

Gender *and* grammar and gender *in* grammar: Challenges and limits*

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Our research project examines a popular proposal of Gender-Inclusive Language in Italian, which involves using the symbol schwa, ‘ə’, to replace the final vowel of gendered words that, in the case of those referring to people, commonly indicate the referent’s gender. The overarching goal is to understand the efficacy and feasibility of such a proposal in a richly inflected gendered language, by discussing how gender—as a grammatical trait—is processed within the language itself, also acknowledging the challenges of a strictly binary linguistic gender system for gender non-conforming individuals. After summarizing studies conducted on role nouns in isolation, we report preliminary findings of an eye-tracking study to test subject-verb gender agreement during the reading of sentences in which role nouns in subject positions are gender-neutralized by schwa (e.g., maestrə ‘schoolteacher’, instead of maestro/maestra ‘male/female schoolteacher’). Results suggest a limited efficacy of schwa in neutralizing the role noun and overriding its gender stereotypical associations. Evidence also suggests the possibility of a female bias associated with the use of ‘ə’.

1 Introduction

Italian is a richly inflected gendered language with a binary gender system. Grammatical gender is a morphosyntactic trait on most nouns and requires coordinated agreement across several elements in the sentence, beyond nouns and pronouns. Italian is considered gender-transparent, in that nouns’ endings serve

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as reliable cues for gender, as most nouns ending in *-o* are singular masculine nouns, and those ending in *-a* are singular feminine nouns (Pescuma et al. 2021).

Nouns that refer to people can be gender-transparent or -opaque. Gender-transparent nouns express a consistent relation between their linguistic form and their referent's gender (e.g., *maestr-o*_[MASC]/*maestr-a*_[FEM] 'male/female schoolteacher'). In case of gender-opaque nouns, their ending does not provide any cue about their referent's gender. This is the case of common-gender nouns, which can refer to feminine/masculine referents, regardless of their final vowel (e.g., *cantante*_[MASC, FEM] 'male/female singer', *batterista*_[MASC, FEM] 'male/female drummer', *meccanico*_[MASC, FEM] 'male/female mechanic'). For these nouns, the referent's gender is conveyed by the gender-marked determiner (e.g., *il*_[MASC]/*la*_[FEM] *cantante*_[MASC, FEM]).¹

Thus, while nouns referring to inanimate entities are inherently feminine or masculine, and their gender is lexically and arbitrarily determined, most nouns referring to people express their referent's gender via morphosyntactic traits on the noun itself (as in the case of transparent nouns) or its determiner (as in the case of common-gender nouns).

Furthermore, it is a well-established fact that nouns referring to people, particularly role nouns, are strongly influenced by gender-stereotypes and gender-stereotypical expectations (e.g., Canal et al. 2015). Therefore, encountering an opaque role noun in Italian can lead the recipient to associate it to a man or a woman depending on the stereotype, similarly to what happens in languages like English in which ungendered nouns carry expectations about the referent's gender (e.g., *nurse* is more likely associated with a woman, *doctor* with a man; Oakhill et al. 2005). Additionally, in Italian, the masculine form is ambiguous between a gender-specific (i.e., referring to a man) and a gender-generic or underspecified form, which is conventionally used to refer to mixed groups or when the gender of the referent(s) is irrelevant.

Since the last decades of the past century, Gender-Fair Language (GFL) has been advocated, and then performed, to overcome the invisibility of women in society due to a male bias constantly reinforced by the use of masculine generic forms. As a consequence of this linguistic revolution (Sabatini 1993), society and institutions do (or try to) implement GFL in their communications. Moreover, many nouns that were traditionally common-gender have been progressively used as gendered nouns and thus declined in the feminine and masculine forms (e.g., the form *ingegnera*, 'female engineer', has been introduced alongside *ingegnere*, which was formerly common gender).

¹ Other opaque nouns are epicenes, that is, nouns that are inherently grammatically marked for masculine or feminine but can refer to people of any gender (e.g., *la vittima* 'the victim', *il pedone* 'the pedestrian', cf. Cacciari et al. 2011).

