

# Cognitive effects of masculine generics in German: An overview of empirical findings

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## *Abstract*

*This article presents a series of experiments which were conducted among native speakers of German to determine the influence of different types of German generics on the cognitive inclusion of women. Results indicate that the inclusion of women is higher with 'non-sexist' alternatives than with masculine generics, a tendency which was consistent across different studies. The different alternatives, however, showed different effects which also varied depending on the context. These results are discussed with regard to their practical consequences in situations such as nominating women and men for awards or political offices.*

*Keywords: feminist language critique, generics, language reform, grammatical gender, German*

## **Introduction**

Masculine generics have been the central issue in the debate about 'sexist' and 'non-sexist' language that was raised in the 1970s (e. g., Miller and Swift, 1977; in Germany, Trömel-Plötz, 1978). When general statements are formulated in the masculine, critics argue, women are linguistically ignored (e. g., *a typical doctor ... he*). As a consequence, women's achievements, their rights, and their interests are easily overlooked. An impressive body of research on English generics, assembled over the last thirty years, has confirmed the assumption that masculine generics make people think predominantly of males and put women at a disadvantage (see below). However, it is doubtful whether the findings for the English language are valid for languages which are structurally different. The present contribution will report empirical research on masculine generics in German, a language with a full-fledged grammatical gender system. In view of the heated discussion on sexist language in the German-speaking

countries, which has already resulted in official language regulations (e. g., Braun, 1991; Hellinger and Bierbach, 1993; Schweizerische Bundeskanzlei, 1996), there is surprisingly little empirical data to furnish the debate. This contribution is meant as a step towards filling this gap.

### Grammatical gender in German

English is generally regarded as having a ‘natural gender’ system since linguistic gender distinctions usually express the sex of the people referred to and do not concern inanimate nouns (cf. Konishi, 1993: 520, for a critical view on the concept of ‘natural gender system’). German, on the other hand, is a language that uses grammatical gender, for every German noun, including those denoting inanimate and abstract concepts, belongs to one of the categories feminine, masculine, or neuter. Gender as an inherent feature of the noun becomes manifest in grammatically related linguistic forms, such as articles and adjectives (cf. (1) through (3)).

- (1) feminine  
*ein-e klug-e Frau*  
a-FEM clever-FEM woman  
‘a clever woman’
- (2) masculine  
*ein-Ø klug-er Mann*  
a-MASC clever-MASC man  
‘a clever man’
- (3) neuter  
*ein-Ø klug-es Kind*  
a-NEUT clever-NEUT child  
‘a clever child’

Anaphoric pronouns also show grammatical agreement with the gender of their antecedent: *Frau – sie* ‘woman – she’ (feminine), *Mann – er* ‘man – he’ (masculine), *Kind – es* ‘child – it’ (neuter).

For obvious reasons there can be no correlation between gender and sex with nouns such as *Tisch* ‘table’ (masc.), *Hoffnung* ‘hope’ (fem.), or *Chaos* ‘chaos’ (neut.), but the grammatical gender of designations for human beings generally corresponds to sex. Thus *Frau* ‘woman’ and *Studentin* ‘female student’ are feminine, whereas *Mann* ‘man’ and *Student* ‘male student’ are masculine<sup>1</sup>. The feminine suffix *-in* (as in *Student-in* ‘female student’) is a highly productive device for deriving feminine/fe-

male personal nouns. Its plural form *-innen* (e. g., *Student-innen*), preserves the distinction of feminine/female vs. masculine/male even in the plural where gender is otherwise neutralized (cf. the non-differentiating plural pronoun *sie* ‘they’). The overall correlation of gender and sex in personal nouns is acknowledged in all standard grammars of German (see e. g., Duden, 1998: 199; Eisenberg, 1999: 153 ff.).

### The debate on grammatical gender and sex

The term ‘masculine generics’ is a central concept in feminist language critique. It is used when designations for males also serve to refer to people in general, to mixed-sex groups or to persons whose sex is unknown or irrelevant (e. g., English *forefathers, statesman, someone ... he*). In German, males are normally referred to using grammatically masculine nouns and pronouns. Many of these masculine forms can also be used generically (cf. (4) through (7)):

- (4) *Der Wähler hat entschieden.*  
‘The voter (masc.) has made his decision.’
- (5) *Der durchschnittliche Arzt verwendet nur 10 Minuten Zeit für jeden Patienten.*  
‘The average doctor (masc.) spends only ten minutes on each patient (masc).’
- (6) *Diese Universität hat 11,000 Studenten.*  
‘This university has 11,000 students (masc).’
- (7) *der Mann auf der Straße*  
‘the man (masc.) in the street’

In German-speaking countries – as elsewhere – feminists regard masculine generics as both a symptom and a source of a fundamental androcentrism (e. g., Pusch, 1984; Grabrucker, 1993; cf. Hellinger, 1990). They demand that masculine generics be replaced with ‘non-sexist’ alternatives of either a neutralizing or a feminizing type. Neutralizing forms do not express sex, instead this group is comprised of neuter nouns, e. g., *das Individuum* ‘the individual’ (neut.), non-differentiating forms, e. g., *die Angestellten* ‘the employees’ (= plural of *die Angestellte* ‘the employee’, fem., as well as *der Angestellte* ‘the employee’, masc.), epicene nouns (nouns with fixed gender that do not differentiate sex, cf. Corbett, 1991: 87 ff.), e. g., *die Person* ‘the person’ (fem.), *der Mensch* ‘the human being’ (masc.), or collectives, e. g., *das Personal* ‘the staff’ (neut.). Feminizing forms, on the other hand, render the inclusion of women explicit. They

can consist of feminine-masculine word pairs, e. g., *Lehrerinnen und Lehrer* ‘female and male teachers’, *die Bewerberin oder der Bewerber* ‘the female or male applicant’ or the so-called ‘capital I’ forms. The ‘capital I’ was invented in feminist and alternative circles to substitute masculine generic plurals of the type *Leser* ‘readers’ (masc.), at least in writing<sup>2</sup>. The new form was created on the basis of the feminine plural (*Leserinnen* ‘readers-fem.’) with a capitalized suffix-initial *i* which is meant to highlight the generic function. The resulting *LeserInnen* ‘readers’ closely resembles the feminine plural *Leserinnen*, but stands for *Leserinnen und/oder Leser* ‘female and/or male readers’. Nowadays ‘capital I’ forms are used in certain newspapers and magazines, in unofficial messages or letters and in a few academic publications. They are still associated with left-wing and feminist attitudes and are therefore usually not accepted for official usage.

