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## IN SEARCH OF GENDER NEUTRALITY: Is Singular *They* a Cognitively Efficient Substitute for Generic *He*?

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### Abstract

With increasing frequency, writers and speakers are ignoring grammatical proscription and using the plural pronoun *they* to refer to singular antecedents. This change may, in part, be motivated by efforts to make language more gender inclusive. In the current study, two reading-time experiments demonstrated that singular *they* is a cognitively efficient substitute for generic *he* or *she*, particularly when the antecedent is nonreferential. In such instances, clauses containing *they* were read (a) much more quickly than clauses containing a gendered pronoun that went against the gender stereotype of the antecedent, and (b) just as quickly as clauses containing a gendered pronoun that matched the stereotype of the antecedent. However, with referential antecedents, for which the gender was presumably known, clauses containing singular *they* were not read as quickly as clauses containing a gendered pronoun that matched the antecedent's stereotypic gender.

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In speech we often solve the problem of the generic *he* by [using] a plural pronoun ... as in *Everyone brought their books to class*. But this construction violates the expectations of most readers, so it should be avoided in writing. (Fowler & Aaron, 1983, p. 195)

In spite of proscriptions like this one, using the plural pronoun *they* to refer to a singular person of unknown gender has become ubiquitous, even in writing (Bodine, 1975; MacKay, 1980; Meyers, 1990; Valian, 1977). Ever since generic *he* fell out of favor for being gender biased and presumptive, speakers and writers have been looking for a reasonable alternative (Beardsley, 1973; Bodine, 1975; Flanagan & Todd-Mancillas, 1982; Nilsen, 1984; Spencer, 1978). More and more often, singular *they* is the pronoun of choice.

As ungrammatical as this shift may be, the justification for it is quite clear. The generic *he* that grammarians prescribe is typically perceived as referring to a male, not as being all-inclusive (Khosroshahi, 1989; Kidd, 1971; MacKay & Fulkerson, 1979; Martyna, 1978a; Moulton, Robinson, & Elias, 1978; Silvera, 1980). To counter this inequity, many writers and editors have adopted the policy of using *he* or *she* in place of generic *he*, even though this construction is awkward when used repeatedly. Other alternatives include using *she*,

which works only in print, or replacing generic *he* with the generic *she*, a form of linguistic affirmative action.

The alternative examined in the current study, using *they* as a singular pronoun, has been considered by a number of researchers (Bodine, 1975; MacKay, 1980; Martyna, 1978a, 1978b; Valian, 1977). For some situations, singular *they* has even received grammarians' endorsement. Since 1970, grammar handbooks have struggled with the fact that singular *they* seems more natural than generic *he* in certain situations, and most now begrudgingly allow writers to use *they* as a pronoun for two limited classes of singular antecedents: indefinite pronouns like *anybody* or *someone* and corporate nouns like *the shop* or *Seattle* (Zuber & Reed, 1993). Of course, *they* used in this way is still in some sense "plural": Indefinite pronouns refer to any person from a group of unspecified persons, and corporate nouns refer to groups of people who form a functional unit.

However, using *they* to refer to an individual of known or unknown gender is still considered problematic. As Strunk and White's (1979) *Elements of Style* asserts, "The furor recently raised about *he* would be more impressive if there were a handy substitute for the word. Unfortunately, there isn't, or at least no one has come up with one yet" (p. 61). However, according to the experiments reported here, a handy substitute for generic *he* has already been found: namely, singular *they*. Aided by society's increasing resistance to biased language, this genderless singular pronoun has become firmly embedded in the American lexicon (Meyers, 1990). Indeed, it is unclear whether many of the people who now choose to use singular *they* realize that it is "ungrammatical."

How does using *they* as a singular pronoun affect comprehension? The only way to know for sure is through empirical research. In the experiments reported here, the processing cost of using singular *they* in various contexts was measured through the reading times of university undergraduates. As an experiment by Kerr and Underwood (1984) had already demonstrated, readers fixate longer on pronouns that are somehow surprising than on pronouns that are consistent with expectations. In Kerr and Underwood's study, participants read sentences that contained gender-stereotyped antecedents (e.g., *the surgeon*, *the nurse*), each followed by a gender-specific pronoun that either matched or mismatched the stereotypic gender of the antecedent. Readers were consistently slower reading sentences in which the gender of the pronoun and the gender implied by the antecedent did not match. By this same logic, if using singular *they* is confusing and incurs additional cognitive processing, readers would be slowed when reading a clause that uses *they* to refer to a singular antecedent. Thus, our experiments compared how quickly the pronouns *he*, *she*, and *they* were read and understood in sentences with antecedents that were stereotypically masculine (e.g., *truck driver*), stereotypically feminine (e.g., *nurse*), gender neutral (e.g., *runner*), or indefinite pronouns (e.g., *anybody*).