Most recently, the acknowledgement that a strictly binary gender conceptualization is inadequate to represent people's gender, which is now theorized as a spectrum, showed the limitations of a binary gender system in the language, which forces a (binary) representation of gender-identities in the language itself. Gender-Inclusive Language (GIL) has thus been proposed and used in different languages, especially by (but not limited to) LGBTQIA+ communities. In languages like English or Swedish, for example, a neutral pronoun (*they/hen*) has been introduced to refer to gender non-conforming individuals or to avoid any reference to gender. In gendered languages like French or German, other strategies are adopted, like the point median or the gender-star form that combine masculine/feminine morphemes on the same noun (e.g., *ingénieur·e* 'male/female engineer').

The GIL proposals for the Italian language typically include symbols (such as *ə*, *3*, or ***) at the end of words to replace vowels that, particularly in nouns referring to people, commonly indicate the referent's gender, so as to overcome the binary gender distinction (e.g., *sindacə* or *sindac** instead of *sindaco/sindaca* 'male/female mayor').

Although this solution might be welcomed by gender non-conforming individuals, there is no empirical evidence so far that these GIL forms are effective in neutralizing the noun's gender, reducing gender-bias, and avoiding the exclusion of gender minorities. Acknowledging the limitations that a gendered language like Italian imposes on gender non-conforming individuals, thus constraining their possibilities to express themselves and convey their gender-identity through language, it is paramount to understand the real efficacy of GIL proposals, so as to offer gender non-conforming individuals a viable path for self-expression.

By applying rigorous psycholinguistic methods and a multidisciplinary approach which involves linguistics, cognitive and social psychology, our research project aims to understand the efficacy of a popular proposal of GIL (Gheno 2021), namely the introduction of schwa (*ə*) to neutralize gender in language referring to people. The choice of testing *ə* over other proposals is, first, due to the fact that Gheno (2021) set out specific guidelines for its use and scope. Second, schwa differs from other popular proposals (e.g., the asterisk, as in *car* tutt**, instead of *cari/e tutti/e* 'dear all') in that it is also a phoneme and can thus be integrated into spoken language. Third, it has already been adopted in some communications by public institutions, by some editing companies, and it is highly debated in the media and press.

In the following, we present an overview of the studies conducted so far, and of the open questions that remain.

2 Gender-inclusive forms in isolation

In a first set of studies (published in Abbondanza et al. 2025), role nouns presented in isolation and neutralized in schwa (ə) were tested in their written and oral form. We aimed at understanding: (a) whether replacing the role nouns' final vowel with ə would lead to perceiving such nouns as 'neutral' with respect to gender; (b) whether stereotypical associations would emerge and for which type of role nouns; and (c) whether speakers of standard Italian would identify the schwa phoneme at the end of words as gender-neutral, considering that it does not belong to the standard Italian phonemic inventory.

Using a modified version of the task developed by Misersky et al. (2014), participants of three studies had to indicate how likely a noun referred to a man or a woman. In Study 1, gender-marked and common-gender role nouns were presented in their written canonical form. Study 2 used the same common-gender nouns as Study 1, presented in their written canonical form, whereas the final vowel of the gender-marked nouns was replaced with the ə symbol (e.g., *maestrə* 'schoolteacher'). In Study 3, the stimuli were auditorily presented and, in the case of gender-marked nouns, the ending vowel was substituted with the vowel sound $[\text{ə}]$.

Overall, results showed that ə reduces gender associations to an extent, although it proved more effective in the written than in the auditory form. However, its efficacy remains limited, particularly when the noun's final suffix, despite ending in schwa, continues to evoke the masculine form (e.g., *direttorə* 'director'), and when the noun is strongly gender-stereotyped (e.g., *casalingə* 'homemaker').

3 Gender-inclusive forms in sentences

Abbondanza et al. (2025) highlighted both the potential and the limitations of schwa as a strategy to neutralize the gender of role nouns. However, in gendered languages like Italian, gender is not limited to a semantic relation between a given noun referring to people (and its morphological form) and the referent's gender, as in languages like English. Rather, it has primarily a grammatical function, which links many elements of a sentence, not only nouns, in a coordinated agreement 'chain'. Consequently, introducing any GIL proposal would imply structural modifications to the whole sentence, profoundly altering the language, and potentially disrupting well-entrenched feature-matching conventions embedded in the linguistic system. Therefore, an in-depth investigation on how people incrementally process GIL forms in sentences is due, and it is the next step of our ongoing research.

