On the goals, principles, and procedures for prescriptive grammar: Singular *they*

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ABSTRACT

This paper examines the goals of prescriptive grammar and the causes and consequences of the rift between prescriptive and theoretical linguistics. It also proposes a principle for guiding prescriptive recommendations in the future as well as a theoretical framework and a procedure for predicting the consequences of prescriptive recommendations. The procedure illustrates a hypothetical prescription: the substitution of singular *they* for prescriptive *he*. Projected benefits of the prescription include neutral connotation, naturalness, simplicity, and lexical availability. Projected costs include covert and overt referential ambiguity; partial ambiguity; conceptual inaccuracy; loss of precision, imageability, impact, and memorability; bizarreness involving certain referents and case forms; distancing and dehumanizing connotations; unavailability of the 'he or she' denotation; potentially disruptive and long-lasting side effects on other areas of the language. Procedures are also illustrated for determining the relative frequency of such costs and benefits and for estimating the relative disruptiveness of the costs in normal language use. Implications of the data for several issues of general interest to linguistics and psychology are explored. (Ambiguity, language change, prescriptive grammar, theoretical linguistics, language planning, pronouns, neologisms.)

INTRODUCTION

The present study examines the causes and consequences of the long-standing rift between prescriptive and theoretical linguistics and illustrates what needs to be done to correct it. Surface causes of the rift are easy to find. Prescriptive linguists view theoretical linguistics as irrelevant to their goal of teaching language use, whereas theoretical linguists view prescriptive problems as unfundamental and irrelevant to their goal of describing the principles underlying language use. For example, with regard to questions of usage such as *aint* vs. *isn't,* Bloomfield (1933) argued that "This is only one of the

problems of linguistics and since it is not a fundamental one, it can be attacked only after many other things are known."

Descriptivists never had the chance to attack the *aint* vs. *isn't* problem: prescriptivists in the 1930s favored *isn't* and since then, formal use of *aint* has been proscribed virtually out of existence. Despite the vast increase in linguistic knowledge over the last half century, the rift between descriptive and prescriptive linguistics has continued to widen. Since the time of Bloomfield, theoretical linguistics has moved away from questions of usage to more formal issues of competence. As Bever (1975:65) points out, modern linguists "have reveled in the luxury of being able to ignore why we say what we say, how we say it and how others understand it." This exclusive concentration on formal issues has widened the rift since prescriptive problems concern language use: people want to know the most accepted or acceptable forms to use or acquire in learning a language. For both the teacher and the learner, usage problems are real and demand immediate solutions which theories of competence simply cannot provide.

Consequences of the rift have been unfortunate for both prescriptive and theoretical linguistics. By failing to help solve even the simplest and most clearly formulated prescriptive problem, theoretical linguistics has developed an unhelpful theory, divorced from its base of application, and as a result, has very few practical accomplishments to its credit. And by ignoring linguistic knowledge, prescriptivism has remained narrow, uninformed, and unprincipled, following arbitrary, unconscious or poorly formulated criteria and biases rather than general rules or principles. For example, Bodine (1975) argues that prescription of *he* (see Table 1) rather than *they* (see Table 2) as the sex-indefinite pronoun reflects the unconscious androcentrism of male prescriptivists, rather than their professed goals of precision, elegance and logical form.

What factors have prevented development of principles for prescriptivism in the past? First, there is a widespread misunderstanding of the nature of prescriptive issues which concern the prediction of optimal usage. The fundamental aim of prescriptivism is to predict which among a set of alternative forms or rules will prove most useful for future speakers to learn and use in some (usually formal) context. Failing to recognize this aim, prescriptive linguists have employed criteria which are either irrelevant or difficult to apply to observable modalities of use (learning, production, and comprehension). Examples of this failure are the criteria of elegance and correctness based on analogies with Latin (see Drake 1977), which do little more than summarize or rationalize subjective opinion.

A second factor is the inadequacy for prescriptive purposes of the traditional paradigm of linguistic science. Under this paradigm, linguists generate intuitive judgments of grammaticality or acceptability for a limited and carefully selected set of examples and then develop a theory to explain

TABLE 1. *Functions and examples of prescriptive he*

Function	Example
Mixed-sex distributive	*When voters elect a legislator, he has four years in office.*
Nonhuman reference	*A fox tucked his tail between his legs and ran off.*
Sex-unknown	*Someone left his sweater.*
Sex-concealed	*During the closed session, one of the committee members said he considered the bill worthless.*
Mixed-sex disjunctive	*If either John or Mary comes, I will meet him at the airport.*
Deity function	*God manifests Himself in many ways.*

TABLE 2. *Functions and examples of singular they*

Function	Example
Mixed-sex distributive	*When voters elect a legislator they have four years in office.*
Nonhuman reference	*A fox tucked their tail between their legs and ran off.*
Sex-unknown	*Someone left their sweater.*
Sex-concealed	*During the closed session, one of the committee members said they considered the bill worthless.*
Mixed-sex disjunctive	*If either John or Mary comes, I will meet them at the airport.*
Corporate reference	*If Seattle calls tell them I'm out.*

these examples. Such theories are *post hoc* in nature and *in principle* incomplete or inadequate for solving prescriptive issues, which require predictions such as, "Form X will prove more useful than form Y for future speakers to learn and use to express meaning Z in formal contexts."