In both experiments, readers read three-clause sentences that contained a human antecedent in the first clause and a pronoun referring to that antecedent in the second clause. Readers proceeded through the sentences one clause at a time, pressing a button marked "Continue" when they were ready to advance. In this way, we obtained a reading time for each clause. As in Kerr and Underwood's (1984) experiments, we expected reading times for the clause

containing the pronoun to be slower when the pronoun's gender did not match the implied gender of the antecedent. The question of interest was how quickly clauses containing *they* would be read in comparison to clauses containing either *he* or *she*. We reasoned that if *they* is considered an inappropriate or surprising anaphor to use with a singular antecedent, comprehenders should be significantly slower reading the clauses containing *they* than the clauses containing *he* or *she*. Therefore, if comprehenders were not significantly slowed when encountering the pronoun *they* with a singular antecedent, the argument that singular *they* "violates the expectations of most readers" would not be empirically supported. Such a result would demonstrate that singular *they* has become an acceptable substitute for generic *he* in the minds of our readers.

## EXPERIMENT 1

In Experiment 1, participants read 72 three-clause sentences in a self-paced reading task and indicated their agreement or disagreement with the opinion expressed in each sentence. The sentences in Experiment 1 contained nonreferential antecedents in the form of common nouns modified by indefinite determiners, as in Examples 1 through 3, or indefinite pronouns, as in Example 4.

1. A truck driver should never drive when sleepy, even if *he/she/they* may be struggling to make a delivery on time, because many accidents are caused by drivers who fall asleep at the wheel.
2. A nurse should have an understanding of how a medication works, even if *he/she/they* will not have any say in prescribing it, because nurses must anticipate how a patient will respond to the medication.
3. A runner should eat lots of pasta the night before a race, even if *he/she/they* would rather have a steak, because carbohydrates provide fuel for endurance events, while proteins do not.
4. Anybody who litters should be fined \$50, even if *he/she/they* cannot see a trashcan nearby, because littering is an irresponsible form of vandalism and should be punished.

After each sentence, readers saw a "True or False?" prompt and pressed a button to respond.

The first independent variable was the type of antecedent read in the first clause. The antecedents were stereotypically masculine nouns, stereotypically feminine nouns, neutral nouns, or indefinite pronouns. The second independent variable was the pronoun that appeared in the second clause: *he*, *she*, or *they*. The dependent variable was the reading time for the clause containing the pronoun. In view of Kerr and Underwood's (1984) results, we anticipated that reading times for sentences that had gender-stereotyped antecedents (masculine or feminine) would be slowest when the pronoun mismatched the gender stereotype of its antecedent and fastest when the pronoun matched the gender stereotype of its antecedent. In short, we predicted that *they* would serve as a cognitively efficient compromise. For example, in cases in which the singular antecedent is assumed—but not known—to be female (e.g., *nurse*), using singular *they* to refer to that antecedent might actually be less disruptive than using generic *he*.

For sentences that had neutral or indefinite antecedents, we predicted that reading times for clauses with *they* would be no slower than—and perhaps somewhat faster than—reading times for clauses with *he* or *she*. Our reasoning for this prediction was as follows: First, because of the increased occurrence of singular *they* in colloquial English, sentences that use *they* to refer to an indefinite or gender-neutral singular antecedent are no longer unexpected or surprising. Second, with neutral and indefinite antecedents, clauses containing *they* might be read even faster than clauses containing *he* or *she* because the pronoun *they* adds no new information, whereas the pronouns *he* and *she* seem to specify the gender of an antecedent whose gender was not previously known. Any additional information provided by an anaphor increases processing time (Foertsch & Gernsbacher, 1994; Garnham, 1981, 1984; Garrod & Sanford, 1977). Hence, if the reader has not made a presumption about the gender of the antecedent, or if the reader's presumption does not match the gender that is then specified by the pronoun, the reader will be slower processing a clause that uses a gender-specific pronoun.

## Method

### Participants

The participants were 87 undergraduates in an introductory psychology course at the University of Wisconsin-Madison. All participants were native English speakers.

