Received: 8 January 2021 | Accepted: 4 October 2021

DOI: 10.1002/ejsp.2816

RESEARCH ARTICLE

EASP WILEY

The multiple meanings of the gender-inclusive pronoun hen: Predicting attitudes and use

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Abstract

The Swedish gender-inclusive pronoun *hen* can be used generically (referring to anyone), or specifically (referring to non-binary gender identities). Three studies tested evaluations and use of hen, and individual-level predictors. In Study 1 ($N = 2145$), specific hen was slightly favoured over generic hen. In Study 2 ($N = 297$), hen was more negatively evaluated than binary pronouns, and generic hen was more positively evaluated than specific hen. In Study 3 ($N = 450$), hen was less frequently used compared to binary pronouns overall but preferred in generic contexts. Traditionalism mainly predicted attitudes towards generic hen and beliefs about gender, as binary mainly predicted attitudes towards specific hen, although the pattern varied across studies. Because hen was preferred in generic contexts, but not in specific ones, this work has implications for understanding the non-acceptance of non-binary gender identities since the traditional binary notion of gender still is strong.

KEYWORDS
attitudes and use, gender-inclusive pronouns, individual differences, reading

1 | INTRODUCTION

The rise of the Swedish gender-inclusive pronoun *hen*, or gender-inclusive pronouns and neo-pronouns in general, is a continuation of a long-standing linguistic evolution dating back about 50 years, where personal pronouns have been in focus. Back then, the aim was to replace generic *he* with the paired pronoun form *he/she* to increase women's inclusion and visibility in language (Silveira, 1980; Spender, 1985; Stanley, 1978). With a new attention to the broader gender categorisation that goes beyond the traditional binary dichotomy of women/men, the focus has again turned to pronouns and how they can make the language more inclusive. Changing or adding pronouns makes gender identities outside the binary linguistically visible. Among the gender-inclusive initiatives, many pronouns have multiple meanings. According to the Swedish official dictionary (SAOL, 2015), hen can be used (a) as a generic pronoun when gender is irrelevant or should be anonymous, and (b) as a specific pronoun referring to someone with a non-binary gender identity (i.e., who does not identify as woman or man). This is also the case for the pronoun singular *they* in English (https://www.merriam-webster.com/dictionary/they). The multiple meanings of gender-inclusive pronouns have not been the focus of research until just recently (Bradley, 2020; Bradley et al., 2019; Hekanaho, 2020; Lindqvist et al., 2018). The current article adds to this growing literature by documenting how attitudes towards and use of the Swedish gender-inclusive pronoun hen vary depending on its meaning—that is, if it is used in a generic context, or if it refers to a specified individual with a potentially non-binary gender identity. Moreover, we test individual-level factors that could explain the variation in attitudes and use depending on the meaning.

1.1 | Gender representation in language: The role of pronouns

In many languages, pronouns are among the most frequently used words (Campbell & Pennebaker, 2003; Pennebaker, 2011; Zimman, 2017). Languages differ in grammatical structures and how gender is

represented (Stahlberg et al., 2007), and especially the third-person singular pronouns vary between languages (Siewierska, 2013). Some languages have two different pronouns relating to women and men (e.g., English she and he), whereas others only have one pronoun referring to everyone (e.g., Finnish *hän*). Pronouns are important in language because they have a relational function, where the use of pronouns has implications for person perception, for instance by signalling the gender identity of the referent (Lindqvist et al., 2018). Pronouns have also become a way for individuals themselves to signal their gender identity (Hekanaho, 2020).