Basic flaws also become apparent when traditional linguistic methods are applied to prescriptive issues. The problem with intuitive judgments of grammaticality or acceptability is not just lack of consensus (the most common complaint in all areas of linguistics) but the equally serious problem of spurious consensus. For example, as Bodine (1975) notes, unanimous intuitive consensus that a form such as singular *they* is grammatically unacceptable could reflect long-standing social biases which have nothing to do with the linguistic merits of singular *they*. The use of carefully selected examples is also unsatisfactory since unrepresentative examples with unspecifiable frequency characteristics can distort the facts of use which are needed for evaluating prescriptive alternatives.

The use of analogy is likewise unsatisfactory for prescriptive purposes. Cross language analogies such as the one between Latin and English discussed in Drake (1977) are easily recognized as fallacious. However, analogies within a language or even within the same subsystem of a language are also unreliable. For example, it might be argued that changes in second

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person pronouns in English (obsolescence of singular *thou*) illustrate an ongoing pronominal drift toward the plural, thereby supporting the prescription of singular *they*. Structural differences between the two classes of pronoun, however, conspire against such an analogy. Third person singulars (*he, she,* and *it*) employ distinctions in gender, animacy, and humanness which were absent from the obsolescent singular *thou*. Differences in how the two classes of pronoun are used also conspire against the analogy. Second person pronouns represent a finite class of listeners which is always understood and present in consciousness as part of the conversational field (Chafe 1974). As a consequence, successful communication seldom requires the specification of second person number, and speakers can often omit the pronoun entirely in the case of commands. The situation is different for third person pronouns. Third person pronouns represent a large and multifaceted set of entities which may or may not be present in consciousness as part of the conversational field. And, as will be shown, specifying number for third person pronouns is often essential for successful communication.

What is needed for developing principles of prescriptive grammar? One prerequisite is a theory of language use, including as components the learning, production, and comprehension of English. It is not necessary that the theory be complete or accurate in every detail, only that it be the best available and deal with the mechanisms underlying use so as to enable predictions. Also needed are techniques for applying the theory to particular prescriptive problems so as to predict the consequences of alternative prescriptive recommendations. Specifically, the techniques must determine the *utility* of an expression relative to all other means of expressing the same concept, including not just already available or existing means but potential means such as neologisms as well. Given such techniques it would be possible to establish as an initial goal, a principle of prescriptive recommendation such as the following: *a usage should be prescriptively recommended if and only if the benefits of the usage outweigh the costs, where benefits facilitate communication (i.e. the comprehension, learning, and production of the language) and costs make communication more difficult (relative to all other means of expressing the same concept).*

By way of illustration, the present study examines a well-known prescriptive problem and some hypothetical prescriptions for solving the problem, within the framework of current, generally accepted theories of comprehension, learning and production (cf. Clark & Clark 1977). In particular, it illustrates a technique for estimating the costs and benefits of a prescriptive recommendation for a sample of formal uses within the comprehension modality.

The problem concerns the use of prescriptive *he*. English lacks a sex-indefinite pronoun for third person singular and for the past two hundred and fifty years prescriptive grammars have been recommending the use of *he* to

mean 'he or she.' However, prescriptive *he* is inadequate for this purpose since contemporary speakers neither use nor comprehend prescriptive *he* consistently to mean 'he or she.' (See MacKay & Fulkerson (1979), Martyna (1978), and Kidd (1971) among others for convincing experimental demonstrations.)

The present study recognizes the inadequacy of prescriptive *he* and addresses the issue of the best change(s) to make. One of the proposed changes is the use of *they* as a singular. Bodine (1975) demonstrates that singular *they* has been around for many centuries and continues to be used at least occasionally despite prescriptive opposition. Moreover, Green (1977) and Miller and Swift (1976) predict that singular *they* is the candidate most likely to succeed in replacing prescriptive *he.*

We therefore examined several possible prescriptions for the use of singular *they*. Since Bodine (1975) argues that prescriptive *he* and singular *they* are linguistically equivalent alternatives we began by examining the following hypothetical prescription: Use singular *they* instead of prescriptive *he* wherever prescriptive *he* is currently used.

Determining the consequences of this hypothetical prescription is relatively simple. Since prescriptive *he* and singular *they* follow the same distributional pattern under this prescription, it is only necessary to replace representative uses of prescriptive *he* in the existing literature with singular *they* and determine the consequences. The consequences described below do not support this particular prescription but serve to illustrate the complexity of prescriptive issues as well as the theoretical and methodological framework that is needed for making principled prescriptive recommendations.