On a more theoretical level, the debate on ‘sexist’ language touches the general issue of the relationship between grammatical gender and sex<sup>3</sup>, an issue which has been discussed for more than 2000 years (see Forer, 1986 for the history of this debate; cf. Royen, 1929). This discussion can be reduced, very roughly, to two opposing views.

According to the ‘semantic’ view, there is a semantic tie between grammatical gender and sex: Gender is perceived to carry some sort of sex-related meaning. Grimm (1890: 357), for example, claimed that the feminine gender – even with inanimate nouns – signals properties such as ‘smaller’, ‘softer’, ‘passive’ and ‘receptive’, whereas the masculine stands for ‘taller’, ‘quicker’, ‘active’, etc.<sup>4</sup>. Modern versions of this approach are espoused by researchers such as MacKay (1999) and Konishi (1993), whose arguments are based on empirical findings concerning the connotations of grammatical gender. Feminist language critics claim that grammatical gender is in close correspondence with sex, at least in the context of person reference, and reflects – and reconfirms – relationships between the sexes.

The opposing ‘arbitrary’ view maintains that there is no association between grammatical gender and sex. Grammatical gender is regarded as an exclusively formal feature; gender assignment of nouns is believed to be arbitrary<sup>5</sup>. Opponents of feminist language critique generally adhere to the arbitrary view (e. g., Stickel, 1988; Ulrich, 1988; see also Leiss, 1994, who rejects the semantic view of feminist language critics for somewhat different reasons).

In regard to generics, the arbitrary view suggests that masculine gender has nothing to do with ‘male’ semantics; masculine forms are therefore semantically neutral means of generic reference. According to the semantic view, on the other hand, masculine generics can never be entirely neutral.

### **Earlier findings and objectives of the present research**

The debates on grammatical gender and feminist language critique raise the following questions: How are masculine generics interpreted by the receivers of an utterance? Are they perceived to be neutral or do they conjure up images of male persons? What kind of cognitive effects do they have, compared to neutralizing and feminizing generics?

For the English language these questions have been studied empirically since the early 1970s (see, for example, the studies by Moulton, Robinson, and Elias, 1978; MacKay and Fulkerson, 1979; Hyde, 1984; Hamilton, Hunt, and Stuart-Smith, 1992). The results point overwhelmingly in the same direction: Masculine generics evoke predominantly 'male' associations. The other forms are not necessarily entirely neutral either, but they enhance the inclusion of women.

These findings suggest that similar effects have to be reckoned with in other languages as well – but the linguistic situation in German is different from English. Since the German language uses grammatical gender, every German noun is assigned a gender which is marked on articles, adjectives, suffixes, and various kinds of pronouns (see above). Consequently, masculine generics concern more word classes and masculine markings are much more frequent in a text. This could intensify 'male' associations and produce a stronger male bias than in English. On the other hand, since even inanimate nouns have a gender, e. g., *Zahnbürste* 'toothbrush' (fem.) or *Fleck* 'stain' (masc.), speakers of German might perceive the semantic tie between gender and sex as weaker<sup>6</sup>.

So far little empirical research has been conducted into generics in grammatically gendered languages. Explorative investigations into the Spanish language have been conducted by Nissen (e. g., 1997), but we do not know of empirical studies for French, Polish and many other gender languages. For German the empirical basis is rather weak as well. There are three investigations which are methodologically comparable to the ones we will present below.

Klein's (1988) investigation involved participants reading German sentences formulated using either masculine generics or feminine-masculine word pairs. The participants then inserted a name and a title in a subsequent sentence (e. g., 'Mr', 'Mrs') so that the association with a male or a female person was revealed. Klein's data shows that with masculine generics 'male' associations were stronger than with word pairs, even though the latter did not trigger entirely balanced responses either.

Scheele and Gauler (1993) used various generic forms in two sentence frames. These frames contained certain gaps which participants were asked to fill with words or phrases that they perceived as fitting the sentence. The inserted words often contained clues to a gender-specific

interpretation of the generic form. Among the different generics only feminizing forms (feminine-masculine word pairs, ‘capital I’) triggered significantly more ‘female’-specific responses than the masculine.

The experiments conducted by Irmen and Köhncke (1996) tested the impact of masculine generics on the cognitive availability of the concepts ‘female’ and ‘male’. After reading stimulus sentences with various human nouns (partly generic and partly specific reference) participants answered the question whether the person mentioned in each sentence was a woman (or a man). The time needed for their responses was measured. In the two experiments, which had a slightly different design, only 20% and 49% of the participants answered the question whether a masculine generic could refer to a woman with “yes”. In addition, reaction times were considerably shorter when participants were presented with the response option ‘male’ after reading a masculine generic than with the option ‘female’.

In our view, the ambiguity of masculine generics in German can be expected to affect their interpretation: Masculine gender forms occur both in generic and in sex-specific function (i. e., in reference to males). In the absence of contextual clues the function of a given masculine form is often difficult to identify. There are, in fact, many contexts where the effects of (extra-linguistic) male predominance and masculine generics should add up to make people think first and foremost of males. Moreover, the interpretation ‘male’ is almost always correct when a masculine personal noun is used, whereas the inclusion of women may or may not apply. It can be expected, therefore, that masculine generics are associated more closely with the image of a male than with the image of a female. This is aggravated by the fact that the masculine is more frequent in its ‘male’ sense than in its generic sense (for an overview see Flumm 1997: 18). Consequently, when a person category is referred to in the masculine, male exemplars of that category should be easier to imagine and to recall than female ones.

