

Psychology, Prescriptive Grammar, and the Pronoun Problem

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ABSTRACT: *People want to know the most acceptable words and rules for using English, and the goal of prescriptive grammar is to determine and to teach those rules. The present article argues that psychology can help to develop principles and procedures for prescriptive grammar. As a first step in that direction, an experimental technique is reported for evaluating the prescription of he to mean "he or she." Subjects who read textbook paragraphs containing prescriptive he referring to neutral antecedents, such as person, mis-comprehended the antecedents as male 40% more often than did subjects who read identical paragraphs with prescriptive he replaced by a previously unencountered neologism. Programmatic implications of these results for the reformation of prescriptive grammar are discussed.*

Psychologists have long recognized the need for prescriptions within their own small province of English. The *Publication Manual* of the American Psychological Association is a miniature prescriptive grammar for psychological literature, a small subdivision of the more comprehensive prescriptive grammar needed for the language as a whole. But psychologists have viewed larger prescriptive issues as the exclusive concern of linguists and have largely ignored the prescriptive grammar of English as a fruitful or relevant domain for psychological inquiry.

The present article argues that these views are mistaken; that linguists are unlikely to solve or even to investigate prescriptive problems; that existing prescriptions incorporate important psychological assumptions that warrant experimental testing; that psychological methods, data, and theories are needed to assess potential prescriptions; and that psychology has much to gain by investigating prescriptive issues and by helping to develop principled procedures for prescriptive grammar.

The Nature and Goals of Prescriptive Grammar

People using English want and need to know the most acceptable words and rules to learn in order to communicate effectively in formal contexts. The goal of prescriptive grammar is to determine and to teach those rules. Neither the desire nor the need for prescriptive grammar is likely to diminish over time. Children and members of other cultures who wish to learn English will continue to want to know the most acceptable forms to learn. And, like every other living language, English will continue to change and to give rise to new alternatives; therefore, prescriptive grammar will continue to be needed to determine the most useful alternative words and phrases for future speakers and writers.

Linguists are unlikely to become involved in assessing potential changes in prescriptive recommendations, since the goal of linguistics is to describe the regularities underlying existing language use. Linguists regard their descriptive approach as incompatible with the aim of changing what is found in a speech community and so have avoided prescriptive issues, conscientiously attempting not to alter the speech patterns they study. The lack of cooperation, fruitful interaction, or even contact between linguists and students of prescriptive grammar over the last half century (see Bodine, 1975) is therefore likely to continue indefinitely. And a "leave it to linguistics" attitude in psy-

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chology will mean that future prescriptions for changes in the rules of English grammar are likely to remain narrow and uninformed, motivated by unconscious biases rather than by general principles (Bolinger, 1975).

ASSUMPTIONS USED TO SUPPORT THE PRESCRIPTIVE "HE"

The present study examines a single prescriptive issue in detail—the use of *he* to mean "he or she." The original prescription began over 250 years ago and, according to the evidence of Bodine (1975), reflected the social biases of male prescriptivists rather than their professed goals of precision, elegance, and logical form. Contemporary writers continue to use the prescriptive *he*, which is still recommended in over 85% of a recent sample of American textbooks (Bodine, 1975). Current attempts to analyze and defend this prescription incorporate sophisticated but untested psychological assumptions, three of which can be outlined as follows:

The *pronominal-surrogate assumption* maintains that pronouns simply stand for their antecedents and contribute no new meaning of their own. In particular, it is assumed that prescriptive *he* simply designates a sex-indefinite antecedent, such as *person*, without excluding women or adding new meaning of its own.

