of California, Berkeley ⁷	74	84.3%
	3	each miner	74	76.9%
	4	anyone	74	68.7%
	5	a person	74	62.9%
PT	1	children	74	95.1%
	2	back sleepers	74	81.0%
	3	sales	74	72.0%
	4	these birds	74	68.6%
	5	refugee camps	74	62.6%
CT	1	the team	74	91.3%
	2	the family	74	90.1%
	3	the army	74	76.1%
	4	the hospital	74	51.4%
	5	the class	74	47.7%

Note. PT = plural *they* condition; ST = singular *they* condition; CT = collective *they* condition.

The item analysis in the CT condition showed very high accuracy with antecedents denoting a group of people, such as *the team* (91.3%) and *the family* (90.1%). Accuracy decreased with *the army* (76.1%), which can be interpreted as a human group but also has a more institutional or organizational character. The lowest accuracy was found with *the hospital* (51.4%) and *the class* (47.7%), both of which may be interpreted as institutions or places rather than as groups with individual members. This pattern suggests that collective *they* may be easier to interpret when the antecedent clearly refers to a group of people. However, because each antecedent was used in only one item, it is difficult to determine whether these differences were related to the semantic properties of the antecedents or to lexical and contextual differences across items.

Item-level accuracy varied considerably across all three conditions, ranging from 62.6% to 95.1% for PT, from 62.9% to 88.5% for ST, and from 47.7% to 91.3% for CT. These differences suggest that the interpretation of plural *they*, singular *they*, and collective *they* may depend not only on the type of *they* but also on the characteristics of their antecedents. In particular, antecedent characteristics may play an important role in EFL learners' interpretation of singular *they* and collective *they*. This interpretation is consistent with previous L1 studies showing that antecedent characteristics can influence pronoun interpretation (e.g., Block 2019, Bradley 2020, Foertsch and Gernsbacher 1997).

6. Discussion

The first research question examined whether Korean EFL learners differed in the accuracy of the pronoun coreference task with plural *they*, singular *they*, and collective *they*. Although the accuracy of plural *they* was the

⁷ One researcher raised a concern that the antecedent *University of California, Berkeley*, as an institutional noun, would allow a collective interpretation. While this may be a limitation of the current study, the item context favors a singular *they* interpretation ("After graduating from high school in 1959, Roberts wanted to study at the University of California, Berkeley, but they would not admit him because of his disabilities"). Moreover, the university's official materials refer to the institution using singular *they*. For this reason, this item was excluded from the discussion. Therefore, it should be acknowledged as one of the limitations of the current study. Future research should adopt a finer-grained research design to investigate this.

highest, only the difference between the PT and CT conditions was significant. More importantly, the participants showed relatively high accuracy in interpreting singular *they* and collective *they* despite their low frequencies in the textbook input. This finding suggests that the high accuracy for plural *they* corresponded to its high aggregate frequency in the analyzed textbooks, whereas the comparatively high accuracy for singular and collective *they* shows that the correspondence was not complete. The finding of relatively high accuracy for singular *they* is not consistent with some previous studies (e.g., LaScotte 2021) reporting L2 learners' difficulty in interpreting singular *they*. Mapping differences may be relevant to the overall pattern of accuracy across the three types of *they*. However, they cannot fully explain why singular and collective *they* showed relatively high accuracy despite their low frequencies in the textbooks. Since the present study did not directly examine processing complexity, this explanation should be considered tentative and further examined in future research.

With respect to the second research question, the significant PT $\times$ QPT interaction suggests that the relationship between English proficiency and interpretation accuracy differed between the PT and CT conditions. Specifically, as English proficiency increased, interpretation accuracy increased more strongly for plural *they* than for collective *they*. In contrast, English proficiency was not significantly related to interpretation accuracy in the CT condition, and the relationship between proficiency and accuracy did not significantly differ between the ST and CT conditions. These findings suggest that the effect of English proficiency on *they* interpretation may differ depending on the type of *they*.

Based on the item analysis, considerable variation in accuracy was found across different antecedents. These item-level differences suggest that antecedent characteristics may influence learners' interpretation of singular *they* and collective *they*. However, the present study did not directly examine the relative effects of semantic properties, input frequency, English proficiency, and other item-related factors. Therefore, future studies should include multiple items for each semantic category to further examine how antecedent characteristics affect Korean EFL learners' interpretation of *they*.