While Abbondanza et al. (2025) tested nouns in isolation in an explicit task, in the following sections, we present the preliminary results of a more implicit and naturalistic task, namely an eye movement during reading experiment. In this case, we tested neutralized role nouns in sentences, and our aim was twofold: (a) to investigate whether *a* is processed as a gender-neutral suffix in subject-verb agreement; and (b) to test the efficacy of *a* in reducing gender-stereotypical expectations.

3.1 Method and results

We used the 108 role nouns (31 gender-marked, 77 common gender) from Abbondanza et al. (2025, Study 2). Following Gheno's (2021) guidelines, the gender-marked role nouns were rendered gender-neutral by substituting the final vowel with *a*, while common-gender nouns remained in their canonical form. All nouns were preceded by the gender-neutral definite article *la* ('the') and used in sentences with the same structure and regions (R) of interest (Table 1): a temporal or locative adjunct, R1; the noun preceded by the gender-neutral determiner *la*, R2; the verb (auxiliary + past participle), R3; a final adjunct or spillover fragment, R4. The verb (R3) was the first region in which subject-verb agreement was needed. Each item was created in three conditions (masculine / feminine / gender-neutral), changing the final morpheme on the verb's past participle (*o/a/a*). Each item was rotated across lists following a Latin square design

To address our second research question, the scores obtained for each role noun in Study 2 in Abbondanza et al. (2025) were used as norming scores of gender-stereotypical associations and entered as predictors in the eye movement analyses.

Participants of the eye-tracking study were 48 Italian native speakers, university students (37 self-identified as women, 9 as men, and 2 as other genders), who received course credits or monetary compensation for their participation. Participants were asked to read the sentences silently for comprehension at their usual pace while their eyes were monitored using a Tower Mount eye-tracker. To ensure task engagement, one-third of the trials included a yes/no comprehension question.

Table 1: Examples of the experimental sentences in the three conditions: masculine (verb ending in *-o*), feminine (verb ending in *-a*), neutralized (verb ending in *-ə*).

Cond	R1	R2	R3	R4
masc	Durante la trasmissione	lə cuocə	si è scordato	un ingrediente cruciale
fem	Durante la trasmissione	lə cuocə	si è scordata	un ingrediente cruciale
schwa	Durante la trasmissione	lə cuocə	si è scordatə	un ingrediente cruciale
	<i>During the broadcasting</i>	<i>the cook</i>	<i>forgot</i>	<i>a crucial ingredient</i>

Log-transformed reading time measures (first pass, go-past, and total reading times) and regression probability were analyzed by means of linear and logistic regression mixed-effects models. To answer the first research question and to test schwa during incremental processing in conditions of subject-verb agreement match/mismatch, all models included verb gender as the main predictor for the analyses. To evaluate the differential impact of the two standard gender suffixes on the verb (*-a/-o*) after a subject-noun neutralized with schwa, we set contrasts to compare verbs ending in schwa with feminine and masculine verbs, respectively. All models included verb's length and frequency, trial order, noun's form, and random intercepts for participants and items. Results show that verbs ending in schwa were always significantly slower than feminine verb forms across all reading measures (except for regression probability), while no significant difference was ever found between schwa and masculine forms (Figure 1).