Research on gender-fair language shows that linguistic changes can increase inclusion and activate broader rather than narrower category boundaries (Lindqvist et al., 2018; Sczesny et al., 2016). Previously, gender-fair language initiatives have mainly focused on decreasing linguistic androcentrism (i.e., the conflation of humanity with masculinity) by either increasing linguistic salience of femininity or by neutralising the salience of gender in language altogether (Sczesny et al., 2016). By adding feminine word-forms to masculine generics (a reform often labelled balancing or femininisation), such as the use of he/she instead of generic he, or adding feminine forms in occupational titles (e.g., Lehrer/Lehrerinnen, see Sczesny et al, 2016 for an overview), women are made linguistically visible. However, pairing feminine/masculine words can symbolically reinforce the notion of gender/sex as a binary construct (Butler, 1988; Lindqvist et al., 2020; Morgenroth et al., 2020) when the paired forms are presented as a unit highlighting the two genders. Hence, individuals with intersex variations and/or non-binary gender identities become invisible (Hyde et al., 2019; Lindqvist et al., 2020). Binary pronouns could also increase stereotypes about women and men as they draw attention to gender when talking about others in the third person (Bigler & Leaper, 2015). Because gender is broader than the binary categories of women and men, languages should explicitly acknowledge and accommodate representations of more gender identities.

One way to increase the linguistic visibility of individuals beyond the binary is to use gender-inclusive pronouns, such as singular they and ze in English, or hen in Swedish. In some cases, the suggested pronouns are redefinitions of already existing words (e.g., English they) whereas others are created to represent non-binary identities (e.g., English ze). Nonetheless, several of these pronouns have multiple meanings, where the pronoun functions both generically and specifically (e.g., non-binary person reference). This is the case for Swedish hen and English they.

Hen was implemented in the Swedish Official Dictionary in 2015 (SAOL, 2015) after an intense debate in 2012 when a children's book and a debate article (authored by a linguist and the publishers of the book) was published. In the book, the main character displayed no gender cues and was referred to as hen. The debate article discussed that gendered pronouns restrict children (Milles et al., 2012). Hen was first mentioned by a linguist scholar in the 1960s, as an alternative to the use of generic he in Swedish (Gustafsson Sendén et al., 2015). However, this initiative had no impact on society and the discussion about hen was silent until the early 2010s when non-binary individuals within the LGBTQI+ community began using hen. While hen was mostly used generically (Bäck et al., 2018), opponents mainly focused on its use as a reference for non-binary gender identities (Ledin & Lyngfelt, 2013), indicating that its meaning can be differently understood and evaluated.

Earlier studies have shown that linguistic changes can be considered effective. For example, hen decreased a male bias compared to other supposedly gender-neutral words (Lindqvist et al., 2018), and participants who were instructed to use hen in a writing task expressed more positive attitudes towards LGBTQI+ people (Tavitz & Pérez, 2019). Also, paired pronouns used in reference to others activated more binary, gender normative mental representations of the referent than did hen (Lindqvist et al., 2021). This research field is still in its infancy, and more research is needed.

As pronouns rarely change, it is vital to understand attitudes to gender-inclusive pronouns and their multiple meanings, and how they become used in language. Much of the research on gender-fair language has focused on the consequences of gender-fair language on person perception and cognition and implies that gender-fair reforms are beneficial (for an overview see Sczesny et al., 2016). Nonetheless, a gender-fair language reform can only have beneficial consequences if it becomes well-integrated into the language users' ordinary vocabulary. Here, attitudes play an important role, because resistance to gender-fair language strategies hinders the success of their implementation (Vergoossen et al., 2020a).

1.2 | Different meanings—different resistance

Earlier research on resistance to gender-fair language reforms in the 1970s and 1980s, when the paired pronouns he/she were suggested to replace the generic he, showed that the opponents expressed hostility and sexist attitudes (Blaubergs, 1980; Parks & Roberton, 1998). Some opponents also argued that there was no need for a change, because a generic word, such as he in this case, cannot contain a bias. Still, research on generic he identified a male bias (Bem & Bem, 1973; Moulton et al., 1978).