The third research question examined whether learners' interpretation pattern corresponded to the frequency distribution of the three types of *they* in the analyzed textbooks. The ordering of mean accuracy (i.e., plural *they* > singular *they* > collective *they*) was consistent with the textbook frequency patterns (i.e., plural *they* > singular *they* > collective *they*). Thus, the ordering of mean accuracy provided partial correspondence with the aggregate frequency ordering in the analyzed textbooks. Consistent with the overall distributional pattern in the analyzed English textbooks, in which plural *they* occurred most frequently, the Korean EFL learners interpreted plural *they* most accurately. Interestingly, however, learners also demonstrated relatively high interpretation accuracy for singular *they* and collective *they*, despite their comparatively low frequencies in the textbooks. This finding is not consistent with the recent study by Kesan and Arnold (2025), which reported that increased exposure to singular *they* improved learners' ability to use it. Thus, the correspondence between aggregate textbook frequencies and learners' interpretation patterns was incomplete for singular and collective *they*. One possible interpretation is that differences in form–meaning mapping may also be relevant to the observed accuracy pattern. However, the present study did not directly manipulate or measure processing complexity. Therefore, this interpretation should be regarded as tentative and requires further empirical investigation. From a theoretical perspective, plural *they* may require a relatively straightforward mapping between a plural antecedent and a plural pronoun. Singular *they* may require learners to relate a grammatically singular antecedent to a plural-form pronoun. Collective *they* may involve notional agreement, in which a morphologically singular collective noun (e.g., *the team*) is construed as referring to multiple individual members before the pronoun *they* is interpreted. The present study, however, did not directly manipulate or measure the relative processing complexity of these mappings. Therefore, these descriptions should be regarded as possible interpretations to be explored in future research. Interestingly,

antecedents such as the team and the family were interpreted more accurately than antecedents such as the hospital and the class. One possible interpretation is that antecedents more transparently referring to groups of individual people were easier for learners to resolve than antecedents with a stronger institutional interpretation. However, because each antecedent was represented by only a single item, this pattern may also reflect lexical or contextual characteristics rather than semantic properties alone. This interpretation is broadly consistent with Bock et al.'s (2006) proposal that pronouns are more sensitive than verbs to notional agreement, although the present study was not designed to test this account directly.

The findings of this study have some theoretical and pedagogical implications. First, the findings theoretically suggest that the interpretation of singular *they* and collective *they* may not be affected solely by input frequency and learners' proficiency. Instead, the semantic nature of the antecedent may play a crucial role in interpreting singular *they* and collective *they*. For example, the accuracy rates of antecedents such as *someone* and *each miner* were relatively high. This finding partially supports the proposal that singular *they* is frequently coreferential with underspecified antecedents (e.g., Arnold 2026), and extends previous L1 findings to an EFL context (e.g., Bradley 2020). Second, pedagogically, the study's results suggest that explicit instruction on singular *they* with a variety of antecedents may help learners develop a better understanding of its use. Furthermore, using authentic materials (e.g., news articles, corpus examples) in the classroom may help learners develop a comprehensive understanding of singular *they*, which is likely to be encountered with much greater frequency in authentic contemporary discourse than in traditional classroom materials such as textbooks.

7. Concluding Remarks

The present study reported how accurately Korean L2 learners interpret plural *they*, singular *they*, and collective *they*, while comparing learners' interpretation patterns with the distribution of *they* types in the analyzed textbooks. The results showed that Korean EFL university students accurately interpreted plural *they* with the highest accuracy, followed by singular *they* and then collective *they*, which is broadly in accord with the distributional patterns of the three types of *they* in textbooks used in Korean high school classrooms. The specific findings, however, suggest that input frequency alone cannot explain the accuracy of EFL learners' interpretation of the three types of *they*, as the learners showed fairly high accuracy in interpreting singular and collective *they* despite these types' rare occurrence in the textbooks. The relationship between proficiency and accuracy was more positive in the PT condition than in the CT condition, as indicated by the significant PT $\times$ QPT interaction. In addition, differences in accuracy among individual items suggest that the semantic nature of antecedents may affect learners' interpretations, particularly for singular *they* and collective *they*.

