

# PRONUNCIATION OF GENDER-NEUTRAL GERMAN WITH RESPECT TO SPEAKER ATTITUDE

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## ABSTRACT

In recent years the pronunciation of gender-neutral forms has been a matter of highly controversial discussions in German media. In this reading study we investigate the pronunciation variants of orthographically marked gender-neutral forms of four groups of native speakers of German (age: younger and older, gender: women and men) depending on their attitude towards the usage of gender-neutral forms. Younger and older women mark about 76% of the tokens phonetically or syntactically, whereas the group of younger men marked 72% and the older men only 44%. The most frequent phonetic markers are glottalisations and glottal stops, followed by combinations of these and pauses, but a wide range of other variants was also found. There is a tendency that speakers with a positive attitude towards gender-neutral forms use them more frequently, but there are also speakers whose attitude and usage are inconsistent.

**Keywords:** sociophonetic variation, gender-neutral language, read speech, attitude

## 1. INTRODUCTION

German is a language with grammatical gender, in which the so-called generic masculine has historically been used to refer to persons of any gender. In recent years generic masculine forms have come under criticism for having a male bias [1, 2]. In order to make women and other genders not only socially but also linguistically visible, an early effort was to substitute generic masculine nouns in favour of pair forms as in *Köchinnen und Köche* ‘chefs.PL.MASC and chefs.PL.FEM’ In recent years, as an alternative strategy that may be interpreted to be more inclusive, gender-neutral nouns are marked in writing with glyphs such as the asterisk (e.g., *Köch\*innen* ‘chefs.PL.NEUT’) or the colon (*Köch:innen* ‘chefs.PL.NEUT’) [3]). How these glyphs (e.g., *Köch\*innen*) are pronounced in spoken language was unclear until, in recent years, the insertion of a pause and/or a glottal stop has become more and more established as a strategy to mark

gender-neutral forms in oral language. To the best of our knowledge, up to now only Slavik et al. [4] investigated the realisation strategies and phonetic features of gender-neutral forms. They found that the most frequent marker for gender-neutrality was a lengthening of the /ɪ/, often accompanied by a stress shift on the suffix. Pauses and glottal stops were far less frequent.

In this paper we explore the various strategies for the pronunciation of gender-neutral forms and how these are phonetically realised. Furthermore, we investigate whether the attitude of the speaker towards gender-neutral language affects the choice of the pronunciation strategy.

RQ1: What pronunciation strategies (feminine, masculine, pair form, neutral, other) do speakers of German use when reading gender-neutral forms?

RQ2: What are the most frequent phonetic markers for gender-neutrality?

RQ3: Does speakers’ attitude towards gender-neutrality affect gender-neutral pronunciation?

## 2. METHOD

In the corpus of gender-neutral language, KGGS [5], the pronunciation strategies were investigated in a reading study. Participants were instructed to read sentences aloud that included nouns marked as gender-neutral. The attitude of the participants towards gender-neutral language was collected in a post-experimental questionnaire.

### 2.1. Participants

40 native German speakers from across Germany participated in the study, identifying themselves as male (n=21) and female (n=19). The younger group consisted of 26 speakers, ranging between 21 and 34 years of age (13 male, 13 female), and 14 speakers belonged to the older group, ranging between 47 and 83 years of age (8 male, 6 female). Except for three speakers, all qualified for university entrance. Many also graduated from institutions of higher education.

## 2.2. Material

The stimuli consisted of twelve test words (see Table 1) embedded in sentences in three conditions (masculine, feminine and gender-neutral), each in singular or plural form. Only the gender-neutral forms will be considered here. The gender-neutral forms were marked with one of six possible glyphs I \* : \_ ( ) / and varied between subjects. As in the current corpus a maximum number of two participants per gender and age group produced each glyph list, the different glyphs are not considered as a condition. A total of 960 items were included in the analysis (12 test words x 2 numbers x 40 speakers), of which two instances were excluded due to technical errors. Thus, 958 instances of gender-neutral forms were included in this study.