Therefore, our general hypothesis at the outset of the investigation was that masculine generics have cognitive effects which favor ‘male’ interpretations. We expected alternative generics to trigger significantly different responses: The cognitive inclusion of women should be higher with neutralizing forms and with feminizing types of generics than with masculine generics. During the course of several years we conducted a series of experiments that investigated the effects of generics using methods and materials which allow us to make inferences about the consequences of language use in public life. In the following section we will give an overview of the whole series of experimental studies. Detailed information on the statistical analyses, i. e., analyses of (co-)variance, t-

tests or chi-square tests of independence, is available in the respective publications (Braun, Gottburgsen, Sczesny, and Stahlberg, 1998; Stahlberg and Sczesny, 2001; Stahlberg, Sczesny, and Braun, 2001).

## **Empirical studies**

### *Can geophysicists be women? (Experiment 1)*

In experiment 1 (experiment 1 in Braun et al., 1998) we investigated how the linguistic designation of a group (masculine generics vs. alternative forms) influenced estimations of the sex distribution in that group. The hypothesis was that, compared to masculine generics, neutralizing as well as feminizing forms would prompt readers to assume a higher percentage of women in the respective group.

The participants were made up of 192 native speakers of German (96 females, 96 males). They were told that the aim of the study was to investigate aspects of text understanding. They were given a fictitious newspaper article on the annual meeting of a scientific association and different versions of the text were distributed to different groups of participants. After reading the text, participants filled out a questionnaire that contained a number of questions concerning the contents of the article, most of them distractors. The critical question pertained to the estimated percentage of women and men attending the annual meeting of the science association. Two different scientific disciplines were mentioned in different versions of the article: geophysicists as a male-associated discipline vs. dieticians as a female-associated field. These disciplines were selected after assessing the sex-typing of academic disciplines in a pre-test. In addition, the type of generic used in the text also varied: Masculine generics (e. g., *die Geophysiker* ‘the geophysicists’, masc.) vs. neutralizing forms (e. g., *die Geophysik* ‘geophysics’, *die wissenschaftlich Tätigen* ‘the [people] active in science’) vs. feminine-masculine word pairs (e. g., *Geophysikerinnen und Geophysiker* ‘female and male geophysicists’). The dependent variable was the estimated percentage of women attending the annual meeting.

As predicted, the type of generic affected the cognitive inclusion of women. The results of the respective analysis of variance indicated that feminizing forms prompted readers to assume a higher percentage of women than masculine generics,  $F(2, 180) 3.76, p = .05$ . In the condition feminine-masculine word pairs (45.8%), the percentage of women attending the meeting was estimated to be higher than in the conditions neutralizing (37.6%) and masculine generics (40.2%), although the latter difference failed to reach a conventional level of significance. However, this was not independent of the discipline mentioned,  $F(2, 180) = 5.06$ ,

Table 1. *Experiment 1: Mean estimated percentage of women attending the annual meeting by scientific discipline, sex of participant and type of generic.*

Scientific discipline	Type of generic	Sex of participant	
		Female	Male
Dieticians	Masculine	64.8	55.3
	Neutralizing	43.8	51.9
	Fem-masc word pairs	66.9	55.6
Geophysicists	Masculine	17.1	23.6
	Neutralizing	23.4	31.5
	Fem-masc word pairs	33.1	27.6

$p = .01$ , and the participants' sex,  $F(2, 180) = 3.68$ ,  $p = .05$ : In the female-associated discipline the percentage of women was given lower estimates in the condition neutralizing (47.8%) than in the conditions masculine generics (60%) and feminine-masculine word pairs (61.3%). In the male-associated discipline, percentages of women were estimated to be higher in the conditions feminine-masculine word pairs (30.4%) and neutralizing (27.5%) than in the masculine generic condition (20.3%). In addition, female readers were more sensitive for the different types of generics: Female participants gave higher estimates in the condition feminine-masculine word pairs (50%) than in the masculine generic (40.9%) and neutralizing (33.6%) conditions. The estimations of the male participants, however, did not differ significantly between the three types of generic conditions. The means for all experimental conditions are summarized in Table 1.

### *Can hockey players be women? (Experiment 2)*

Experiment 2 (experiment 2 in Braun et al., 1998) was a modified replication of experiment 1: In order to test the effects of generics in another context of public interest, the newspaper article now described the annual meeting of a sports association. In addition, while only a female- and a male-associated academic field had been included in the design of experiment 1, the variable sport was represented by three different disciplines: Female-associated, male-associated, and neutral. Otherwise, the material was identical to that used in experiment 1.

A total of 270 people participated in this experiment; 135 were female and 135 male. The sample consisted mainly of university students (69.3%). Different versions of the text mentioned three different kinds of sports: Gymnastics (female-associated), hockey (male-associated) and badminton (neutral). These disciplines were again selected on the basis



of a pre-test assessing the sex-typing of different kinds of sports. The type of generic varied, as in experiment 1: Masculine generics vs. neutralizing forms vs. feminine-masculine word pairs. Discipline, type of generic, and sex of participant were the independent variables of the investigation; estimated percentage of women attending the annual meeting was again the dependent variable.

Once more, the predicted influence of language forms was confirmed in the respective ANOVA,  $F(2, 252) = 7.51, p = .001$ . A significantly higher percentage of women was estimated in the condition feminine-masculine word pairs (47.5%) than in the conditions masculine generics (38%) and neutralizing (40.5%). The conditions neutralizing and masculine generics did not differ significantly. Interactions of the first and higher orders, however, point to a more complex interplay of factors. Interestingly and in contrast to experiment 1, the type of generic affected the male participants and not the female ones,  $F(2, 252) = 4.05, p < .05$ . The estimations of the female participants varied little across language conditions (masculine generics: 39.6%; neutralizing: 39.6%; feminine-masculine word pairs: 42.6%), whereas the male participants gave the lowest estimates in the condition masculine generics (35.7%) followed by the neutralizing condition (41.5%). The highest percentage of women was reported in the feminine-masculine word pairs condition (52.4%). The difference between feminine-masculine word pairs and neutralizing forms was only marginally significant. The significant difference between masculine generics and feminine-masculine word pairs goes back primarily to the constellation male participants estimating the percentage of women in a typically feminine discipline: With feminine-masculine word pairs the estimated percentage of women was 73.6%, with masculine generics it was only 46%, and with neutralizing forms 46.8%. The means of all experimental conditions are summarized in Table 2.