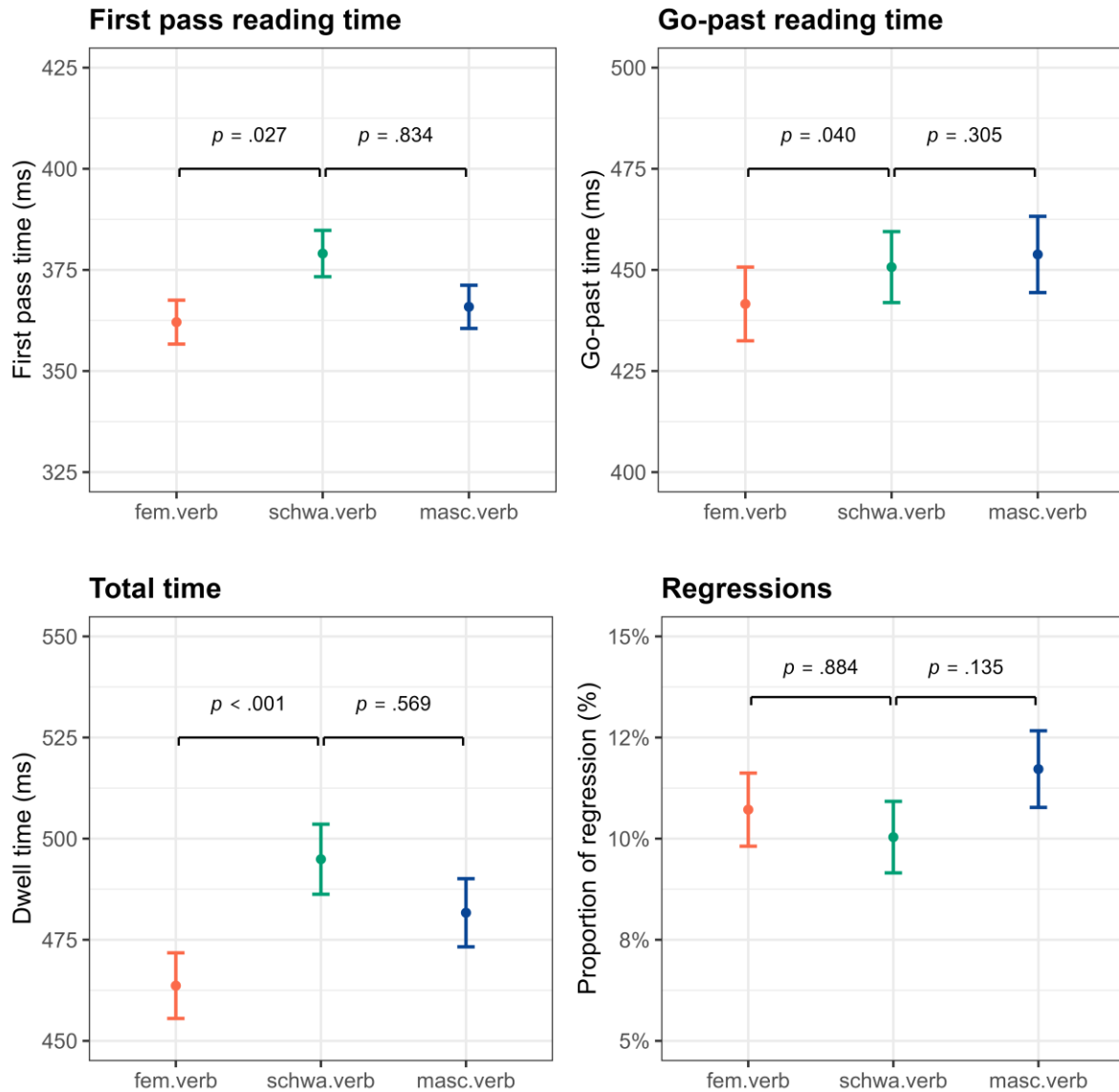


Figure 1: Average reading time measures (and SE) for first pass, go-past and total reading times, and proportion of regressions, in the verb region (R3).

To evaluate the impact of stereotypical-gender on reading times, we included the norming score as a predictor, in interaction with verb gender. Except for first pass reading time, results always showed significant interactions of verb gender and the noun's norming score (i.e., its stereotypical associations), although the strength of such effects depended on the measure considered. As illustrated in Figure 2, the masculine forms were the least affected by gender-stereotypical associations. The feminine verbs were the most affected: the more a noun was perceived as related to women, the fastest the (total) reading times of the verb ending in *-a*; the more a noun was perceived as related to men, the higher the probability of regressions on the feminine verb, typically signaling the need of revision, as is also captured by increased go-past time measures. Verbs ending in

schwa lay in between, with some indications of facilitation captured by lower regressions when the preceding role noun is associated to women. A clear impact of stereotypes emerges in total reading time, resembling the pattern found with feminine verbs but differing from that with masculine verb.