The *semantic-flexibility assumption* maintains that the meaning of a word is highly flexible and can be established by declaration. In the case of nouns, the strategy of proposing and adopting a special-purpose definition for a common noun in some new domain of use is remarkably common (see Britton, 1978). For example, psychologists defined and used the word *reinforcement* in a sense far removed from its original dictionary definition, and this special-purpose definition has now become widely accepted. People often experience little or no difficulty in understanding or learning special-purpose definitions, and if this is true in general, then Humpty Dumpty was correct in maintaining, "When I use a word, it means just what I choose it to mean, neither more nor less" (Carroll, 1872/1936). Likewise, Burgess (1976) would be correct in declaring his intended use of prescriptive *he* to be unambiguously neutral and in accusing those who thought otherwise of forcing "chauvinistic sex onto the word."

The *context assumption* also rests on a questionable analogy between nouns and pronouns. Un-

TABLE 1

Phonemic Representations, Mean Reading Times (in Seconds), and Probability of Mispronunciation and Comprehension Errors for Four Pronouns

Property	Pronoun			
	E	e	tey	he
Derivational base form(s)	he and she	he and she	they	unknown
Nominative				
Orthography	E	e	tey	he
Phonology	[iy]	[iy]	[tey]	[hiy]
Possessive				
Orthography	Es	es	ter	his
Phonology	[iyz]	[iyz]	[teyr]	[hiʒ]
Accusative				
Orthography	E	e	tem	him
Phonology	[iy]	[iy]	[tem]	[him]
Reflexive				
Orthography	Eself	eself	temself	himself
Phonology	[iyself]	[iyself]	[temself]	[himself]
Mean reading time	42.22	39.61	43.69	37.05
Probability of pronunciation errors	.10	.29	.21	.00
Probability of comprehension errors	.10	.20	.10	.50

Note. Phonemic representations follow Trager and Smith (1951).

der the context assumption, prescriptive *he* resembles an ambiguous noun that carries out multiple semantic duties but is nevertheless readily interpreted on the basis of situation or sentence context. For example, when listening to a gasoline commercial, we don't confuse a *tank* for gasoline with a *tank* for military destruction. And under the context assumption, we do not confuse prescriptive *he* in contexts referring to people with specific *he* in contexts referring to men.

Testing the Validity of Assumptions Supporting Prescriptive He

To test these psychological assumptions, subjects in the present study read paragraphs containing prescriptive *he's* referring to neutral antecedents (e.g., *person*, *writer*) and then answered a series of multiple-choice comprehension questions, one of which indirectly, and unbeknownst to the subjects, assessed comprehension of prescriptive *he* and its antecedents.

The experiment also examined how subjects comprehended a new pronoun encountered for the first time without explanation, under the same conditions as the subjects reading prescriptive *he*. The main question was the communicative efficiency of substitutive neologisms, a potential solution to the problem of prescriptive *he* with advantages discussed in Spencer (1978). To determine whether our procedures could discriminate between highly similar alternatives within the class of substitutive

neologisms, the examples selected (*E*, *e*, *tey*) were all derivatives of existing pronouns (see Table 1).

METHOD

Materials. The materials were chosen to resemble those encountered in the everyday experience of university students: paragraphs from a textbook in current use on writing (Macauley & Lanning, 1964). The two paragraphs were modified only slightly to maintain equivalent length (about 150 words) and number of prescriptive *he*'s ($n = 12$ in nominative, possessive, and accusative cases). The prescriptive *he*'s referred to relatively neutral antecedents, which 80 subjects of MacKay and Fulkerson (1979) rated, on the average, 53% male and 47% female: *novice*, *beginner*, *writer*, *student*, *author*, *character*. Three other versions of the paragraphs were formed by replacing prescriptive *he* with *E*, *e*, or *tey*.

Subjects and procedure. Forty undergraduates from the UCLA subject pool received course credit for their participation. They were randomly assigned to one of four groups, with the restriction that there be five males and five females per group. One group read paragraphs containing prescriptive *he*, another read paragraphs containing *E*, the third read paragraphs containing *e*, and the fourth read paragraphs containing *tey*.