METHOD

To obtain a large and representative sample of prescriptive *hes*, we examined 108 sources (scientific articles, magazine articles, and textbooks) by 108 different authors on topics likely to contain reference to generic classes of people. The topics included psychology, sociology, religion, anthropology, linguistics, history, philosophy, political science, law, geology, medicine, astronomy, economics, art, English rhetoric, engineering, statistics, and biology. The median date of publication was 1971.

A judge read each source so as to obtain a continuous passage containing at least 25 uses of prescriptive *he,* and noted all instances of the generic use of *she, it, he or she, she or he* and singular *they*. The passages were then xeroxed and each instance of prescriptive *he, his, him* or *himself* was changed to *they, their, them* or *themself,* with corresponding changes in verb concord where necessary. For example, the sentence "When a psychiatrist succeeds in helping his patient, he usually sets him free from his inhibitions" was changed to "When a psychiatrist succeeds in helping their patient, they usually set

TABLE 3. *Analysis of the transformed corpus*

Mean number of singular *they*s per source	27.00
Mean number of sentences containing singular *they*s (per source)	15.10
Mean number of singular *they*s per sentence	1.79
Mean number of sentences per source	74.60
Probability that a sentence contains singular *they*	0.20
Mean number of ambiguous sentences per source	6.20
Probability that a sentence containing singular *they* is ambiguous	0.40
Mean number of partially ambiguous sentences per source	0.79
Probability that a sentence containing singular *they* is partially ambiguous	0.05
Mean number of covertly ambiguous sentences per source	4.18
Probability that a sentence containing singular *they* is covertly ambiguous	0.28

them free from their inhibitions." The transformed passages constituted the corpus.

Two male and two female judges independently examined the corpus to determine the advantages and disadvantages of singular *they,* which are summarized below following a general description of the data.

RESULTS AND DISCUSSION

Frequency of prescriptive he

The 108 sources contained 2913 prescriptive *he*s: 44% nominatives, 42% possessives, 10% accusatives, and 4% reflexives. Generic uses of *she* (N = 1), *he or she* (N = 2), and *it* (N = 12) amounted to 0.5% of the total corpus. There were no occurrences of singular *they,* corroborating Greene (1978) and Bryant (1962) who also found no instances of singular *they* in a large and representative sample of formal articles. These data conflict with Miller and Swift's (1976) claim that use of singular *they* is common and widespread and serve to illustrate the problem of selected examples. The small number of examples that Miller and Swift (1976) cite (7 quotes from respectable writers including Shakespeare and Shaw) are almost certainly unrepresentative of current formal usage.

Analyses of the corpus appear in Table 3. As can be seen there, the 27 prescriptive *he*s per source occurred in 15.1 different sentences with 1.79 prescriptive *he* per sentence on the average. And since multiple instances of prescriptive *he* within the same sentence were invariably nonindependent, sentences rather than instances of prescriptive *he* were used as the most conservative measure in subsequent analyses. The probability that any one sentence in the untransformed corpus contained one or more prescriptive *he* was one in five or .20. Selection of passages within the sources may have contributed to this surprisingly high frequency. We therefore analyzed two of

the 108 sources more fully. Both were textbooks in current use at UCLA: one on writing with moderately low frequency of prescriptive *he* in the first analysis, and one on psychology with moderately high frequency of prescriptive *he*. Based on an expanded sample comprising about 33 percent of each text, there were an estimated 666 prescriptive *hes* in one and 1682 in the other or 1174 per text. This figure suggests that prescriptive *he* is astoundingly frequent in university textbooks, one of society's most prestigious literary domains. Given frequencies such as these, it would not be surprising if, over the course of a lifetime, exposure to prescriptive *he* for an educated American exceeds 10^6. The consequences of shaping trials of such magnitude are beyond the ken of present-day psychology. And until such consequences can be determined, Lakoff's (1973) claim that the problem of prescriptive *he* is trivial or should be ignored must be dismissed as unfounded.

Positive characteristics of the prescription

Neutrality. Singular *they* was neutral with regard to sex for all antecedents in the corpus. This contrasts with prescriptive *he* which is never neutral and is generally used to reference neutral and predominantly male antecedents, e.g., engineer, doctor, but not predominantly female antecedents e.g., nurse (see Martyna 1978).

Naturalness. For reference to corporate nouns and indefinite pronouns, e.g. *someone, anyone, nobody, everybody,* singular *they* often sounds more natural than any other alternative. For example, Langendoen (1970) found that 74 percent of a sample of English teachers preferred singular *they* in forming the tag question "Everyone likes me, don't they?" And Valian (1977) found that about half of a student sample preferred singular *they* to complete the sentence "Everybody should wipe __ feet before entering." A similar study of my own indicated that speakers invariably prefer singular *they* over prescriptive *he* for reference to corporate nouns as in "If Seattle calls, tell __ I'm out."