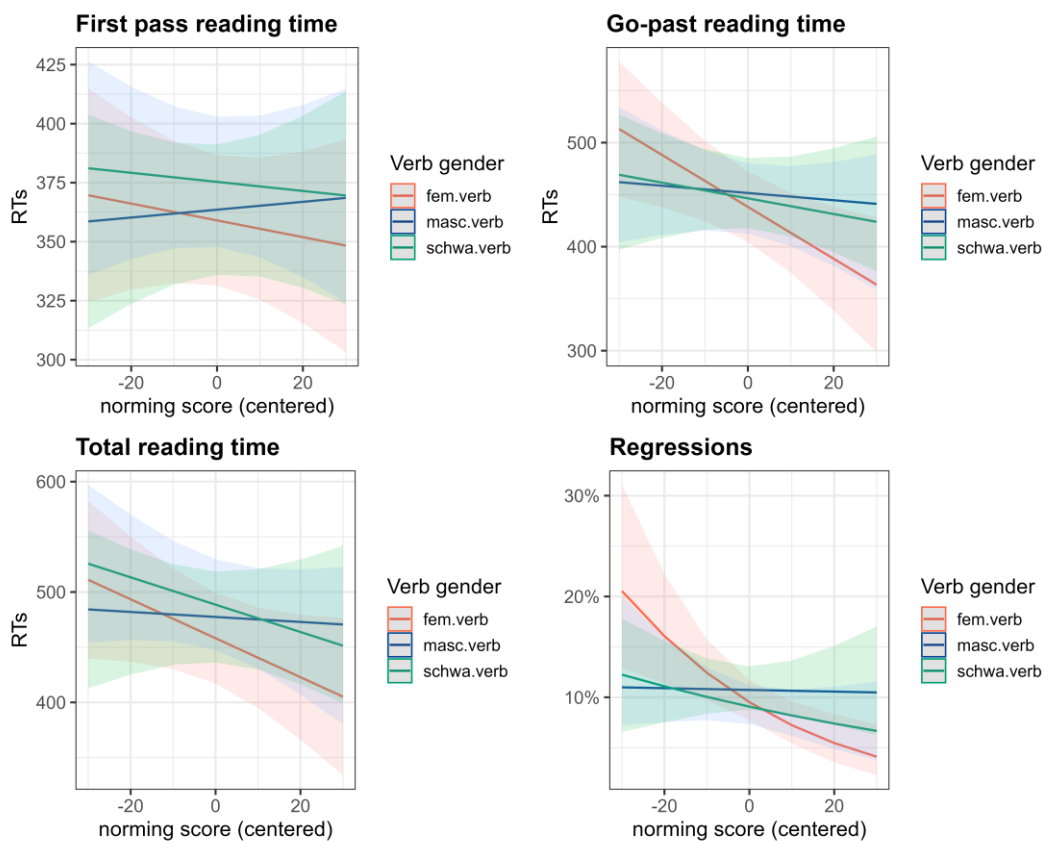


Figure 2: Model plots of first pass, go-past, total reading times and regression probability of Verb gender as a function of norming score.

As said, these results are preliminary. Additional analyses are planned to further investigate the variation within and between participants and items, and the role that individual-level variables (i.e., political orientation, familiarity with and attitudes towards GIL and schwa), collected with a questionnaire at the end of the eye-tracking session, may play in these initial results.

4 Discussion and conclusion

This line of research tackles the contemporary challenge of finding an effective and feasible form of GIL in languages, like Italian, characterized by a strict binary gender system and richly inflectional morphology. We decided to approach the challenge by testing the proposal of GIL in which gender is neutralized by means of schwa.

However, the schwa does not belong, as grapheme or phoneme, to ‘standard’ Italian, despite its presence in some Southern Italian dialects. Therefore, its efficacy and, perhaps most importantly, its feasibility, need to be subjected to rigorous scientific investigation prior to implementing this form of GIL in official or public communication. Additionally, if the schwa proves truly effective in neutralizing gender in the language, then it has, in principle, the potential to also counteract the perpetuation of gender-stereotypes.