Table 2. *Experiment 2: Mean estimated percentage of women attending the annual meeting by sport, sex of participant and type of generic.*

Sport	Type of generic	Sex of participant	
		Female	Male
Gymnastics	Masculine	48.5	46.0
	Neutralizing	53.3	46.8
	Fem-masc word pairs	51.0	73.6
Badminton	Masculine	37.7	33.7
	Neutralizing	41.0	40.5
	Fem-masc word pairs	40.7	41.1
Hockey	Masculine	34.7	27.4
	Neutralizing	24.3	37.1
	Fem-masc word pairs	36.0	42.5

*Name your favorite musician (Experiment 3)*

In experiment 3, respondents were asked to name their favorite heroes, favorite athletes, musicians etc. (experiment 1 in Stahlberg et al., 2001). The hypothesis was that masculine generics would trigger fewer ‘female’ responses than neutralizing formulations and feminine-masculine word pairs. The first factor was, therefore, type of generic, while sex of participants was a second factor.

There were 96 participants (50 females/46 males). They each filled out a questionnaire that was modeled on a list of questions used by a national German newspaper to interview prominent people. In the questionnaire participants were told that the study was aimed at investigating personal attitudes and preferences of university students vs. other groups. Then they answered 10 questions such as ‘What would you personally consider a severe tragedy?’ and ‘What is your most characteristic personality trait?’. The six critical questions were distributed randomly among these distracting items. They targeted the participants’ favorite hero in a novel, their favorite hero in real life, their favorite hero in history, their favorite painter, musician, and athlete. The questionnaire was presented in three different generic language versions: Masculine, e. g., *Romanheld* ‘hero in a novel’ (masc.) vs. neutralizing forms (forms not differentiated for sex), e. g., *heldenhafte Romanfigur* ‘heroic character in a novel’<sup>7</sup> vs. feminine-masculine word pairs, e. g., *Romanheldin oder Romanheld* ‘heroine (fem.) or hero (masc.) in a novel’. Participants were randomly assigned to one of these language conditions. Type of generic and sex of participant were the independent variables in the experimental design; the number of women reported in response to the six critical questions (summarized over all six questions) was the dependent variable.

Again the hypothesis of the experiment was confirmed. The respective ANOVA showed a significant main effect for type of generic,  $F(2, 90) = 4.93, p < .01$ . Masculine generics triggered fewer ‘female’ responses (.67) than alternative formulations (1.67), i. e., the contrast between masculine generics on the one hand and neutralizing generics/feminine-masculine word pairs on the other was significant. The numbers of women reported did not differ between the two conditions neutralizing and feminine-masculine pairs. Female participants mentioned more women than male participants did (1.81 vs. .83),  $F(1, 90) = 12.53, p < .01$ . Means are summarized in Table 3. The masculine thus seems to be the least suitable type of generic to make readers think of or imagine women. In sum, the findings of Experiment 3 show that alternative generics render women more visible, at least in a context where females constitute the minority.

Table 3. *Experiment 3: Mean number of women mentioned by sex of participant and type of generic.*

Type of generic	Sex of participant	
	Female	Male
Masculine	1.13	0.21
Neutralizing	2.37	0.88
Fem-masc word pairs	1.94	1.40

*Note.* Numbers range from 0 to 6.

#### *Name three athletes (Experiment 4)*

Experiment 4 (experiment 2 in Stahlberg et al., 2001) was planned as a replication of experiment 3 with slightly different material. In experiment 3 we asked for personal preferences, whereas in experiment 4 we were interested in the cognitive availability or recall of female and male characters depending on the generics used in the questions. Therefore, we simply asked participants to name several athletes, singers, and other people. Masculine generics were tested against two forms of the feminizing type: Feminine-masculine word pairs and ‘capital I’ forms. It was hypothesized that the alternative generics would lead respondents to mention a higher number of women than masculine generics. In addition, we expected that ‘capital I’ forms would trigger the highest number of women reported, for the relative novelty and the orthographic exceptionality of ‘capital I’ forms in German make their non-sexist intention especially conspicuous. The association of this linguistic form with feminist ideology could enforce the cognitive salience of women. It is further important to note that ‘capital I’ forms closely resemble (sex-specific) feminine forms. According to Flumm (1997), this similarity activates primarily ‘female’ associations when the ‘capital I’ form is read (cf. note 6). Experiments on phonological coding (e. g., Van Orden, 1987; Van Orden, Johnston, and Hale, 1988) have shown that participants mistakenly classify the word *hare*, for example, as an instance of the category ‘parts of the body’ because it phonologically resembles the word *hair*. All these factors should contribute to a pronounced ‘female’ bias of ‘capital I’ forms.

Ninety people (45 females/45 males), 78 % of whom were university students, participated in the study. Female and male participants were distributed evenly over the three language conditions (15 female and male participants each per type of generic). Participants filled out a questionnaire that claimed to investigate the effects of media consumption on the recall of prominent people. The questionnaire contained several distracting questions about the participants’ interest in and occupation

Table 4. *Experiment 4: Mean number of women mentioned by sex of participant and type of generic.*

Type of generic	Sex of participant	
	Female	Male
Masculine	3.20	1.53
Fem-masc word pairs	3.47	1.87
‘Capital I’	5.93	3.27

*Note.* Numbers range from 0 to 12.

with the media. The critical items were embedded in a section which asked participants to name the three famous persons of a given category that first entered their minds: ‘Please name three athletes (singers, politicians, hosts of TV shows)’. The questionnaire was presented in the following language versions: (a) masculine generics, e. g., *Politiker* ‘politicians’ (masc.); (b) feminine-masculine word pairs, e. g., *Politikerinnen und Politiker* ‘female and male politicians’ (fem. and masc.) and; (c) ‘capital I’, e. g., *PolitikerInnen* ‘politicians’. Participants were randomly assigned to one of these language conditions. Type of generic and sex of participant were again the independent variables in the experimental design; number of women reported in response to the four critical questions (a summary of all four questions) was the dependent variable.