Negative characteristics of the prescription

Covert ambiguity. Sentences containing singular *they* often suffered from covert ambiguity. Consider for example the sentence "If a scholar has no faith in their principles, how can they succeed?" The *their* could refer to either *a scholar's own principles* or to *the principles of some as yet unknown or indeterminant persons* and the wrong interpretation seems the more salient of the two. The unsuspecting reader tends to assume that singular *they* refers to persons about to be specified or specified so long ago as to be forgotten.

Covert ambiguity is likely to prove especially troublesome for people

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unfamiliar with the extended use of singular *they*, but increased exposure should alleviate the difficulty to some extent by weakening the expected association between *they* and a plural antecedent. However, increased exposure to singular *they* will be of little help with the overt ambiguities discussed below.

Overt ambiguity. Singular *they* introduced overt ambiguities which often made it impossible to determine which entity or entities were being referred to. The sentence above provides an example: the *they* in "If a scholar has no faith in their principles, how can they succeed?" could refer to either *principles* or a *scholar,* both overt components in the surface structure of the sentence.

Overt ambiguities usually involved a plural noun phrase in the neighboring context, but unconjoined singulars also caused problems. For example, in "A psychologist protects the welfare of a client and when conflicts of interest arise they resolve them in the direction of the client," the *they* could refer to either a psychologist or to both the psychologist and the client (unconjoined singulars). Most (93 percent) of the misleading antecedents originated in the same or immediately preceding sentence, but in one example, "Man has seen their life as a space of time which their actions continue to fill," the misleading antecedent (*animals*) occurred four sentences earlier.

These ambiguities are difficult to explain under Bodine's (1975) hypothesis that prescriptive *he* and singular *they* are linguistically equivalent. Although singular *they* and prescriptive *he* each neutralize only one dimension of their parent pronouns, the problem is that many other dimensions of *they* are already neutral or indeterminant, giving rise to referential ambiguities which make it difficult to determine the intended antecedent. Used as a singular, *they* is totally indeterminant on five major dimensions: number (singular or plural referents are possible), gender (male, female, or neuter referents are possible), abstractness (concrete or abstract referents are possible), animacy (animate or inanimate referents are possible), and humanness (human or nonhuman referents are possible).

In contrast, prescriptive *he* is totally indeterminant on none of these dimensions since antecedents of prescriptive *he* are generally singular, concrete, human and animate. The partial indeterminacy for gender (antecedents are generally neutral or predominantly male but not predominantly female) constitutes a subreferential ambiguity which makes it difficult to determine whether prescriptive *he* refers to a male or a generic person.

Partial ambiguity. Partial ambiguities resembled the overt ambiguities discussed above except that context ruled out or rendered implausible one of the alternative interpretations. An example of partial ambiguity is "No one goes through life with imperfect facial features if they can help it." A reader

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who interprets *they* to refer to *imperfect facial features* is led down the garden path with no reasonable interpretation for the remainder of the sentence and must backtrack to find the intended meaning.

Conceptual availability. Conceptual availability refers to the ease of activating the appropriate concept in comprehending, retrieving, or producing a word within its functional context of use. Replacements for prescriptive *he* are intended to carry the meaning 'she or he' but there is some question whether extended use of singular *they* would be interpreted to mean 'she or he.' Recent experiments have shown that speakers often interpret prescriptive *he* to mean the specific male *he* rather than 'he or she' (MacKay & Fulkerson 1979; Kidd 1971), but we simply don't know how people interpret singular *they* in representative contexts of use. If both "A doctor earns his pay" and "A doctor earns their pay" are interpreted to refer only to male doctors rather than male or female doctors, substituting singular *they* for prescriptive *he* will serve little purpose.

Connotations. A major problem with prescriptive *he* lies in its connotations and the way these connotations color the interpretation of an antecedent. Our corpus indicated, however, that singular *they* will also have a problem with connotations. Because of its frequent association with nonhuman antecedents, *they* seems to impart dehumanizing and distancing connotations which incur in the reader a loss of personal involvement and personal meaningfulness. Both problems are especially evident in examples discussed below, but determining the extent of these problems requires an experimental study using semantic differential procedures.

Functional problems. Human pronouns are often used to express personal involvement with nonhuman antecedents (MacKay & Konishi 1980). Examples from the present corpus are "Death and his brother sleep," "Then comes winter with his weary snows," and "The great snake lies ever half awake at the bottom of the pit of the world, curled in folds of himself until he awakens in hunger."