## 2.3. Procedure

The stimulus sentences were prompted one by one on a screen for the participants to read aloud. After the reading experiment, they filled out a questionnaire about their personal attitude towards gender-neutral language. As a parameter for the participants' attitude, we used a Likert scale that assigned values of 1 (= 'disagree' to 5 (= 'agree') to the participants' responses to the following assertion: 'You find it important and necessary to use gender-neutral forms, e.g., students.PL.NEUT'.

## 2.4. Data annotation

The data were annotated on several interval tiers in Praat [6] by one of the authors, based on acoustic and auditory cues. Unclear cases were discussed by all authors. For the realisation of the gender marker (GM) we defined GM as the interval after the offset of the preceding segment and before the /n/ of the suffix *in(nen)*, including the vowel /ɪ/ as well as pauses or glottal stops. For gender-neutral realisations the subsegmental parts preceding the segment /ɪ/ were annotated for pauses (#), single glottal stops (?), partial glottalisation (q), and glottalisation on the whole vowel (ql). The segment /ɪ/ was annotated for modal voice vowel (I). Unexpectedly, in some cases the vowel was realised with breathy voice which was marked by t\_I. Silences before glottal stops are only annotated if they were longer than 40ms, accounting for the closure of the stop [7]. Otherwise, no silence threshold was used.

Stops preceding the GM which were perceived as longer than usual were marked with an additional (#), e.g., #d. On a separate tier, we annotated

test words (feminine)	test words (neutral)	translation (feminine)
<i>Königin</i>	<i>König</i> □ <i>in</i>	queen
<i>Köchin</i>	<i>Köch</i> □ <i>in</i>	chef
<i>Freundin</i>	<i>Freund</i> □ <i>in</i>	friend
<i>Probandin</i>	<i>Proband</i> □ <i>in</i>	subject
<i>Studentin</i>	<i>Student</i> □ <i>in</i>	student
<i>Referentin</i>	<i>Referent</i> □ <i>in</i>	speaker
<i>Zeugin</i>	<i>Zeug</i> □ <i>in</i>	witness
<i>Kollegin</i>	<i>Kolleg</i> □ <i>in</i>	colleague
<i>Bäuerin</i>	<i>Bäuer</i> □ <i>in</i>	farmer
<i>Fördererin</i>	<i>Förderer</i> □ <i>in</i>	patron
<i>Doktorin</i>	<i>Doktor</i> □ <i>in</i>	doctor
<i>Autorin</i>	<i>Autor</i> □ <i>in</i>	author

**Table 1:** Overview of the test words in their feminine and gender-neutral forms. Only the singular forms are shown here. For the plural forms the suffix *-en* [ən] is attached, e.g., *König\*innen*. The box □ represents the six gender-neutral glyphs I \* : \_ ( ) /.

the perceived strategy employed by the speaker for expressing gender-neutral forms. The annotation values consisted of *n* if the target word was judged as gender-neutral by the annotators, of *f* if the feminine form was perceived, and of *s* for syntactic expansions, including coordinating conjunctions (e.g., *Kolleginnen und Kollegen* 'colleagues (female and male)', and asyndetic conjunctions (e.g., *Kollegen Kolleginnen*).

## 2.5. Analysis

For the phonetic analysis, the annotation values of the gender marker were grouped into four overarching categories, which are *glott* (glottal activity such as glottal stops, glottalisation or breathy voice before or during /ɪ/), *sil* (silence), *combi* (a combination of glottal activity and pauses), and *none* (no additional marker in the acoustic signal). For a qualitative analysis of attitude towards marking gender-neutrality, we assigned the values 1 and 2 to a negative attitude, 3 to an indifferent attitude, and 4 and 5 to a positive attitude.

## 3. RESULTS

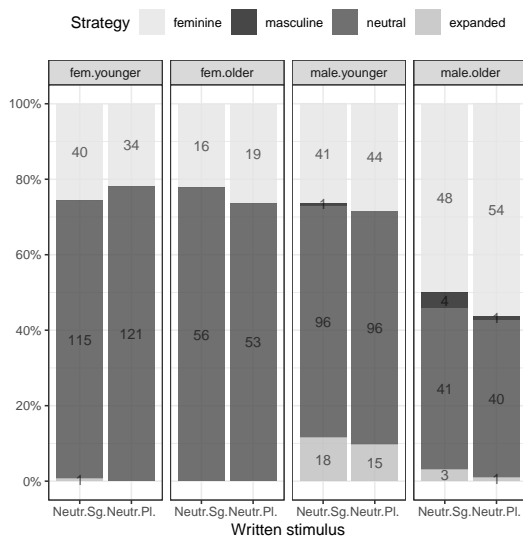
### 3.1. Pronunciation strategies

Regarding RQ 1 (what pronunciation strategies do speakers of German use when reading gender-neutral forms?), women mainly choose the strategy of using gender-neutral forms, followed by the strategy of pronouncing the gender-neutral forms the way feminine forms are pronounced (s. Table 2).