A female experimenter instructed each subject individually as follows:

This is a study of reading comprehension. You will read paragraphs either silently or aloud as rapidly as possible. The beginning and end of each paragraph are marked with the words *START* and *STOP*, which you are to read aloud in order to facilitate timing. You will then be given some brief questions to test your comprehension of the paragraphs. The paragraphs may contain one or more new words that you have never seen before, but read them as best you can and concentrate on understanding the meaning of the paragraphs without lingering on new words. Are there any questions?

The subjects read one paragraph aloud and the other silently, with the order of paragraphs and reading conditions counterbalanced across subjects. After each paragraph they used IBM cards to answer three multiple-choice comprehension questions. One pronoun-comprehension question indirectly tested comprehension of the antecedents of prescriptive *he* (*E*, *e*, or *tey*), for example, "The beginning writer discussed in the paragraph is: (a) male, (b) female, or (c) either male or female." The remaining paragraph-comprehension questions tested comprehension of other aspects of

the content of the paragraph, for example, "Students reaching the end of their school-going days will need to remember (a) how they can achieve style, (b) whatever sensible advice writers or critics have given them, (c) the maximum economy of language, or (d) the most important principle of modern fiction." Following the comprehension questions, which were identical for all four paragraph conditions, the subjects reading *E*, *e*, and *tey* paragraphs defined what they thought their neologism meant.

RESULTS

Mean reading time was 12.51 sec faster for paragraphs that were read silently (34.31 sec) than for paragraphs read aloud (46.82 sec), and 4.79 sec faster for *he* paragraphs (37.05 sec) than for neologism paragraphs (41.84 sec). On the average, then, each encounter with a novel pronoun added about .40 sec to the mean reading time. However, the newly encountered pronouns did not hinder comprehension of the paragraphs, since there was no significant difference in answers to the paragraph-comprehension questions for *he*, *E*, *e*, and *tey*, and all were significantly better than chance (i.e., than 25% correct).

Moreover, pronoun-comprehension errors were significantly more frequent for *he* than for *E*, *e*, and *tey*, $\chi^2(3) = 43.96$, $p < .001$. Specifically, 80% of the subjects who had read *he* paragraphs made at least one pronoun-comprehension error as opposed to 20% of the subjects who had read paragraphs containing one of the neologisms. The probability of error—that is, of responding (a) *male* or (b) *female* rather than (c) *male or female*—was .50 for *he* paragraphs as compared to .13 for neologism paragraphs, and both probabilities differed significantly ($p < .01$) from chance (33% correct). The females reading *he* paragraphs made exactly as many errors as the males. All of the errors involved choosing *male* rather than *female*, a difference significant at the .01 level, $\chi^2(1) = 10.0$.

Availability of the "he or she" concept for *E*, *e*, and *tey* initially seemed about equal. The probability of error for pronoun-comprehension questions (see Table 1) was .10 for *E*, .20 for *e*, and .10 for *tey*. Errors were evenly distributed over the first and second paragraphs for *E* and for *e*, but for *tey*, all of the errors occurred in the second paragraph. The subjects' definitions following the comprehension questions indicated that this find-

ing reflected a difference in how they interpreted the neologisms. Whereas they consistently interpreted *E* and *e* to mean "he or she," they initially interpreted *tey* as a misspelling of *they* and responded (c) *male or female* as the best possible choice. But as they continued to encounter *tey* in conjunction with a singular verb, some abandoned the plural interpretation and responded (a) *male* more often.

Finally, pronunciation errors were scored when a neologism was pronounced incorrectly. Among the possessive forms, for example, *es* was pronounced [ez] and [es] rather than [iyz], and *ter* was pronounced [ter] rather than [teyr]. The possessive case created the greatest difficulty for all three neologisms, but there were fewer errors overall for *E* (10) than for *tey* (20) or *e* (28), a difference significant at the .001 level, $\chi^2(2) = 42.2$.