A sex-indefinite pronoun is needed to solve the problem of stereotyping in such uses (see MacKay & Konishi 1980), but singular *they* seems ill-suited for carrying out this function. Using singular *they,* these examples reference death and their brother sleep, winter and their snows and a great snake curled in folds of themself until they awake in hunger. The difficulty in such cases is not just the dehumanizing and distancing connotations of *they,* but plurality itself. For example, we can conceive of death (singular) as a special kind of person but singular *they* seems to disrupt the metaphor by reminding us that deaths (plural) are not people. This particular problem is especially serious for children's literature, where use of human pronouns for nonhuman

antecedents is remarkably common. Since animal antecedents account for 66% of all instances of the nonmale *he* in grade school textbooks (Graham 1975), singular *they* may be defective in 66% of its projected uses in children's literature.

As McCawley (1976) points out, singular *they* also appears awkward for other major functions: sex-unknown and sex-concealed references to specific individuals, e.g., "I hear that Mary's doctor just broke their leg." Mixed-sex disjunctives such as "If either your sister or her friend want to go, maybe you should help them," are also problematic since we tend to interpret the *or* conjuctively rather than disjunctively when combined with singular *they*. However, these functions are either genuinely rare or appear in other contexts since no examples of this sort appeared in the corpus. Perhaps the traditional academic preoccupation with precision, validity and abstractness tends to preclude reference to mixed-sex disjunctives and sex-unknown or sex-concealed references to specific individuals.

Problem referents. Although singular *they* sounds natural in reference to indefinite pronouns and corporate nouns, it sounds bizarre in reference to *God*, e.g., "The fully human being reaches out to God Themself," and *man* (a problem in itself), e.g., "Man found themself possessed of a special faculty." These problem referents seemed nontrivial since *God* is more frequent than any of the indefinite pronouns and since *man* is one of the most frequent nouns in the English lexicon (Carroll, Davies & Richman 1971).

The reflexive. The reflexive *themself* often sounded bizarre in close proximity to its singular antecedent, e.g., "The cover of the book must be designed by the author themself."

Imageability. The impact, drama, and memorability of a sentence depends to a large extent on its imageability. Pluralization in general weakens a sentence, making it more difficult to imagine and remember. Like plural *they,* singular *they* often seemed to make sentences difficult to image and remember, but more definitive experimental data on this issue are needed.

Vagueness. Plurals are less precise than singulars. Whereas the singulars *he, she,* and *it,* refer precisely to one and only one entity, the plural *they* refers vaguely to any number of entities greater than one. Use of *they* as a singular extends the vagueness of *they* to *any* number of entities, one or more, and with this loss of precision seemed to come a further loss in impact for sentences containing singular *they.*

OTHER FACTORS

The present study illustrated effects of a hypothetical prescription within a single domain (formal literature) and within a single modality of use (comprehension), but a complete evaluation of the prescription, such as would be required for practical purposes, must also consider other domains such as speech and other modalities such as learning and production. A preliminary analysis of these domains and modalities suggests the importance of three new factors: two (simplicity and lexical availability) are assets, while the third (potential side effects) is a liability.

Simplicity. Substitutive prescriptions are easy to teach and learn for contemporary speakers who habitually use prescriptive *he* or repeatedly confront prescriptive *he* in reading materials published during the last 250 years. For example, writers of the present corpus could have substituted singular *they* for prescriptive *he* without altering their accustomed writing style and without backtracking to change prior context. Indeed, simple insertion of singular *they* appears to break down in principle for only one rather minor context: questions such as "If a person comes late, do they have to make up for lost time?" This contrasts with proposals requiring stylistic transformations such as passivization. Once we begin a sentence using active voice, inserting the passive is no longer possible. We simply must begin again. False starts of this sort would be annoying and virtually unavoidable in speech since we are usually unaware of the syntax we are about to produce until we have begun to produce it.

Lexical availability. Lexical availability refers to the ease of retrieving a word for production and is usually measured in milliseconds. Frequency is an important determinant of lexical availability and as an already existing high frequency pronoun, the lexical availability of *they* will be high.

Potential side effects. So far, only direct effects of the prescription have been considered. But indirect side effects on seemingly unrelated aspects of language use are also possible and must be evaluated. The overt and covert ambiguities (discussed above) are one source of potential side effects since compensatory adjustments so as to avoid ambiguity can last for hundreds of years. For example, ambiguities resulting from the loss of nominal case inflections in English triggered a chain of evolutionary changes which continued for over 800 years (Bever & Langendoen 1975). Side effects on such a scale are disruptive and contribute to the inaccessibility or obsolescence of the literature of a language.

Another potential side effect concerns plural *they*. If *they* gains widespread

currency as a singular, the plural function of *they* will almost certainly suffer. A new type of ambiguity observed in the corpus serves to illustrate this problem. For example, when *they* replaces *he* in "A patient may not wish to recover as much self control as the nurses wish him to regain and they may be annoyed at his over-anxiety," the original and previously unambiguous use of *they* becomes ambiguous, referring to either *patient* or *nurses*.