### Materials

The experimental stimuli were 72 three-clause sentences.<sup>1</sup> The first clause always began with a masculine, feminine, or neutral common noun modified by an indefinite determiner, or with an indefinite pronoun.<sup>2</sup> Care was taken to ensure that nothing in this first clause other than the intended referent could be referred to using the pronouns *he*, *she*, or *they*. The second clause began with the words "even if," followed by the pronoun *he*, *she*, or *they*. The verb in the second clause was unmarked for number so that its form was identical regardless of the pronoun used. The third clause, beginning with "because," provided a justification for the opinion expressed in the first two clauses and was included as a buffer so that reading time for the crucial second clause would not be contaminated by a reader's wrap-up processing at the end of each sentence.

The 72 experimental sentences were presented in the same order to all participants. This order was random with the exception that sentences of the same antecedent type (masculine, feminine, neutral, or indefinite pronoun) did not appear more than twice consecutively, and sentences using the same pronoun (*he*, *she*, or *they*) did not appear more than three times consecutively. Three material sets were created so that each sentence appeared with a different pronoun in each material set. The experiment was conducted as a within-subjects

<sup>1</sup>A list of the sentences used in both experiments is available on request.

<sup>2</sup>A norming study with 40 subjects was conducted to compile a set of common nouns that are typically perceived as referring to a masculine, feminine, or neutral entity. Participants rated a list of 82 common nouns that described various roles or occupations using a 10-point Likert scale ranging from 1, *Male*, to 10, *Female*. The mean rating for each common noun was calculated. Any noun rated between 1 and 3.5 was classified as "masculine," any noun rated between 4.5 and 6.5 was classified as "neutral," and any noun rated between 7.5 and 10 was classified as "feminine." Stimuli for each of the three common-noun categories were selected from this set. The fourth category, indefinite pronouns, comprised *everyone*, *everybody*, *anyone*, *anybody*, *someone*, and *somebody*, each used a total of three times.

design, with each antecedent type appearing with each pronoun a total of six times per material set.<sup>3</sup>

## Procedure

Participants were tested in separate cubicles containing computer screens with three-button response pads. At the beginning of a session, participants read instructions that appeared on their screens. Participants were instructed that they would read a series of three-clause sentences presented one clause at a time, and that they were to advance through each sentence by pressing the “Continue” button. After reading the last clause of each sentence and pressing the “Continue” button, the words “True or False?” would appear on the screen. Participants were told to indicate their agreement with the opinion expressed in the sentence by pressing either a button labeled “True” or a button labeled “False.” Participants were given three example sentences with which to practice this procedure. After practicing, participants signed informed consent sheets, and the experimenter began the presentation of experimental stimuli.

Each clause of each sentence appeared flush-left in the center of the computer screen. A clause remained on the screen until the participant pressed the “Continue” button or until 20 s elapsed. A 250-ms blank period intervened between consecutive clauses. After participants read the last clause of a sentence and pressed the “Continue” button, the “True or False?” prompt appeared on the screen and remained until the participant responded or 20 s elapsed. A 1.5-s blank period intervened between sentences.

## Results and Conclusions

To control for variability in the number and length of words between conditions, reading times for the critical second clauses were divided by the number of characters in each clause.<sup>4</sup> The mean per-character reading times for the three pronoun conditions for each of the four types of antecedent are displayed in Figure 1.

Within-subjects analyses of variance (ANOVAs) with pronoun and material set as factors were performed for each of the four types of antecedent. For both feminine and masculine antecedents, clauses containing opposite-gender pronouns were read most slowly. However, clauses containing same-gender pronouns and singular *they* were read with equal facility. More specifically, for masculine antecedents, *she* clauses ( $M = 59.5$ ,  $SE = 2.05$ ) were read significantly more slowly than either *he* clauses ( $M = 54.8$ ,  $SE = 1.77$ ) or *they* clauses ( $M = 55.3$ ,  $SE = 1.77$ ),  $F_1(2, 168) = 5.14$ ,  $p = .007$ ;  $F_2(2, 34) = 5.37$ ,  $p = .009$ ;  $\text{min}F'(2, 116) = 2.63$ ,  $p < .05$ . In contrast, for masculine antecedents, *he* clauses and *they* clauses were read with equal facility,  $F < 1$ . For feminine antecedents, *he* clauses ( $M = 58.7$ ,  $SE = 1.66$ ) were read significantly more slowly than either *she* clauses ( $M = 52.9$ ,  $SE = 1.64$ ) or *they* clauses ( $M = 52.7$ ,  $SE = 1.67$ ),  $F_1(2, 168) = 11.37$ ,  $p < .0001$ ;  $F_2(2, 34) = 4.87$ ,  $p = .014$ ;  $\text{min}F(2, 67) = 3.41$ ,  $p < .05$ ; *she* clauses and *they* clauses were read with equal facility,  $F < 1$ .