Similarly, when hen was introduced, about half of the Swedish population stated that they disliked hen and even more stated that they never used the word (Gustafsson Sendén et al., 2021). In a study about the resistance to hen, Vergoossen et al. (2020a) documented arguments against the use of hen and coded them into different dimensions. One dimension was 'preference for the linguistic status quo', including preferences of language to remain as it always has been, that change is unnecessary, and that it is too difficult to change the language. Some arguments related to grammar, such that the grammatical inflection rules for hen were underdeveloped. For example, how to inflect hen into objective or possessive forms (e.g., forms for hen that correspond to she, her, hers). Such arguments are not surprising as most people prefer to keep things the way they are, as suggested by the status quo bias (Eidelman & Crandall, 2012). Another dimension of arguments against hen was 'binary sexism and cisgenderism' (Vergoossen, et al., 2020a), which is related to an ideological conviction that sex/gender is binary and consists of two mutually exclusive categories: women

and men (Tee & Hegarty, 2006). Such arguments also included the conviction that gender is an essential binary category, and that an individual's gender can be determined based on visual observations of that person. For example, a person who looks like a woman is assumed to be a woman and have genitalia associated with a female gender (Ansara & Hegarty, 2014). Arguments also included the view that even though some individuals identify as non-binary, they are too few to be acknowledged by a pronoun (Vergoossen et al., 2020a).

These two dimensions of opposing the linguistic reform concerning hen—the preference for the linguistic status quo, and binary sexism and cisgenderism—correspond to two related, but different, overarching beliefs about traditionalism (Duckitt et al., 2010) and beliefs about gender as binary (Hyde, et al., 2019; Tee & Hegarty, 2006). It can be expected that these psychological constructs, traditionalism and beliefs about gender as binary, map differently onto the different meanings of hen as a generic or specific pronoun. Traditionalism should be more strongly associated with the generic than the specific meaning of hen as it indicates a general preference for stability and keeping things the way they are, but may not (necessarily) relate to the view of gender as non-binary consisting of more categories than women/men. Beliefs about gender as binary represent a worldview where other gender identities than women and men do not exist and might therefore be especially important for the attitudes towards the specific meaning of hen. In other words, the understanding of the specific meaning of hen implies gender non-binarity, while the understanding of the generic meaning of hen must not imply non-binarity, but rather a change in linguistic forms from she and he, to hen.

In English, Bradley et al. (2019) found that more transcendent views of gender were related to more positive attitudes (measured as reading experiences) for the specific meaning of singular they understood as non-binary, but were not related to attitudes towards the generic meaning of singular they. This indicates that beliefs about gender as binary are more strongly related to the understanding of gender-inclusive pronouns as non-binary. One major difference between the initiatives of singular they and hen is that hen is a novel pronoun and hence the attitudes and use of the two meanings of hen might work differently than for they. Therefore, it is informative to investigate how speakers understand and use the pronoun hen, as it may also be useful for similar language reforms in other languages.

1.2.1 | Attitudes to gender-fair language and behaviour

Much research in the field of gender-fair language has studied how variations in language influence attitudes and person perceptions. For example, women were differently evaluated when feminine forms of professional titles were used, rather than generic masculine forms (Formanowicz et al., 2013; Hodel et al., 2017), and mental representations of women increased when feminine and masculine forms were combined compared to when generic masculine forms were used (Stahlberg et al., 2001). Such research has set the foundation for the importance of gender-fair language. Still, relatively little research has been devoted to exploring how gender-fair language is used. A few studies have shown that individuals used gender-fair language by balancing feminine and masculine words over masculine generic forms when they had read arguments in favour of gender-fair language (Koeser & Sczesny, 2014), were exposed to gender-fair language (Hansen et al., 2016) Koeser et al. 2015, and when they were explicitly instructed to avoid masculine generics (Kuhn & Gabriel, 2014). If gender-fair language reforms are to have any real effects, it is important to know if and how they are spontaneously used by the population of speakers.

The relation between attitudes and behaviour has been extensively discussed throughout the history of psychology (Devine, 1989; Fazio & Olson, 2003; Fazio et al., 1989; Paulhus, 1991; Schwarz & Bohner, 2001). Individuals may express negative attitudes towards something but still refrain from acting upon those attitudes. Social desirability may lead individuals to express attitudes that are socially accepted while privately holding other attitudes, or individuals may display behaviour that is inconsistent with the openly expressed attitudes (Paulhus, 1991).

Regarding language use, behaviour is of special importance, as a new word must be used to have any practical relevance. For example, individuals may express positive or negative attitudes towards a new pronoun, but their attitudes must not correspond to whether they actually use the pronoun. Hence, even if positive consequences of gender-fair language are found in research on, for example, mental representations, those results are of little practical relevance if gender-fair language is not used. In the present studies, we document the attitudes towards the different meanings of hen, but also if and when hen is used.