A third potential side effect concerns rule violation. Since singular *they* violates a very general rule (number agreement) in English, prescription of this violation could easily lead to changes elsewhere. As Bodine (1975) notes, a general weakening of number concord is a likely possibility. This side effect may or may not prove disruptive, since some languages such as Japanese seem to get along quite well without number concord. However, the principles of prescriptivism advocated here would require a study of at least the present magnitude to evaluate the effects and side effects of loss or weakening of number concord *in English.*

QUANTITATIVE MEASURES

Up to this point, costs outnumber benefits for the prescription under consideration. However, the present results are only a first step since unimportant and rarely encountered costs may be tolerable given important and frequently encountered benefits. What is needed is a means of estimating the importance and relative frequency of the costs and benefits in representative language use. To illustrate such a means we examined the relative frequency of a benefit (naturalness) and a cost (ambiguity) resulting from substitutive prescription of singular *they.*

Relative frequency. A pronoun was used to reference corporate nouns and indefinite pronouns in about 0.1 percent of the corpus. This low relative frequency suggests a negligible potential for natural uses of singular *they* in formal contexts.

In contrast, ambiguities were relatively frequent. The judges used examples of the three types of ambiguity (overt, covert, and partial) to determine the existence and nature of the ambiguities and the analyses to follow only included cases where all four judges agreed.

The mean number of sentences containing overt ambiguities was 6.2 per source, standard deviation 4.1, and the probability of overt ambiguity for a sentence containing singular *they* was $P = 0.40$ (see Table 3). Referent type and case forms interacted slightly with occurrences of overt ambiguity since capitalization conventions precluded ambiguities with the referent *God* and the reflexive *themself* rarely gave rise to ambiguities. Plural nouns were responsible for 68 percent of the overt ambiguities, unconjoined singulars for 24 percent, and conjoined singulars for 8 percent.

The mean number of sentences containing partial ambiguities was 0.79 per source and the probability of partial ambiguity for a sentence containing singular *they* was $P = 0.05$ (see Table 3). Finally, the mean number of sentences containing covert ambiguities was 4.18 per source and the probability of covert ambiguity for a sentence containing singular *they* was $P = 0.28$ (see Table 3).

Disruptiveness. To determine how disruptive the ambiguities would be for a language user who is straightforwardly trying to understand the intended meaning of the passages, a male and a female judge reexamined 32 sources in their original and transformed versions and used an 11 point scale to estimate the likelihood that such a reader would miscomprehend the ambiguities in their unintended sense. The judges assigned a score of 10 for sentences likely to be miscomprehended with a probability close to 1.0, a score of 0 for sentences likely to be miscomprehended with a probability close to 0.0, with intermediate scores for intervening degrees of likelihood. Agreement between the judges was high: there were no differences greater than five and differences greater than one constituted less than 15 percent of the data.

Averaging the ratings across judges for each sentence, the overall mean rating was 7.83 for overt ambiguities (median 8.0), 3.08 for covert ambiguities (median 2.0) and 0.78 for partial ambiguities (median 0.0). These findings suggest that the likelihood of miscomprehension was greater for overt than covert and partial ambiguities and that on the average, overt ambiguities were more likely than not to be comprehended in their unintended sense.

Moreover, the erroneous interpretations of overt ambiguities differed so widely from the intended interpretations as to result in major breakdowns in communication. For example, over 98 percent of the intended antecedents of overt ambiguities were animate and human, whereas 79 percent of the misleading antecedents were neither animate nor human, e.g., *ideas, values, uses, years.* Since the projected frequency of singular *they* is 1174 per textbook, this means that well over 100 total breakdowns in communication per text could be expected. Overt ambiguities therefore pose a serious problem for this prescription since even a single breakdown of this nature is unacceptable to most readers and writers.

We also found that stylistic revisions using singular *they* along with identical content words had no effect on the existence and disruptivenss of the overt ambiguities. This is not to say that some form of reexpression cannot solve the problem, but testing this possibility requires the formulation of new, context-restricted prescriptions with costs and benefits that remain to be determined.

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SUBSIDIARY RESULTS

A link between prescriptive he and species man. Statistical analyses of the corpus revealed a curious link between prescriptive *he* and species *man*, reported here as a subsidiary result. Sources containing species *man* (N = 24) had more prescriptive *hes* per sentence (P = 0.28) than the remaining 84 sources (P = 0.19). Moreover the increased density of prescriptive *hes* reflected a specific link with the word *man*, as if the male connotation of *man* somehow inspired frequent use of the pronoun *he*. The average number of prescriptive *hes* accompanying each use of species *man* (4.53) was much higher than for other referents such as *child* and *writer* (1.6), which did not differ for the two sets of sources. This latter finding rules out the possibility that writers using species *man* were simply more inclined to use prescriptive *he* and indicates that the link between *man* and prescriptive *he* is intrinsically related to the word *man* rather than to users of the word *man*.