The results gathered so far indicate that, in evaluating role nouns in isolation (Abbondanza et al. 2025), replacing the final vowel with the *ə* grapheme did reduce gender associations but it was less effective as a phoneme. Indeed, data indicated that the phoneme was often perceived as masculine, likely due those Italian Southern dialects in which final vowels are reduced to /ə/. This is particularly relevant for morphologically complex suffixes like *-ore* and *-ice*, since the masculine form *collaboratore* (‘male collaborator’) sounds identical to the gender-neutralized *collaboratorə* in such dialects, while the feminine form *collaboratrice* (‘female collaborator’) remains different. This asymmetry may favor masculine interpretation, since such variants are widely popularized by Italian media (e.g., movies, TV shows). Additionally, neutralized role nouns strongly associated with women and men (e.g., secretary, entrepreneur, respectively) still showed stereotypical-gender associations, likely reflecting the existing gender segregation in such professions.

When processing sentences in a naturalistic reading task, our expectation was that readers would slow down in subject-verb mismatching agreement conditions. In our task, all the role nouns were gender-neutralized with schwa (either on the article and/or the noun), thus making the condition in which the verb ended in schwa, albeit unusual, the subject-verb “matching” condition. Conversely, both the verbs ending in *-a* and *-o* counted as mismatching in terms of agreement. However, our findings showed that reading times were the fastest in the case of verbs ending in *-a*, while they were slower in the case of verbs ending in *-o* and *-ə*. Across all measures, no difference emerged between masculine and schwa verb forms, while feminine verbs were read faster than those ending in schwa, contrary to what would be expected based on subject-verb agreement. The fact that a verb ending in *-ə* took longer, despite being the matching condition, might not be surprising per se and might be due to less familiarity with the symbol. What is crucial, instead, is the asymmetrical cost of *-a* and *-o* endings, which should be equally processed as mismatching after a noun ending in *-ə*. We speculate that the reading advantage of the verb ending in *-a* has to do with the visual similarity between the grapheme ‘ə’ and the feminine singular and plural forms, ‘a’ and ‘e’, respectively. If this were the case, it would indicate a female bias, visually triggered by *ə*. Furthermore, the efficacy of schwa in neutralizing or attenuating gender-stereotypical expectations associated with

role nouns seems limited. Specifically, if the schwa were effective in neutralizing nouns, it should reduce their gender-stereotypical expectations. Instead, feminine verbs were read faster and induced fewer regressions when the preceding noun was strongly gender-stereotyped and rated as referring to a woman; conversely, slower reading times and more regressions emerged on feminine verbs when the noun was rated as referring to a man. Again, this suggests a female bias associated to role nouns ending in schwa.

As noted, we are just at the beginning of our investigation, and further research is needed.

To conclude, the studies conducted so far highlight the complexities of finding a viable GIL form for gendered languages. From a strictly linguistic point of view, it is important to weigh the benefits against the drawbacks of modifying the morpho-orthographic and morpho-phonological linguistic system by introducing changes at the morpho-syntactic level. For proposals of GIL that rely on additional symbols, a key concern for future research is how these forms affect text processing, particularly with respect to potential challenges for individuals with reading difficulties or other fragilities. In this regard, there is a genuine risk that attempts to enhance inclusivity for one group may inadvertently result in the exclusion of another. Finally, it is important to investigate the relation between gender issues *and* grammar without neglecting the role of gender as a grammatical trait *in* the grammar itself.

From a sociopsychological point of view, other issues need to be considered. Active minorities (e.g., LGBTQAI+ groups), who fight for the recognition of their rights, can effectively influence the majority (Moscovici 1976). To do that, active minorities need to be visible to be heard. And here comes a paradox. Visibility is often mobilized as a necessary strategy for recognition and inclusion, yet, once mainstream institutions incorporate these identities, visibility tends to be neutralized through processes of normalization. Warner (2002) and Sedgwick (1990) argue that queer counterpublics continually oscillate between absorption into dominant discourses and the need to reassert difference through new performative acts. Ahmed (2012) argues that institutions frequently celebrate diversity as a marker of openness, while simultaneously depoliticizing differences.

Majority groups may be well-intentioned. Nonetheless, it is important to consider the delicate equilibrium in which active minorities live their lives. The need for them to be visible and the attempt of the majority to include and normalize them may go in opposite directions and respond to different individual and societal needs. This tension underscores the importance for research and policy recommendations to remain sensitive to the distinct visibility needs of minority groups.

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