Men prefer the neutral and the feminine strategy as well, but also tend to include other strategies such as pair forms. Some replace the gender-neutral form with the masculine form (s. Table 2). Age alone does not affect the chosen strategy ( $\chi = 2.1, p = 0.15$ ). However, there is a noticeable difference between older men and the other speaker groups. Only about half of the older men chose a strategy other than the feminine strategy, while all other speaker groups mainly realise neutral or pair forms in approx. 75% of the gender-neutral stimuli. Singular or plural number does not seem to exert a strong influence on the chosen strategy (s. Figure 1).

**Table 2:** Proportions of pronunciation strategy per gender and age.

	neutral	pair form	feminine	masculine
fem.younger	75.9	0.3	23.8	0.0
fem.older	75.7	0.0	24.3	0.0
male.younger	61.7	10.6	27.3	0.3
male.older	42.2	2.1	53.1	2.6



**Figure 1:** Pronunciation strategy of gender-neutral singular/plural target words by speaker gender and age.

### 3.2. Phonetic markers

The most frequent phonetic markers for gender-neutrality (n = 617) are glottalisations (53.6%), followed by combinations (29.8%), no marker (12.8%), and silences (3.7%). Breathy voice was observed for 3% of the data and only once occurred together with glottalisation. Table 3 shows the proportions per gender and age groups.

**Table 3:** Proportion of phonetic markers per age and gender group. Participants use glottalisation and glottal stops (glott), combination of glottalisation and glottal stops with silence (combi), silence (sil), or no markers (none).

	glott	combi	sil	none
fem.younger	80.5	14.0	2.1	3.4
fem.older	18.3	69.7	2.8	9.2
male.younger	53.9	27.2	6.3	12.6
male.older	22.2	28.4	3.7	45.7

### 3.3. Influence of the speaker's attitude

Table 4 shows the results from the questionnaire regarding the attitude of the participants towards the usage of gender-neutral forms. Except for the group of older men the majority of participants states that they have a positive attitude. In the older generation the attitude is more often negative for men and women compared to the younger generation where only 7.7% disagree with the usage of gender-neutral forms. Regarding gender, male participants are more often indifferent than female participants.

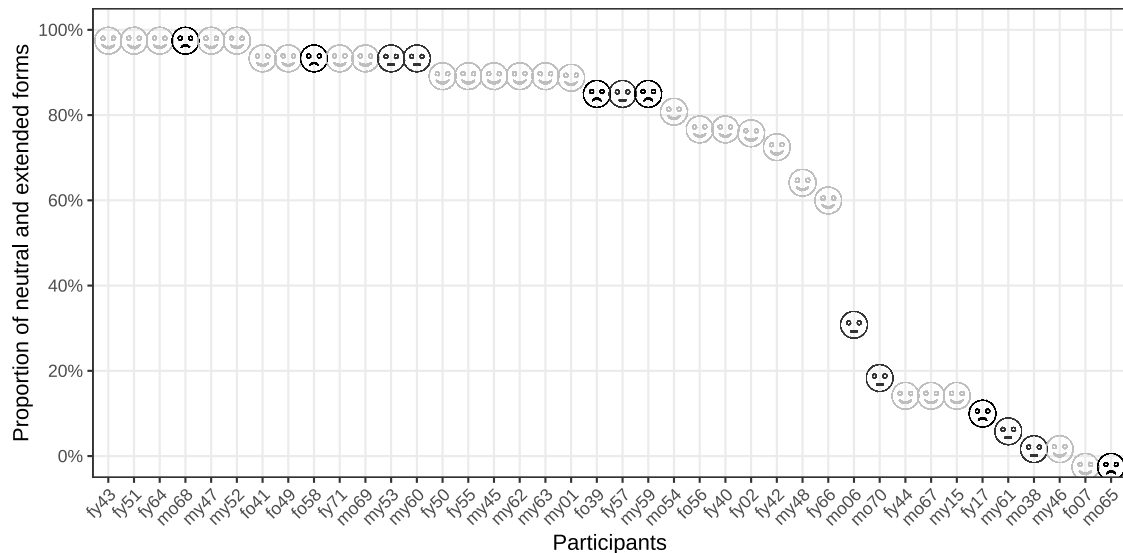
**Table 4:** Proportion of positive, indifferent, and negative attitude per age and gender group.