<sup>3</sup>Subsequent analyses found no differences in how participants responded to the three material sets, so means are collapsed across material set in the reported analyses of both experiments.

<sup>4</sup>Analyses were also performed using the whole-clause and per-word reading times. Because the results were essentially the same, only the results of per-character analyses are reported.

Apparently, singular *they* is readily substituted for the same-gender pronoun in sentences in which the antecedent has a strong gender bias.

When the sentence's antecedent was neutral, *he* clauses ( $M = 56.9$ ,  $SE = 1.75$ ), *she* clauses ( $M = 55.7$ ,  $SE = 1.73$ ), and *they* clauses ( $M = 55.5$ ,  $SE = 1.86$ ) were all read with equal facility,  $F < 1$ . Finally, when the sentence's referent was an indefinite pronoun, singular *they* was the pronoun of choice: *They* clauses ( $M = 53.4$ ,  $SE = 1.50$ ) were read faster than either *she* clauses ( $M = 55.3$ ,  $SE = 1.86$ ) or *he* clauses ( $M = 58.2$ ,  $SE = 2.23$ ),  $F_1(2, 168) = 4.41$ ,  $p < .0001$ ;  $F_2(2, 34) = 4.97$ ,  $p = .014$ ;  $\text{min}F'(2, 122) = 2.34$ ,  $p < .05$ ; planned comparisons show that only the difference between *they* and *he* is significant,  $p < .004$ . It was anticipated that singular *they* would be the most readily accepted pronoun with indefinite pronoun antecedents like *anyone* because even grammar books have endorsed this usage.

Interestingly, with indefinite pronoun antecedents, *she* clauses had a marginally significant advantage over *he* clauses,  $p = .081$ , suggesting that members of our liberal-minded student body may have been reacting to the perceived chauvinism of using *he* in sentences in which the referent supplies no gender information.

## EXPERIMENT 2

Experiment 1 demonstrated that singular *they* can be a cognitively efficient substitution for generic *he* or generic *she* when the nonreferential antecedent is either an indefinite pronoun or a common noun with an indefinite determiner. Experiment 2 investigated whether similar results would be found with referential antecedents. In Experiment 2, we removed the indefinite pronoun sentences and modified the remaining masculine, feminine, and neutral antecedents to make them referential, giving the reader the impression *that* each sentence was about a specific person whose gender was presumably known. To accomplish this, the antecedents were modified by the definite determiner *that*, as in Example 5; by first-person possessives, as in Example 6; or by indicators that the antecedent was personally known to the speaker, as in Example 7:

- 5 That truck driver shouldn't drive when sleepy, even if *he/she/they* may be trying to make a delivery on time, because many accidents are caused by drivers who fall asleep at the wheel.
- 6 My nurse was able to explain how my medication would affect me, even though *he/she/they* had no say in prescribing it, because nurses must anticipate how patients will respond to medication.
- 7 A runner I knew always ate lots of pasta the night before a race, even when *he/she/they* would've rather had a steak, because carbohydrates provide fuel for endurance events, while proteins do not.

After reading each sentence, participants responded to a yes/no question, such as "Do you agree?" We assume that speakers and writers are less likely to use singular *they* in situations in which the antecedent's gender is known than in situations in which the antecedent is a hypothetical person of indeterminate gender. The question of interest was whether readers are sensitive to this difference.



## Method

### Participants

The participants were 108 undergraduates in an introductory psychology course at the University of Wisconsin-Madison. None had participated in Experiment 1. All participants were native English speakers.

### Materials

The experimental stimuli were 54 three-clause sentences expressing opinions about the behavior of specified persons in particular situations. The sentences were based on those used in Experiment 1 except that each antecedent was made more specific (i.e., referential) by modifying it as illustrated in Examples 5 through 7. A norming study with 30 subjects ascertained that the resulting antecedents were overwhelmingly comprehended as referring to “one particular person” and were rarely if ever perceived as plural. After the third clause of each sentence, participants read a yes/no question pertaining to the sentence. About one third of the questions asked whether the participant agreed with the opinion or behavior expressed in the sentence, about one third asked if anything similar had ever happened to the participant, and about one third asked if the participant agreed with a proposed course of action.