The limitations of this study should be acknowledged. First, the present study measured learners' exposure to the pronoun *they* through 10 English textbooks. Although the textbooks represent one potential source of input, the study did not identify the textbook series used by each participant, the interval since high-school exposure, or exposure outside the classroom (e.g., social media and online news). The frequencies, especially the low and variable counts for singular and collective *they*, cannot be linked to stable individual exposure. Therefore, the relationship between input frequency and learners' interpretation of the three types of *they* should be interpreted with caution. Future research should examine how learners' exposure facilitates the acquisition of plural, singular, and collective *they* with a more fine-grained research design. Second, the present study employed only a comprehension task that measured interpretation accuracy. Future studies should incorporate production tasks and online processing measures to provide a better understanding of learners' knowledge of singular and collective

they. Third, each condition included only five antecedent types. The limited number of items does not allow firm generalizations about the effects of different antecedent types. Future studies should include a wider range of antecedent types by manipulating semantic properties such as individuation and humanness.

References

- Arnold, J. E. 2026. Two kinds of singular *they*: A usage-based model. *Glossa: A Journal of General Linguistics* 11(1), 1-14.
- Bjorkman, B. M. 2017. Singular *they* and the syntactic representation of gender in English. *Glossa: A Journal of General Linguistics* 2(1), 1-13.
- Blankestijn, F. 2020. *Gender-neutral Pronoun Usage: How and Why Singular They is Used*. Bachelor's thesis, Radboud University, Nijmegen, Netherlands.
- Block, T. R. 2019. *Interspeaker Variation in the Syntactic Processing of Referential Singular They*. Master's thesis, Simon Fraser University, Burnaby, BC, Canada.
- Bock, K., K. M. Eberhard and J. C. Cutting. 2004. Producing number agreement: How pronouns equal verbs. *Journal of Memory and Language* 51, 251-278.
- Bock, K., S. Butterfield, A. Cutler, J. C. Cutting, K. M. Eberhard and K. R. Humphreys. 2006. Number agreement in British and American English: Disagreeing to agree collectively. *Language* 82(1), 64-113.
- Bradley, E. D. 2020. The influence of linguistic and social attitudes on grammaticality judgments of singular 'they'. *Language Sciences* 78, 1-11.
- Diamanti, L. 2025. Gender markedness: A corpus-based analysis of the epicene pronouns 's/he' and 'he/she'. *International Journal of English Linguistics* 15(3), 95-107.
- Eun, H. 2025. A study on Korean college EFL learners' perception of English epicene pronouns. *Studies in English Language and Literature* 51(1), 181-203.
- Foertsch, J. and M. A. Gernsbacher. 1997. In search of gender neutrality: Is singular "They" a cognitively efficient substitute for generic "He"? *Psychological Science* 8(2), 106-111.
- Huddleston, R. and G. K. Pullum. 2005. *A Student's Introduction to English Grammar*. Cambridge: Cambridge University Press.
- Kesan, J. R. and J. E. Arnold. 2025. Singular "they" exposure increases singular interpretations in ambiguous pronouns. *Proceedings of the 47th Annual Conference of the Cognitive Science Society*, 3787-3794. San Francisco, CA: Cognitive Science Society.
- Kim, J. 2011. Korean EFL learners' use and perception of English epicene pronoun: Focusing on generic He and Singular They. *The Sociolinguistic Journal of Korea* 19(2), 51-83.
- LaScotte, D. K. 2016. Singular *they*: An empirical study of generic pronoun use. *American Speech* 91(1), 62-80.
- LaScotte, D. K. 2021. Nonnative English learners' use and understanding of singular *they*. *Language Awareness* 30(1), 84-94.
- Lee, O.-S. 2026. Differences in lexis, collocations, and keywords between AI-generated and L2 learner summary writing. *Journal of Pan-Pacific Association of Applied Linguistics* 30(1), 155-174.
- Merriam-Webster. 2019. They. In Merriam-Webster.com dictionary. Available at <https://www.merriam-webster.com/dictionary/they>
- Stormbom, C. 2019. Language change in L2 academic writing: The case of epicene pronouns. *Journal of English for Academic Purposes* 38, 95-105.

- Stormbom, C. 2020. Gendering in open access research articles: The role of epicene pronouns. *English for Specific Purposes* 60, 193-204.
- Stormbom, C. 2022. Singular *they* in English as a foreign language. *Applied Linguistics Review* 13(5), 873-897.
- Syndicate, U. C. L. E. 2001. *Quick Placement Test*. Oxford: Oxford University Press.
- Zeldes, A. 2018. A predictive model for notional anaphora in English. *Proceedings of the First Workshop on Computational Models of Reference, Anaphora and Coreference*, 34-43.

Examples in: English
Applicable Language: English
Applicable Level: Tertiary