The hypothesis of the experiment was partly confirmed. The ANOVA indicated that masculine generics triggered the fewest ‘female’ responses (2.37),  $F(2, 84) = 9.97, p < .001$ . However, feminine-masculine word pairs fared only slightly better (2.67), so that this difference did not reach the level of significance. Only ‘capital I’ forms made participants respond with significantly more female names (4.60). As in experiment 3, female respondents mentioned more women than male ones did (4.2 vs. 2.2) with both groups adhering to the same overall pattern,  $F(1, 84) = 19.9, p < .001$ . The results are summarized in Table 4. In general, then, alternative generics promote the cognitive inclusion and recall of women compared to masculine generics. But, as stated above, the effects of ‘capital I’ and word pairs differed considerably. While the use of the ‘capital I’ made participants respond with significantly higher numbers of women than masculine generics, there was no significant difference between word pairs and masculine generics. As we expected, ‘capital I’ is apparently more closely associated with female reference than feminine-masculine word pairs. This suggests that word pairs and the use of the ‘capital I’ may not be equivalent instances of the ‘feminization’ strategy described in the literature on non-sexist language.

*Suggest a candidate (Experiment 5)*

The results of the two previous studies indicate that the type of generic used in the formulation of questions could affect responses in opinion polls, and possibly also in political opinion polls. To further explore the effects on political evaluations and statements, we asked participants to recommend politicians as candidates for an important political office (see experiment 2 in Stahlberg and Szesny, 2001).

Of the 120 participants, 93% were students. A total of 59 participants were female and 61 were male. The experiment was presented as a political opinion poll. Participants received a questionnaire asking which politician(s) from the Christian Democrat Party or from the Social Democrat Party they would recommend as candidates for the position of Chancellor in the next elections (the national elections of 1994). The questions were (a) 'Which Christian Democrat politician should, in your opinion, run for the position of Chancellor in the oncoming elections?' and (b) 'Which other Christian Democrat politicians would you consider as potential candidates for the position of Chancellor?' The same questions were asked in regard to the Social Democrats. The order of both sets of questions was counterbalanced across experimental conditions. The questionnaire was presented in two different language versions: Masculine generics (*Politiker* 'politician', masc.) and feminine-masculine word pairs (*Politikerin oder Politiker* 'female or male politician', fem. and masc.). Participants were randomly assigned to one of these language conditions. Type of generic and sex of participant were the independent variables, whereas the responses to questions (a) and (b) were the dependent variables. Responses to question (a) were coded as 'woman recommended' vs. 'man recommended' vs. 'none recommended'. Responses to question (b) were coded as 'reference to one or more women' vs. 'no reference to women'. It was expected that more female candidates would be named in response to feminine-masculine word pairs than in response to masculine forms.

As the results of preliminary analyses showed the same pattern for male and female participants, these results will be presented with the data collapsed. All percentages, broken down by experimental conditions, are shown in Table 5.

The results of Chi<sup>2</sup>-tests confirm the hypothesis at least partly. Type of generic significantly affected responses to question (a) in regard to the Social Democrats, for a significantly higher percentage of participants recommended a female candidate as a first choice in response to feminine-masculine generics than in response to masculine generics (16.7% vs. 3.3%), Chi<sup>2</sup> (2, N = 120) = 5.98, p = .05. However, in regard to the Christian Democrats there was no significant effect (6.7% vs. 3.3%),

Table 5. *Experiment 5: Percentage of recommended female and male candidates by political party and type of generic.*

	Political party			
	Social Democrats		Christian Democrats	
	Type of generic			
	Masc.	Word pairs	Masc.	Word pairs
Sex of primary candidates				
Woman recommended	3.3	16.7	3.3	6.7
Man recommended	88.3	75.0	85.0	81.7
None recommended	8.3	8.3	11.7	11.7
Further recommended candidates				
Reference to one or more women	18.3	26.7	8.3	33.3
No reference to women	81.7	73.3	91.7	66.7

*Note.* N = 120 participants.

Chi<sup>2</sup> (2, N = 120) = .71, *p* = .70. In the case of question (b) the situation was reversed; type of generic did not affect the responses for the Social Democrats (masculine: 18.3% vs. feminine-masculine word pairs: 26.7% naming of female candidates), Chi<sup>2</sup> (2, N = 120) = 1.16, *p* > .2. Conversely, for the Christian Democrats a significantly higher number of female candidates was mentioned in the condition feminine-masculine word pairs than in the condition masculine generics (33.3% vs. 8.3%), Chi<sup>2</sup> (2, N = 120) = 11.37, *p* = .001. In conclusion, where significant differences were found, they were in the predicted direction, with feminine-masculine word pairs yielding more ‘female’ responses. But the results can also be interpreted as suggesting that ‘non-sexist’ language promotes the inclusion of women only when it is realistic, i. e., when there are women in the respective category. At the time of the investigation, the Social Democrats had a prominent female politician who, for many participants, would have been a realistic candidate for the office of Chancellor (Heide Simonis, head of the state of Schleswig-Holstein). In the Christian Democrat Party, on the other hand, female politicians played a less prominent role (Rita Süßmuth, for example, was far less popular and well-known than former Chancellor Helmut Kohl). It is thus understandable why there was a significant effect for the Social Democrats, but not for the Christian Democrats in the case of question (a). In regard to question (b) (second-order candidates) the situation was reversed; apart from Heide Simonis there were few female politicians on the Social Democrat list. The Christian Democrats, on the other hand, had a couple of female politicians who fit the category of ‘further candi-

dates' or 'second-order candidates', together with less prominent male ones. However, for the time being this explanation remains speculative and is offered post-hoc; it should therefore be tested in future research.