DISCUSSION

The results contradicted all of the assumptions outlined in the introduction. Implications of these findings for theories of comprehension are as follows:

The pronominal-surrogate assumption. The notion that prescriptive *he* adds no new meaning to its antecedents is inaccurate, since 80% of the subjects on 75% of the trials comprehended neutral antecedents of prescriptive *he*—such as *person*, *writer*, or *beginner*—as *male* rather than *male or female*. These findings corroborate those of Kidd (1971), Martyna (1978), and MacKay and Fulkeron (1979) and suggest that pronouns do more than just stand for nouns.

The semantic-flexibility assumption. The idea that word meanings are flexible and can be established by declaration is inaccurate. Although our literature, our schools, and our prescriptive grammars have advertised the neutrality of prescriptive *he* for over two centuries, the present data indicate that prescriptive *he* is not neutral. Some word meanings, including the male meaning of *he*, are so salient or so strongly engraved in semantic memory that no special-purpose or context-restricted meaning can displace them. Also, pronouns may be a poor vehicle for carrying special-purpose definitions, since interpretation of pronouns is already so flexible, varying with each new antecedent. Semantic incompatibility may play a role as well. A viable secondary meaning must be compatible with the primary meaning of an ambiguous word; in the case of prescriptive *he*, how-

ever, the prescribed meaning is intended to include women and therefore contradicts the primary meaning, which excludes them. As a consequence, the "he or she" concept is usually unavailable with *he* as the generic pronoun, but it becomes readily available with a novel replacement.

The context assumption. Despite the context of the paragraphs in the present study, only 50% of the trials with *he* resulted in generic interpretations and only 20% of the subjects consistently gave generic interpretations to the prescriptive *he*. This finding indicates that context is ineffective in resolving the ambiguity of prescriptive *he*, and the question is why. The impoverished semantic structure of pronouns provides one explanation. Alternate interpretations of ambiguous nouns, such as *tank*, differ by large numbers of referential dimensions, and the context can relate to any of these dimensions to resolve the ambiguity; however, alternate interpretations of *he* differ by only one value within a single dimension (gender), making contextual disambiguation more difficult. Moreover, English has evolved sophisticated syntactic devices for modifying content words such as *tank*, unlike *he*, which allows no disambiguating modifiers whatsoever.

The manner in which we normally use pronouns in comprehending sentences may also limit the resolving power of context. People generally rely on pronouns and other function words to resolve the ambiguities of nouns, rather than to create new ambiguities of their own (see Bratley, Dewar, & Thorne, 1967). For example, listeners seem to wait for use of *she* or *he* to enable them to determine gender when sex-indefinite nouns, such as *child*, are used to designate specific individuals. Of course, lacking a truly generic pronoun for third-person singular, the only reason contemporary speakers may attempt to resolve the gender of sex-indefinite nouns is to avoid errors in using the only pronouns available: *she* and *he*.

Positive feedback due to the salience of the male interpretation of prescriptive *he* may also limit the resolving power of context. The argument is as follows: With the help of context people normally perceive one and only one interpretation of ambiguous words, but they perceive salient or common meanings more readily than nonsalient or uncommon ones (see MacKay, 1970). As a result, salient or common meanings may be perceived even when context favors the alternate interpretation. In particular, speakers of English encounter the specific use of *he* about 10 to 20 times as often as

the supposedly generic use (see Graham, 1973), and they tend to perceive the male interpretation of prescriptive *he* even in clearly generic contexts. The end result is a positive feedback cycle: The relative infrequency of prescriptive *he* fosters nongeneric interpretations, but the more frequently prescriptive *he* is interpreted nongenerically, the greater the likelihood of nongeneric interpretations in the future. This positive feedback cycle explains the relative ineffectiveness of context in the present study. The fact that positive feedback increases as a function of age and experience also explains why adults, who habitually use prescriptive *he*, rarely perceive the conflict of gender between the pronoun and its antecedent, unlike children who are encountering prescriptive *he* for the first time (see Nilsen, 1977).