1.3 | Present research and hypotheses

The aim of the present research was to document attitudes towards and use of the specific and generic meaning of the Swedish pronoun hen. In addition, we tested whether individual beliefs (i.e., traditionalism and beliefs about gender as binary) predicted attitudes and use differently depending on the meaning. We combine direct and indirect measures of attitudes, and a behavioural measure.

Study 1 directly assessed participants' attitudes towards the generic and specific meaning of hen and tested whether traditionalism and beliefs about gender as binary predict these attitudes.

Study 2 experimentally tested how reading experiences differed for sentences including hen or binary pronouns (he, she), with generic or specific meanings. In this way, Study 2 provided an indirect measure of attitudes since the participants were not directly asked to state their attitudes towards the pronouns, but to rate how they experienced the reading. Study 2 also tested whether traditionalism and beliefs about gender as binary predicted the attitudes towards hen when used generically or specifically.

Study 3 experimentally tested participants' spontaneous use of pronouns by a fill in the blank task including sentences that grammatically were phrased to imply generic and specific meaning. Participants were free to choose what word to use, which means that they could use hen or binary pronouns (i.e., she or he) or potentially other words.

Hence, Study 3 provided information regarding if, and how often, hen was spontaneously used in the generic and specific meaning. Study 3 also tested whether traditionalism and beliefs about gender as binary predicted use of hen in generic and specific meaning.

The following hypotheses are formulated:

H1: Attitudes towards the generic meaning of hen are more positive (Studies 1 and 2), and hen is used more often in sentences with generic than specific meaning (Study 3).

H2: Attitudes towards binary pronouns (she and he) are more positive (Study 2), and binary pronouns are used more often (Study 3), compared to attitudes towards and use of hen.

H3: Traditionalism is a stronger predictor of attitudes towards and use of the generic meaning of hen compared to the specific meaning of hen (Studies 1–3).

H4: Beliefs about gender as binary is a stronger predictor of attitudes towards and use of the specific meaning of hen compared to the generic meaning of hen (Studies 1–3).

In Study 1, traditionalism and beliefs about gender were measured with items relating to a preference for the linguistic status quo and cisgenderism (Vergoossen et al., 2020a), while in Studies 2 and 3, we used measures that more directly tapped into these concepts (traditionalism items from the Right-Wing Authoritarianism scale; Duckitt et al., 2010; beliefs about gender scale; Tee & Hegarty, 2006).

In all studies, we included control variables, such as age, gender and the strength of gender identity. All these factors have been shown to be relevant for attitudes towards hen (Gustafsson Sendén et al., 2015, 2021), such that women and younger individuals are more positive to hen. The strength of gender identity has been related to more negative attitudes towards non-binary identities and hen and associated with the conviction that gender is binary (Gustafsson Sendén et al., 2015; Lindqvist et al., 2016; Morgenroth et al., 2020). In Study 1, we also controlled for political orientation and interest in gender issues. Because gender-fair language initiatives often are grounded in politicised social movements that advocate minority rights and because aims for gender-equality intersect with the political left-right spectrum (Jezierska & Towns, 2018), left-wing orientation and a general interest in gender issues have been linked to more positive attitudes to hen (Gustafsson Sendén et al., 2015, 2021; Lindqvist et al., 2016).

Analyses were made in SPSS and STATA. The tests of hypotheses 1 and 2 (comparison of means) were computed in SPSS, whereas the tests of hypotheses 3 and 4 (predicting attitudes and use) were computed in STATA.

1.3.1 | Ethical concerns

The three studies were carried out in accordance with national and international guidelines (Swedish Research Council, 2017; APA, 2017). In Sweden, no formal ethical approval from the Swedish Ethical Review Authority was needed as we did not collect identifying information, and informed consent was required for participation. Participants were informed (a) about their voluntary and anonymous contribution, (b) that they could end or withdraw their participation without stating a reason why, (c) that the results would be presented on aggregated levels only and (d) only used for research purposes. After providing this information, participants gave their informed consent by ticking a box confirming that they had understood and agreed with the information. After answering the questionnaires, participants actively submitted their responses to be included in the studies.