*Is this person an athlete? (Experiment 6)*

All experiments described so far were based on a similar methodological approach. They each involved the use of questionnaires, and dependent variables were derived from the written responses of participants. The present experiment (experiment 4 in Stahlberg and Sczesny, 2001) was conducted to test the effects of generics with a very different kind of measure, namely reaction times. The basic question was whether masculine generics, compared to feminizing generics, make people think of female exemplars of a particular category with a certain delay.

The participants consisted of 48 female and 48 male students. Their task was to decide whether a person shown on a slide (the stimulus person) belonged to a given category. The participants first saw a question word such as 'athlete?' followed by a picture of, for example, Margaret Thatcher. The participants had to decide whether this stimulus person belonged to the category (in this example, athlete). The person categories were designated in three different forms: Masculine generics, feminine-masculine word pairs, and 'capital I'. After a brief training phase each participant classified 32 prominent women and men. Individual reaction times were determined with the help of eight 'neutral' slides (e.g., the category 'china' was followed by the slide of a cup). Participants evaluated the membership of the stimulus person in a given category by pressing buttons for 'yes' and 'no'<sup>8</sup>. Reaction times for each slide were z-transformed. At the end of the session, participants completed a questionnaire which measured their attitudes towards non-sexist language (a German translation of Prentice, 1994). The questionnaire contained five items that had to be evaluated on a 9-point scale from 'don't agree at all' (1) to 'agree absolutely' (9). One item was, for example: 'It is never appropriate to use generic masculine language (i.e., to use 'he' to indicate a person or to use 'mankind' to refer to all humans)'. Four of the items were used to construct a sufficiently reliable scale ( $\alpha = .75$ ). With the help of a median split, participants were assigned to groups with either negative or positive attitudes to non-sexist language.

According to the results of the respective ANCOVA, masculine generics indeed slow down the recognition of female members of a person category, while alternative generics speed up their recognition. However, this effect seems to depend on the speakers' attitudes to non-sexist language and may pertain only to persons with a positive view of non-sexist language,  $F(2, 90) = 3.48, p < .05$ . Participants with a negative attitude

Table 6. *Experiment 6: Reaction times (z-scores) by sex of stimulus person, type of generic, and attitude towards non-sexist language.*

Attitude towards Non-sexist language	Type of generic	Sex of stimulus person	
		Female	Male
Positive	Masculine	-.01	-.18
	Fem-masc word pairs	.02	.02
	“Capital I”	-.07	.06
Negative	Masculine	-.11	-.10
	Fem-masc word pairs	-.19	-.19
	“Capital I”	-.18	-.16

*Note.* A score of 0 stands for an exactly average reaction time, negative scores indicate faster and positive scores slower reactions.

towards non-sexist language did not differ in their reaction times for female and male stimulus persons, whereas reaction times of participants with a positive attitude varied according to type of generics. In the masculine generics condition these people showed longer reaction times for female than for male stimuli (-.01 vs. -.18). The reverse was true for ‘capital I’, which triggered longer reaction times for male than for female stimuli (.06 vs. -.07). No significant difference was found for the same group of participants between feminine-masculine word pairs and masculine forms. As in experiment 4, word pairs and ‘capital I’ fared differently, with ‘capital I’ producing stronger effects in the predicted direction. The results are summarized in Table 6.

Why did the effects of the different language versions depend on the subjects’ attitudes to non-sexist language? Our rationale to include this factor was the assumption that for speakers who already practice non-sexist language in their every-day interactions (because of their negative attitudes to sexist language or, vice versa, their positive attitude to non-sexist language) masculine forms will gradually lose their generic sense. As a consequence, such speakers will automatically associate masculine forms with a male reference to an even greater extent than people with an uncritical attitude towards masculine generics. This also implies that masculine generics might become less and less inclusive as the discussion about politically correct (i. e., non-sexist) language and the use of non-sexist formulations in every-day communications progresses.

## Discussion

As our studies have shown, different linguistic forms indeed make a difference in the minds of readers or listeners. Wherever generics produced significant effects, masculine generics triggered the lowest or slowest cog-



nitive inclusion of women, whereas alternative forms made women cognitively more salient. Our results thus confirm the assumption of feminist language critics. The masculine gender of traditional German generics apparently has a semantic component of ‘maleness’ that can restrict compatibility with the idea of female reference.

However, the various ‘non-sexist’ alternative forms did not always yield the same results. On the one hand, we found that neutralizing forms could be as effective as feminizing generics in making women visible in a male-dominated context (a context in which women are a minority, see experiment 3). Within the feminizing category, on the other hand, different forms had rather different effects. In experiment 4, the use of ‘capital I’ led to a higher number of women reported than with the use of feminine-masculine word pairs. Additionally, in experiment 6 ‘capital I’, not word pairs, promoted the recognition of women as members of a person category. These different effects cast doubt on the usefulness of the cover term ‘feminization’. Possible causes (such as the phonological resemblance of ‘capital I’ forms and feminine forms) were mentioned above, but more research is needed on this point.

It is also important to note that, although significant effects of generic forms were found in all studies, such effects did not necessarily occur under all experimental conditions. In experiments 1 and 2, the type of generic affected only female or only male respondents. In experiment 5, generics had an impact only where the candidacy of female politicians seemed realistic, while in experiment 6 effects depended on speakers’ attitudes towards non-sexist language. It cannot be claimed, therefore, that generics make a difference for each and every speaker of German under all circumstances. One interesting observation here is that world knowledge, in the sense of knowledge about sex distributions in a certain domain (as in experiment 1 and 5), or highly learned associations between linguistic forms and biological sex (as in experiment 6) will moderate the effects of masculine generics vs. the alternative forms. If we know from experience that a certain group of people is highly likely to be composed primarily of women, even masculine generics may automatically evoke female and not male associations. Alternative forms may then result in lesser female associations, either because they make the possibility of male exemplars more explicit or because they interrupt the automatic response and call for a more controlled processing of the information.

In sum, however, our results suggest that the use of alternative generics, especially the use of ‘capital I’, may lead to a higher representation of women in a given category. The objection that alternative generics could create a distorted picture of reality, making people think of women in contexts where in fact there are few or none, is contradicted by the

results of experiment 5. Here, feminine-masculine word pairs led respondents to mention female candidates for the office of chancellor only when female politicians of an adequate standing were available. Future research, however, should test the validity of this interpretation more directly by explicitly linking effects of different types of generics to the distribution of men and women in the respective population.