### Procedure

The procedure was the same as in Experiment 1 except that participants responded to a yes/no question instead of the “True or False?” prompt after each sentence.

## Results and Conclusions

As in Experiment 1, the dependent variable was the per-character reading time for the second clause. The mean per-character reading times for the three pronoun conditions for each of the three types of antecedent are displayed in Figure 2.

Within-subjects ANOVAs with pronoun and material set as factors were performed for each of the three types of antecedent. For masculine antecedents, same-gender *he* clauses resulted in the fastest reading times ( $M = 51.7$ ,  $SE = 1.28$ ), and opposite-gender *she* clauses resulted in the slowest reading times ( $M = 57.0$ ,  $SE = 1.56$ ), whereas *they* clauses had an intermediate reading time ( $M = 55.0$ ,  $SE = 1.51$ ),  $F_1(2, 210) = 12.76$ ,  $p < .0001$ ;  $F_2(2, 34) = 3.84$ ,  $p = 0.31$ ;  $\text{min}F(2, 57) = 2.96$ ,  $p < .05$ . As in Experiment 1, planned comparisons showed the reading times for *she* clauses to be significantly slower than the reading times of *he* clauses,  $p < .05$ . However, in contrast to Experiment 1, the reading times for *they* clauses, though marginally faster than those for *she* clauses,  $p = .065$ , were also significantly slower than those for *he* clauses,  $p < .05$ . The feminine antecedents showed a similar pattern: Same-gender *she* clauses resulted in the fastest reading times ( $M = 50.7$ ,  $SE = 1.16$ ), and opposite-gender *he* clauses in the slowest reading times ( $M = 57.8$ ,  $SE = 1.66$ ), whereas *they* clauses had an intermediate reading time ( $M = 52.2$ ,  $SE = 1.41$ ),  $F_1(2, 210) = 19.38$ ,  $p < .0001$ ;  $F_2(2, 34) = 8.87$ ,  $p = .0008$ ;  $\text{mir}LF(2, 70) = 6.08$ ,  $p < .05$ . Planned comparisons showed reading times for the *he* clauses to be significantly slower than the reading times of either the *she*

clauses or the *they* clauses,  $p < .05$ , but *they* clauses were also marginally slower than *she* clauses,  $p = .10$ .

Thus, when the antecedents are referential, singular *they* is no longer as efficient as a gendered pronoun that matches the gender stereotype of the antecedent. For example, in sentences in which the antecedent suggests a male and the explicitness of the modifiers suggests the informant is talking about a particular person whose gender should be known, using *they* as an anaphor produces almost as much of a slowdown as using *she*. Looking at the neutral antecedents, in contrast, we see no such disadvantage for clauses using *they*. As in Experiment 1, there were no significant differences in the reading times for *he* clauses ( $M = 51.1$ ,  $SE = 1.24$ ), *she* clauses ( $M = 51.3$ ,  $SE = 1.35$ ), and *they* clauses ( $M = 51.5$ ,  $SE = 1.40$ ),  $F < 1$ .

The results from these experiments support the contention that singular *they* is an acceptable substitution for gender-specific pronouns with nonreferential antecedents, which are quite possibly ambiguous as to gender. In contrast, singular *they* is less acceptable with referential antecedents, for which there should be no ambiguity about gender.<sup>5</sup> The only difference between the sentences in Experiments 1 and 2 was the specificity of the antecedents. Experiment 1 used nonreferential antecedents such as “A student who . . .” or “A sailor who . . .,” which suggested that a hypothetical person was being discussed. In effect, these sentences discussed *Xs* in general—an entire class of people rather than a particular person. For this reason, it is perhaps not surprising that the pronoun *they*—a technically plural pronoun—was readily accepted for all four antecedent types. Indeed, when the antecedent was an indefinite pronoun, readers actually processed singular *they* faster than *he* or *she*, and the rules of prescriptive grammar have already been changed to accommodate this apparent preference. According to these same rules, using *they* to refer to a singular common noun is not acceptable, but our college-age readers did not seem to care. Indeed, singular *they* has become so common that postexperiment surveys of our readers revealed 51% did not believe that using *they* in place of *he* or *she* is ungrammatical.