The link between *man* and prescriptive *he* has interesting historical implications since frequent association with *he* may have altered the meaning of the word *man*. The logic is as follows. At one time *man* was truly generic and could refer to a female as easily as to a male. For example, as late as 1592, sentences such as "She's a spiritual man" were perfectly acceptable (Miller & Swift 1976), but such sentences are no longer uttered since *man* has come gradually to denote males and has acquired strong male connotations even in clearly generic uses. Various reasons for this semantic shift have been postulated – including the possibility of male conspiracy. The present results suggest another possibility: that the shift in meaning and connotation of *man* resulted in part from its frequent association with prescriptive *he*. This hypothesis predicts among other things a strong connection between *man* and prescriptive *he* prior to 1592, and fits the experimental findings of MacKay and Fulkerson (1979) that pronouns 'dominate' the interpretation of their antecedents.

The link between *man* and prescriptive *he* also carries implications for language planning. Generic use of both *man* and *he* are prescriptive problems and since their use is intertwined, proposals for solving one problem must simultaneously consider proposals for solving the other. And as a general principle of language planning, statistical collocations must be examined so as to avoid defects in high utility contexts.

Contextual disambiguation. Context usually resolves the ambiguities of nouns such as *tank* or *crane*, but not of singular *they*, a difference attributable in part to the impoverished internal and external structure of pronouns. Nouns have a large number of internal dimensions that external context can tie into so as to resolve an ambiguity (consider for example the indefinitely large number of dimensions characterizing the difference between machinery

cranes and bird cranes). Moreover, elaborate and productive syntactic devices have evolved for modifying nouns so as to disambiguate their intended referent. Not so with pronouns. Pronoun modifiers (e.g., *all* as in *you all*) are themselves impoverished, few in number and unproductive in nature. Such considerations suggest a general principle of referential ambiguity such as the following: *the potential for referential ambiguity is directly related to the number of distinctive but indeterminate or unspecified referential dimensions and inversely related to the extent to which context can differentiate these referential dimensions.*

LIMITATIONS OF THE PROCEDURE

The present procedure can be described as the method of systematic examples, since the corpus provides the examples, good or bad, not the investigator as in the widely used method of selected examples. The method of systematic examples is valuable as a first step in linguistic description but carries limitations which should be stressed. One concerns selection of the corpus, which should be large and representative of some specifiable linguistic domain. The present corpus included a wide sample of topics but whether it accurately reflects formal writing in the language at large is unknown.

Another limitation concerns the nature and number of judges. Ideally, the judges should be representative of the language population in question, in the present case the entire English-speaking world. Among other things, this means at least thirty judges using standard statistical criteria and the possibility of sex-linked differences among the judges (see Martyna 1978) suggests the need for double that number. The present results employing only four judges must therefore be considered preliminary.

Another limitation is that the procedure only applies to how the language has been used, not to how it might be used. For example, the procedure provides no reliable way of determining how the language might be used or comprehended under conditions of say, general acceptance, preference, or prescription of singular *they*. The interesting possibility requiring experimental study is that under such conditions speakers may quickly learn to recast their sentences so as to avoid the ambiguities of singular *they*.

OUTSTANDING ISSUES

The conceptual status of singular they. One outstanding issue concerns the singularity of existing uses of singular *they*. If corporate nouns and indefinite pronouns are morphologically singular but conceptually plural, natural uses of singular *they* may reflect a general principle whereby pronominal number agreement takes place at a conceptual rather than surface structure level.

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This being the case, listeners in a singular-plural forced-choice reaction time task should respond "plural" for sentences containing singular *they*, e.g., "Someone left their sweater," more often than for control sentences such as, "Someone left a sweater," and much more often than for sentences containing nouns and pronouns which are both conceptually and morphologically singular, e.g., "Joan left her sweater."

Spoken vs. written form. The present study examined only the written language. Spoken sentences are in general shorter than written ones and may reference plurals less often. Since either factor could reduce the probability of ambiguity associated with use of singular *they*, a similar study of speech usage is necessary for a comprehensive evaluation of singular *they*.

The effectivenss of prescriptivism. Data on the effectiveness of prescriptivism and the reasons for its success or failure are clearly needed since some investigators view the work of prescriptive linguists as misguided and futile, citing cases where the linguistic community has ignored prescriptions, whereas others view prescriptivism as awesomely successful, even in prescribing forms against the wishes of the majority of the speakers of a language.

Three largely independent classes of factors are relevant to the effectiveness issue: political factors such as the desire for language change, psycholinguistic factors governing the best change to make and sociological factors associated with the means of implementing the change. The present study has examined psycholinguistic factors such as simplicity, lexical availability, connotation, conceptual availability, comprehensibility, imageability, memorability, producibility, learnability, topic, sentence complexity, linguistic side effects, case, function, ambiguity, context, written vs. spoken speech, and formal vs. informal registers. However, political and sociological factors remain virtually unexplored.