Considering the findings presented here, ‘non-sexist’ language seems to be helpful when the communicational goal is to render women more visible. As our studies clearly indicate, this is what alternative generics do. In experiments 1 and 2 an increased proportion of women were estimated to have attended the annual meeting of a science or a sports association. Moreover, in experiments 3 and 4 a higher number of women was mentioned in statements about personal preference and in the recall of people. In experiment 5 their number was increased in suggestions for political candidates, and in experiment 6 women were classified more rapidly as members of a given category.

These findings can be of high practical relevance; the higher proportion of women that were assumed to attend a public meeting in experiments 1 and 2 could shape the picture readers have of such events. Female readers especially might be more interested in a public event with higher female participation, might regard it as more relevant or feel more encouraged to attend a similar meeting. Questions of the type used in experiment 3 (‘Who is your favorite musician?’) are regularly used in opinion polls conducted to award titles such as ‘musician of the year’ or ‘most popular novelist’. Similarly, the questions in experiment 4 (‘Name three politicians, presenters, etc.’) could be asked in a poll aiming to determine the most widely known politician or TV show presenter. On the basis of our results, it seems likely that the chances for women to be named in such a poll are reduced when the questions are formulated in the masculine, whereas alternative generics have a positive effect. Experiment 5 asked respondents to propose candidates for an important political office. Questions of this type occur when members of a political party or a committee are nominating candidates or drawing up lists of potential candidates. In this important area of public life, again, formulations seem to have an effect on the extent to which women are included.

A number of questions concerning German generics and the pertinent language critique remain to be answered. Our results suggest, for example, that the different types of alternative generics should be investigated more closely. Is the impact of ‘capital I’ always more pronounced than that of feminine-masculine word pairs? Is the effect of neutralizing forms moderated only by the base rate of women in the respective population or are there further important moderators? In which contexts and with

what types of speakers or listeners do generics make a difference, and when are they without effect?

Whatever results are obtained in research on German generics, we should stress that these results are language-specific. Any recommendations on 'non-sexist' usage therefore have to be language-specific and they should be based on pertinent research findings. We hope that the necessary empirical data on German as well as on other gender languages will be available in the future.

## Notes

1. There are a few well-known and much-lamented exceptions to the correspondence of grammatical gender and sex (called 'hybrid nouns' by Corbett, 1991), e.g., *Mädchen* 'girl' = neuter, *Weib* 'woman (pejorative)' = neuter, *Memme* '(male) coward, sissy' = feminine. But an empirical investigation by Oelkers (1996) shows that speakers of German tend to use pronominal forms that agree with the sex of the person referred to rather than the grammatical gender of the noun in such cases. In this way they re-establish a correspondence between linguistic gender and sex at least to a certain degree (cf. Corbett, 1991: chapter 8).
2. See Ludwig (1989) about the origin and invention of 'capital I'.
3. To avoid ambiguity, we use the term *sex* to refer to extralinguistic gender and *gender* to refer to the linguistic category. In doing so, however, we do not wish to express adherence to the view that *sex* is a purely natural or biological category which can be distinguished from social conceptions of the category.
4. This view was held, for example, by the Greek philosopher Protagoras, but also by 18th and 19th century linguists in Germany such as Adelung (1782) and Grimm (1890). The Neogrammarians, however, contemporaries of Grimm, denied a semantic correspondence of grammatical gender and sex (e.g., Brugmann, 1899; cf. Royen, 1929: 137).
5. This view prevailed, for example, in structuralist linguistics (see its famous proponent Bloomfield, 1933: 271).
6. The investigations by Zubin and Köpcke (1984) and Konishi (1993), however, suggest that even in the case of non-human nouns, gender is in some way associated with gender or gender stereotypes.
7. Although the grammatical gender of *Figur* 'character' is feminine in German, the word is an epicene that can be used for male as well as female referents. It does not have differentiated forms for female and male referents.
8. Reaction times did not differ as a function of the kind of response (yes vs. no) or as a function of the correctness of responses. ANOVAs conducted with these factors failed to reveal any main effects or interactions with the other experimental factors (all  $F$ 's  $< .80$ ,  $p > .37$ ).

## References

- Adelung, J. C. (1782). *Umständliches Lehrgebäude der deutschen Sprache zur Erläuterung der deutschen Sprachlehre für Schulen* (Vol. I). Leipzig: Breitkopf.
- Bloomfield, L. (1933). *Language*. London: Allen and Unwin.
- Braun, F. (1991). *Mehr Frauen in die Sprache. Leitfaden zur geschlechtergerechten Formulierung*. Kiel: Die Frauenministerin des Landes Schleswig-Holstein.