In Experiment 2, when the antecedents were used referentially, singular *they* was not processed quite as readily. The antecedents in these sentences implied a specific person whose gender was presumably known. Undoubtedly, using the nonspecific *they* when *he* or *she* should be readily applicable seems unnecessarily opaque, and the reading times of our participants reflected this. The fact that *they* clauses were read more slowly than gender-matched-pronoun clauses suggests that using *they* with referential antecedents seems out of place. Indeed, using *they* in such cases might imply that the writer or speaker is trying to conceal the gender of the person being talked about, which is likely to give the reader or listener pause.

A norming study we performed using our experimental materials sheds further light on the status of singular *they* in the minds of our undergraduate readers. When the readers were asked to provide a pronoun for each experimental sentence, spontaneous use of singular *they*

<sup>5</sup>A between-experiments ANOVA showed that gender-matched pronouns (those that matched the gender stereotype of their antecedent) had a larger advantage over singular *they* in Experiment 2 than in Experiment 1, as reflected by a marginally reliable interaction,  $F(1, 193) = 3.23$ ,  $p = .07$ .



was common. For the nonreferential antecedents used in Experiment 1, 70% of the readers used *they* to refer to an indefinite pronoun at least once, and 57% used *they* to refer to a singular common noun at least once (most frequently the nouns were gender neutral). In contrast, for the referential antecedents used in Experiment 2, only 20% of the readers used *they* to refer to a singular common noun at least once.

Taken together, the results of these two experiments demonstrate that the increased use of singular *they* is not problematic for the majority of readers. We propose that in those few cases in which its use is considered surprising, the delays seen in comprehension are due not to the pronoun's ungrammaticality or to uncertainty over the intended referent, but to the suspicious opacity of using a nongendered pronoun for an antecedent whose gender is presumably known.

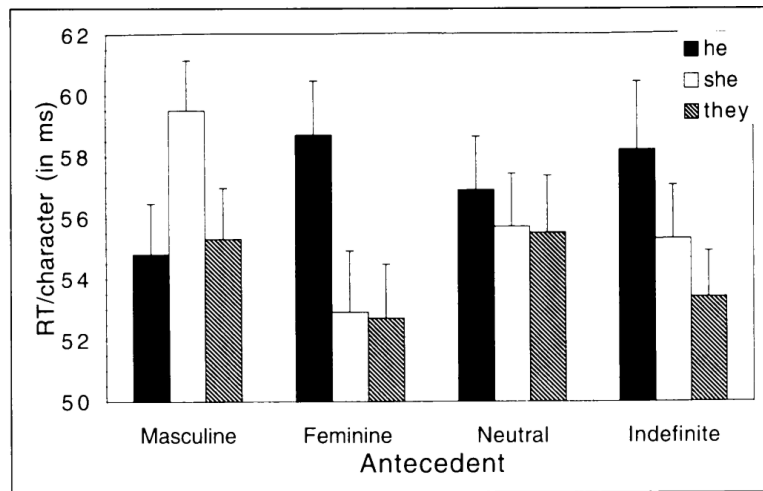
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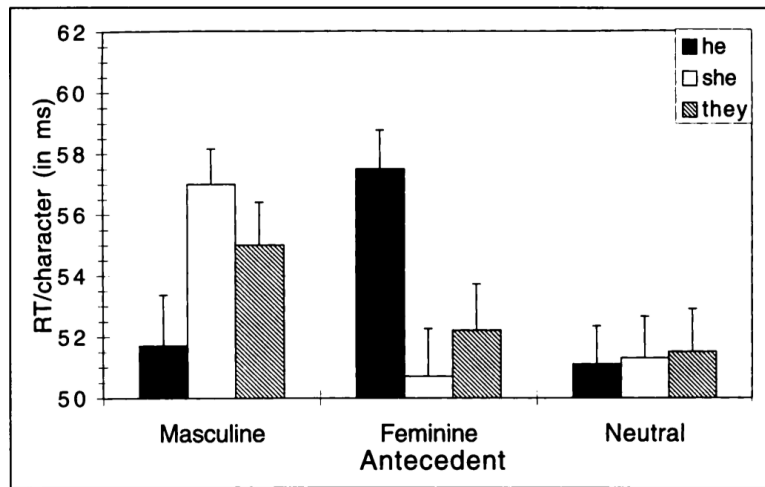
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**Fig. 1.** Effects of antecedent type (masculine, feminine, neutral, or indefinite) and pronoun (*he*, *she*, or *they*) on per-character reading time (RT) when sentences were used nonreferentially (Experiment 1).



**Fig. 2.** Effects of antecedent type (masculine, feminine, or neutral) and pronoun (*he*, *she*, or *they*) on per-character reading time (RT) when sentences were used referentially (Experiment 2).