2 | STUDY 1

Study 1 was a large-scale survey that directly assessed participants' self-reported attitudes towards the generic and specific meanings of hen and tested if individual beliefs (traditionalism and beliefs about gender as binary) could predict the attitudes towards the different meanings of hen.

2.1 | Method

2.1.1 | Participants

In total, 2145 participants (M_{age} = 50.27; SD_{age} = 17.63, range: 18–87) fluent in Swedish took part in a survey about language. The data were collected by the survey company Enkätfabriken and drawn to be representative of age, gender and geographical region (see Appendix for breakdown of these variables compared to population values). Binary gender was provided by the survey company;[1] 1017 (47.4%) women, 992 (46.2%) men and 136 (6.3%) did not indicate gender. In the questionnaire, 1945 participants indicated their preferred pronoun; 982 (46%) indicated she; 28 (1%) indicated hen; 935 (44%) indicated he, 63 (3%) wrote something else and 137 (6%) did not respond. When we examined the 'something else' responses, most turned out to be irrelevant.[2] There were high interrelations between the binary gender data provided by the survey company, and participants' preferred pronouns. We chose to use the gender variable that resulted in the least missing data, which was the one provided by the survey company.

2.1.2 | Design and material

The design was a large-scale survey. The participants were invited to a survey about language, which was part of a project to assess the attitudes towards hen over time (Gustafsson Sendén et al., 2021).[3]

The two dependent variables were attitudes towards the specific and generic meanings of hen, measured with two single items: 'What is your attitude about "hen" as a pronoun for someone who does not

[1] Examples are: the boss, the concerned person, doctor, the sex of the person, other, wolf, you, etc. A few participants wrote it or variations of it (which is a Swedish third-person neuter pronoun mainly used for inanimate objects or animals).

[2] The background data were collected upon recruitment of new participants to the online panels. Gender was assessed with a binary answer format.

[3] None of the variables presented in the present article have been used in any other articles.

TABLE 1 Means, standard deviations and correlations for all variables. Study 1, $N = 2112$

	M (SD)	Specific meaning	Generic meaning	Linguistic status quo	Cis-genderism	Left-right	Liberal-conservative
Specific meaning	2.85 (1.48)						
Generic meaning	2.73 (1.51)	0.73***					
Linguistic status quo	3.26 (1.25)	−0.70***	−0.76***				
Cisgenderism	3.11 (1.44)	−0.73***	−0.73***	0.81***			
Left-right	4.07 (1.84)	−0.31***	−0.31***	0.33***	0.36***		
Liberal-conservative	3.49 (1.44)	−0.36***	−0.34***	0.36***	0.42***	0.45***	
Interest in gender issues	3.25 (1.73)	0.45***	0.44***	−0.46***	−0.78***	−0.28***	−0.28***
Gender identity strength	3.15 (1.01)	−0.00	0.01	0.02	0.05*	0.06*	0.07**

*$p < .05$, **$p < .01$, ***$p < .001$.

identify as neither woman nor man?' and 'What is your attitude about "hen" used in a generic sense, for instance instead of "he/she" or when gender is unknown or irrelevant?'. Responses were made on a 5-point scale (1 = very negative, to 5 = very positive).

The main independent variables were designed to capture the dimensions of preference for the linguistic status quo and cisgenderism, found in earlier research on resistance against hen (Vergoossen et al., 2020a). These dimensions tap into the overarching constructs of traditionalism and beliefs about gender as binary but are specifically related to hen. To measure the two dimensions, we formulated three items related to the linguistic status quo (e.g., 'There are other neutral words, hen is not needed', $\alpha = 0.83$), and three items related to cisgenderism (e.g., 'There are only two biological sexes[4]: men and women. Therefore, there is no need for a gender-neutral pronoun', $\alpha = 0.93$). The formulations were inspired both on sample quotes from Vergoossen et al.'s (2020a) study, but also on the gist of the dimensions. For all items, see the Appendix.