- Braun, F., Gottburgsen, A., Sczesny, S., and Stahlberg, D. (1998). Können *Geophysiker* Frauen sein? Generische Personenbezeichnungen im Deutschen. *Zeitschrift für germanistische Linguistik*, 26, 265–283.
- Brugmann, K. (1899). Das Nominalgeschlecht in den indogermanischen Sprachen. *Internationale Zeitschrift für allgemeine Sprachwissenschaft*, 4, 100–109.
- Corbett, G. G. (1991). *Gender*. Cambridge: Cambridge University Press.
- Duden (1998). *Duden. Grammatik der deutschen Gegenwartssprache* (6th ed.). Mannheim: Dudenverlag.
- Eisenberg, P. (1999). *Grundriß der deutschen Grammatik. Vol. 2: Der Satz*. Stuttgart/Weimar: Metzler.
- Flumm, E. (1997). *Gedankliche Einbeziehung von Frauen im generischen Maskulinum vs. in geschlechterspezifizierenden Sprachformen: Effekte der Sprachversion und der Einstellung zu einer geschlechtergerechten Sprache*. Unpublished Master's thesis, Universität Giessen.
- Forer, R. B. (1986). Genus und Sexus. Über philosophische und sprachwissenschaftliche Erklärungsversuche zum Zusammenhang von grammatischem und natürlichem Geschlecht. In S. Wallinger and M. Jonas (Eds.), *Der Widerspenstigen Zähmung. Studien zur bezwungenen Weiblichkeit in der Literatur vom Mittelalter bis zur Gegenwart* (pp. 21–41). Innsbruck: Institut für Germanistik, Universität Innsbruck.
- Grabrucker, M. (1993). *Vater Staat hat keine Muttersprache*. Frankfurt: Fischer.
- Grimm, J. (1890). *Deutsche Grammatik, Part 3*. Gütersloh: Bertelsmann.
- Hamilton, M. C., Hunter, B., and Stuart-Smith, S. (1992). Jury instructions worded in the masculine generic: Can a woman claim self-defense when 'he' is threatened? In J. C. Chrisler and D. Howard (Eds.), *New directions in feminist psychology. Practise, theory, and research* (pp. 169–178). New York: Springer.
- Hellinger, M. (1990). *Kontrastive Feministische Linguistik. Mechanismen sprachlicher Diskriminierung im Englischen und im Deutschen*. Ismaning: Hueber.
- Hellinger, M., and Bierbach, C. (1993). *Eine Sprache für beide Geschlechter. Richtlinien für einen nicht-sexistischen Sprachgebrauch*. Bonn: Deutsche UNESCO-Kommission.
- Hyde, J. S. (1984). Children's understanding of sexist language. *Developmental Psychology*, 20, 697–706.
- Irmen, L. and Köhncke, A. (1996). Zur Psychologie des 'generischen' Maskulinums. *Sprache & Kognition*, 15, 152–166.
- Klein, J. (1988). Benachteiligung der Frau im generischen Maskulinum – eine feministische Schimäre oder psycholinguistische Realität? In N. Oellers (Ed.), *Vorträge des Germanistentages Berlin 1987: Germanistik und Deutschunterricht im Zeitalter der Technologie. Selbstbestimmung und Anpassung. Vol. 1: Das Selbstverständnis der Germanistik* (pp. 310–319). Tübingen: Niemeyer.
- Konishi, T. (1993). The semantics of grammatical gender: A cross-cultural study. *Journal of Psycholinguistic Research*, 22, 519–534.
- Leiss, E. (1994). Genus und Sexus. *Linguistische Berichte*, 152, 281–300.
- Ludwig, O. (1989). Die Karriere eines Großbuchstabens – zur Rolle des großen 'I' in Personenbezeichnungen. *Der Deutschunterricht*, 41, 80–87.
- MacKay, D. G. (1999). Gender in English, German, and other languages: Problems with the old theory, opportunities for the new. In U. Pasero and F. Braun (Eds.), *Wahrnehmung und Herstellung von Geschlecht. Perceiving and performing gender* (pp. 73–87). Opladen: Westdeutscher Verlag.
- MacKay, D. G. and Fulkerson, D. C. (1979). On the comprehension and production of pronouns. *Journal of Verbal Learning and Verbal Behavior*, 18, 661–673.
- Miller, C. and Swift, K. (1977). *Words and women. New language in new times*. Garden City, NY: Anchor.

- Moulton, J., Robinson, G. M., and Elias, C. (1978). Sex bias in language use. 'Neutral pronouns that aren't'. *American Psychologist*, 33, 1032–1036.
- Nissen, U. K. (1997). Do sex-neutral and sex-specific nouns exist: The way to non-sexist Spanish? In F. Braun and U. Pasero (Eds.), *Kommunikation von Geschlecht. Communication of gender* (pp. 222–241). Pfaffenweiler: Centaurus.
- Oelkers, S. (1996). 'Der Sprintstar und ihre Freundinnen'. Ein empirischer Beitrag zur Diskussion um das generische Maskulinum. *Muttersprache*, 1, 1–15.
- Prentice, D. A. (1994). Do language reforms change our way of thinking? *Journal of Language and Social Psychology*, 13, 3–19.
- Pusch, L. (1984). *Das Deutsche als Männersprache*. Frankfurt: Suhrkamp.
- Royen, G. (1929). *Die nominalen Klassifikationsmodelle in den Sprachen der Erde*. Vienna: Anthropos.
- Scheele, B. and Gauler, E. (1993). Wählen Wissenschaftler ihre Probleme anders aus als WissenschaftlerInnen? Das Genus-Sexus-Problem als paradigmatischer Fall der linguistischen Relativitätsthese. *Sprache & Kognition*, 12, 59–72.
- Schweizerische Bundeskanzlei (1996). *Leitfaden zur sprachlichen Gleichbehandlung im Deutschen*. Berne: Schweizerische Bundeskanzlei.
- Stahlberg, D. and Sczesny, S. (2001). Effekte des generischen Maskulinums und alternativer Sprachformen auf den gedanklichen Einbezug von Frauen. *Psychologische Rundschau*, 52, 131–140.
- Stahlberg, D., Sczesny, S., and Braun, F. (2001). Name Your Favourite Musician: Effects of Masculine Generics and of their Alternatives in German. *Journal of Language and Social Psychology*, 20, 464–469.
- Stickel, G. (1988). Beantragte staatliche Regelungen zur 'Sprachlichen Gleichbehandlung'. Darstellung und Kritik. *Zeitschrift für germanistische Linguistik*, 16, 330–355.
- Trömel-Plötz, S. (1978). Linguistik und Frauensprache. *Linguistische Berichte*, 57, 49–69.
- Ulrich, M. (1988). 'Neutrale' Männer – 'markierte Frauen'. Feminismus und Sprachwissenschaft. *Sprachwissenschaft*, 13, 383–399.
- Van Orden, G. C. (1987). A ROWS is a Rose. *Memory & Cognition*, 15, 181–198.
- Van Orden, G. C., Johnston, J. C., and Hale, B. L. (1988). Word identification in reading proceeds from spelling to sound to meaning. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 14, 371–386.
- Zubin, D. A. and Köpcke, K.-M. (1984). Affect classification in the German gender system. *Lingua*, 63, 41–96.