	negative	indifferent	positive
fem.younger	7.7	7.7	84.6
fem.older	33.3	0.0	66.7
male.younger	7.7	23.1	69.2
male.older	25.1	37.3	37.6

Figure 2 shows the proportion of gender-neutral forms relative to all realized forms per speaker depending on attitude, shown as emojis. No clear trend can be observed, which is corroborated by a generalised linear mixed-effects model with strategy as the dependent variable, attitude as the independent variable, and speakers and words as random intercepts. Attitude as speaker-specific random slope did not improve the model significantly. No significant effect was found for different test words. Attitude is not affecting the gender-neutral strategy significantly ( $\beta = -0.1$ , std. error = 0.1,  $p = 0.5$ ). Accordingly, the mean proportion of neutral and extended forms amounts to 74.5% for speakers indicating a positive attitude towards gender-neutral forms, to 63.9% for speakers with a negative attitude, and to 49.5% for speakers with an indifferent attitude.

## 4. DISCUSSION

In summary, German speakers in this study show a clear effect of gender and age when reading written gender-neutral stimuli. Younger female speakers use the neutral forms most frequently, followed by older females, younger males, and older males. This



**Figure 2:** Proportion of gender-neutral and pair forms for attitude (1 and 2 = frowning face, 3 = neutral face, 4 and 5 = smiling face) per participant. The first two letters of the participant ID refer to their gender group (fy = female younger, fo = female older, my = male younger, mo = male older).

trend is in line with sociophonetic findings on the innovative potential of younger women in language change [8, 9].

Phonetically, glottalisations (including the singleton glottal stop as a subgroup) are most common when realising gender-neutral words, followed by combinations consisting of glottalisation and silences. Compared to Slavik et al. [4], a more detailed picture emerges, as inserted glottalisations and silences might be the driving factor for the gender marker at the position of /l/.

The strategy of pronouncing written gender-neutral forms neutrally or as a pair form have been already discussed by [4] as possibilities to mark gender-neutrality. The feminine strategy (i.e. realising the neutral form without a perceivable gender marker on /l/) probably arises because the written gender-neutral form looks quite similar to the feminine form, but with a glyph added. Additionally, the gender-neutral forms perceived as feminine may come about as speakers either wanted to mark it phonetically and failed, or that they applied other means, such as word accent or loudness. The decision to use a masculine strategy, in contrast, seems to be either a deliberate decision, as a part of the written word is deliberately omitted, or an epiphenomenon of being insecure about the neutral pronunciation, or even a signal of attitude towards gender-neutral language.

However, contrary to our expectations, attitude does not affect the realisation of gender-neutral

language significantly. The data show both participants with a positive attitude realising few neutral forms, and, vice versa, participants with a negative attitude realising many neutral forms. Nevertheless, the data show a general tendency that speakers with a positive attitude towards gender-neutral forms use them more frequently, followed by speakers with a negative attitude. Speakers with indifferent attitudes use gender-neutral forms the least. Since mostly men are indifferent towards the usage of gender-neutral forms this could also be a confound with gender.

In conclusion, the majority of speakers investigated in this study are capable of and aiming to pronounce the glyphs for the gender-neutral suffix as expected, namely with a glottal stop, glottalisation and/or a pause in-between. Except for the group of older men, these phonetic features seem to be well-established markers for gender-neutrality in read German. In future studies we plan to include that word stress and the perception of the neutral strategy.

## 5. ACKNOWLEDGMENTS

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