The Implications for Prescriptive Grammar

The present data indicate that prescriptive *he* is defective and confirm the importance of avoiding its use. As presumed in the "Guidelines for Non-sexist Language in APA Journals" (APA Publication Manual Task Force, 1977), prescriptive *he* clearly influences normal comprehension in such a way as to create or maintain sex bias. However, the present experiment represents only a first step in the search for new principles and procedures for prescriptive grammar in order to prevent defective prescriptions in the future. Many other problems remain. One is how to evaluate disparate prescriptive alternatives. For example, further research is needed into the general costs and benefits of neologisms such as *E* to permit comparison with already existing alternatives such as *he* or *she* and singular *they*, which introduce problems of their own. The present data indicate that encountering a neologism without explanation is sometimes sufficient to accurately convey a new concept, or rather to make available an already existing, independently formed concept, because the subjects probably inferred that *E* and *e* meant "he or she" on the basis of real-world experience with referent classes, such as *writer* or *person*. The data also show that some neologisms are superior to others in conceptual availability and first-encounter pronounceability, since *tey* was more frequently misinterpreted and *e* was more frequently mispronounced than *E*.

Whether *E* is the best possible neologism is another matter. Determining a "best possible" neologism presents an unsolved problem of con-

siderable theoretical magnitude. Current theories suffice to distinguish between actual versus possible versus impossible words without regard to concepts, but such a project requires new theories for discriminating within the indefinitely large set of possible words to find the one most suited for expressing a particular concept like "he or she."

Of course, determining the best possible lexical alternative for expressing this or any other concept may be unnecessary for practical purposes. Since we mainly want something better than what we now have, ranking the best available alternatives may suffice. The present study illustrates one procedure for ranking potential prescriptions with respect to communicative efficiency. The procedure is applicable not just to the "generic" masculine—which, as Jespersen (1924) pointed out, is "decidedly a defect in the English language" (p. 231)—nor to defective words in general, nor even just to existing words and rules, but to neologisms and projected rules as well. It is to be hoped that such procedures will be used in advance of future prescriptions, rather than 250 years after the fact, as in the present case.

In the meantime, other psychological assumptions underlying the prescriptive use of *he* remain to be explored. For example, Lakoff (1973) assumed that misinterpretation of prescriptive *he* incurs no serious psychological or social consequences, and that although offensive to many, prescriptive *he* is a minor problem that is "less in need of changing" than other aspects of sexist language are (p. 75). Others reject this triviality assumption and consider prescriptive *he* a loaded term, with subtle and powerful effects on the self-concepts and attitudes of both men and women (e.g., see Geiwitz, 1978; Miller & Swift, 1976). Moreover, prescriptive *he* has too many characteristics in common with highly effective propaganda techniques for the latter view to be ignored. As a device for shaping attitudes, prescriptive *he* has the following advantages: frequency (over 10⁶ occurrences in the course of a lifetime for educated Americans; see MacKay, in press); covertness (questioning the use of prescriptive *he* is difficult, since it usually is not intended as an open attempt to maintain or alter attitudes); early age of acquisition (prescriptive *he* is learned long before the concept of propaganda itself); association with high-prestige sources (it is especially prevalent in some of society's most prestigious literature, such as university textbooks); and indirectness (prescriptive *he* presents its message indirectly, as if

it were a matter of common and well-established knowledge). It is also possible that prescriptive *he* has more general effects on the degree to which people allow evaluative attitudes to dominate their intellectual processes (see Leech, 1974, p. 61).

The triviality assumption clearly raises issues that are central to theories of thought and attitudes as well as to theories of language behavior. Testing that assumption therefore promises theoretical and empirical rewards for psychology in general. And since other disciplines are unlikely to undertake such research, psychology has a responsibility to do so, as well as to help find an acceptable alternative to prescriptive *he* along with acceptable principles for prescriptive grammar in general.

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