Ease of change. Bodine (1975) argues that because of the social significance of personal reference, personal pronouns are particularly susceptible to modification in response to social and ideological change. According to Bodine, a conscious attempt on the part of feminists and others to change the language is unnecessary since speakers of English need only ignore the prescriptive grammarians and singular *they* will solve the problem of prescriptive *he* by unpremeditated accommodation.

Findings of the present study suggest that these views are mistaken. Substituting singular *they* is neither a viable nor a generally recommendable solution to the problem of prescriptive *he* in formal writing. Use of singular *they* may well expand under increasing political pressure to use alternatives to prescriptive *he,* but the present findings suggest some fundamental limits to such expansion in formal contexts. Unpremeditated accommodation will not

extend these limits, and if personal pronouns are easily modified, it is not clear what the best modification should be. *They* is the best of the old words newly used, and substituting a phrase such as *he or she* introduces as many problems as singular *they*. Given only unpremeditated accommodation, part-time generic use of *he, she, it, he or she,* and *she or he* seems likely to continue indefinitely.

Other prescriptions. The present study examined the simplest and strongest possible prescription of singular *they*. Other prescriptions deserve exploration, however. One is context-restricted prescription. Results discussed above suggest the possibility of prescribing singular *they* for restricted reference to indefinite pronouns and corporate nouns, even though this solves only a fragment of the problem. Multiple choice prescriptions represent another possibility. For example, it might be possible to prescribe several alternate solutions to the problem of prescriptive *he,* including *he or she, it, she or he,* passivization, and pluralization as well as singular *they*. Taken alone, each of these solutions encounters problems in some contexts, but the hope is that taken together, at least one solution may apply to each context.

Some writers have already adopted the multiple choice strategy with the help of American Psychological Association guidelines for nonsexist language, but Spencer (1978), in a preliminary evaluation, suggests that the results are sometimes awkward, dehumanizing, conceptually inaccurate, and forced or uneven in style and that even highly intelligent and accomplished writers dedicated to using the multiple choice strategy occasionally slip up and use prescriptive *he.* A multiple choice prescription specifying which solution best fits which context would also be difficult to teach and learn to use in speech but further research must determine whether the benefits of such a prescription outweigh its costs.

The final, and, from a theoretical standpoint, most interesting prescriptive alternative that remains to be explored is neologism: a new word that means 'he or she.' Neologisms avoid all of the problems of recycled words such as prescriptive *he* and singular *they,* and achieve all of the benefits except for one: lexical availability. Being new, the lexical availability of many neologisms will be low relative to the overlearned and highly available prescriptive *he.* However, availability depends on the design of the neologism. The availability of a derivational neologism such as E (see Geiwitz 1978), is almost as great as prescriptive *he.* People initially produce E as a derivative by applying a highly available rule (/h/ deletion) to prescriptive *he* and produce the remaining case forms (possessive Es, accusative E and reflexive *Eself*) by applying other already highly available rules. Among the other desirable characteristics of E are its shortness, pronounceability, transparency, and learnability (stemming from its intimate relation to *she* and *he*).

Whether E is the best possible neologism is another matter. Finding the

neologism that would be easiest to learn, produce, and perceive, presents a problem of considerable theoretical magnitude. Whereas in the past our theories have been geared toward distinguishing possible vs. impossible words, independent of underlying concepts, such a project requires a theory for discriminating among the indefinitely many possible words or neologisms to find the one most suited for expressing a particular concept ('he or she').

Hidden benefits of neologisms *per se* also remain to be explored. One is educational or political in nature. Neologisms automatically signal that a new meaning is being expressed and a new 'he or she' pronoun simultaneously calls attention to the problem of prescriptive *he,* which is important for creating the desire to change a long-standing and largely unconscious habit. Other benefits are associated with personal competence or achievement motivation: the personal rewards resulting from success in learning something genuinely and obviously new such as a neologism. Still other benefits concern the simplicity and universal insertability of a neologism as a replacement for the generic use of *he, he, it,* singular *they, he or she,* and *she or he.* Whether such benefits outweigh the costs is yet another issue for further research.

Bloomfield (1933) was right. Solving prescriptive issues is difficult, even now. However, the difficulty is not one of principle and I hope that linguists, psychologists, and sociologists will become involved in finding the answer to the problem of prescriptive *he.* Much more is at stake than helping to discard a defective prescription and providing an effective means of expressing an intended concept. At stake is our ability as a science to develop the theoretical and empirical machinery to implement linguistic knowledge and to heal the rift between theoretical and applied linguistics. The task will certainly not be easy, but at the same time it promises rewarding insights into the dynamics of language and language change.

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