The control variables were: (a) interest in gender issues (i.e., 'How interested are you in gender issues?'; 1 = not at all to 5 = very much), (b) political ideology in terms of a left-right and a liberal-conservative scale (i.e., 'Where do you place yourself on a left-right scale?'; 1 = clearly to the left to 7 = clearly to the right, and 'Where do you place yourself on a liberal-conservative scale?'; 1 = clearly liberal to 7 = clearly conservative), and (c) gender identity strength, measured with 4 items of a version of the collective self-esteem measure (Luhtanen & Crocker, 1992) adapted to gender (Lindqvist et al., 2020, e.g., 'My gender identity is an important part of my self-image'; 1 = do not agree to 5 = completely agree, $\alpha = 0.75$).

2.2 | Results and discussion

Table 1 shows means, standard deviations and correlations for all variables included in Study 1. There were highly significant correlations among all main variables of interest ($rs = 0.73$–0.83).

To test H1 that attitudes towards the generic meaning of hen would be more positive compared to the specific meaning of hen, a paired samples *t*-test was conducted. In contrast to the hypothesis, participants were slightly more negative towards the generic meaning of hen ($M = 2.73$, $SD = 1.51$) than the specific meaning of hen ($M = 2.85$, $SD = 1.48$), $t(2010) = 4{,}87$, $p < .001$, Cohen's $d = 0.08$. Because of the large sample size and small effect size, the difference between the two may be negligible. The high correlation and small effect size could be based on a desire to appear coherent (Schwarz, 2007; Schwarz & Bohner, 2001) and therefore respond as similarly as possible to these direct questions on attitudes towards hen.

To test H3 and H4 that traditionalism and beliefs about gender as binary were differentially related to attitudes towards the generic and specific meanings of hen, we ran a hierarchical multivariate multiple regression analysis, which allowed us to test the strength of specific predictors across outcomes. This is achieved through a Wald-test with an F-distribution between the unconstrained coefficients (StataCorp., 2013).

In Step 1, we included the control variables, and in Step 2, the main independent variables. The results are shown in Table 2 where beta weights are presented.

Variance inflation factor (VIF) was used to assess potential collinearity issues. The VIF indicates how much variance of an estimated regression coefficient is increased due to collinearity. The square root of the VIF indicates how much larger the standard error of the coefficient is compared to if the variable had 0 correlation with other variables. Even though there is no agreed-upon cut-off for VIF indicative of multicollinearity problems, a common cut-off is a VIF of 5 (Sheater, 2009). In the present study, VIFs did not indicate any major collinearity issues. The highest VIF was found for the dimensions of cisgenderism (3.16), and linguistic status quo (3.07). VIF for the other predictors varied from 1.01 to 1.38.

In Step 1, all background variables except gender identity strength predicted the attitudes towards both the specific and generic meanings of hen, and the coefficients were almost identical. The

[4] The term sex is used here because the argument is related to an idea of biological separation between the two sexes. In Swedish, the term for gender, *kön*, is in fact the same as the term for sex.

TABLE 2 Hierarchical multivariate multiple regression analysis predicting attitudes towards generic and specific meanings of hen. Study 1, $N = 2112$

		Generic meaning	Specific meaning
Step 1	Age	−0.19***	−0.16***
	Gender	0.11***	0.11***
	Gender interest	0.30***	0.31***
	Left-right	−0.14***	−0.11***
	Liberal-conservative	−0.17***	−0.20***
	Gender identity strength	−0.01	0.01
		Adj. $R^2 = 0.30$***	Adj. $R^2 = 0.30$***
Step 2			
	Age	−0.04**	−0.02
	Gender (0 = woman, 1 = man)	0.03*	0.04**
	Gender interest	0.06***	0.09***
	Left-right	−0.03	−0.01
	Liberal-conservative	−0.02	−0.05**
	Gender identity strength	0.02	0.02
	Cisgenderism	−0.29***	−0.45***
	Linguistic status quo	−0.46***	−0.26***
		$\Delta R^2 = 0.32$***	$\Delta R^2 = 0.28$***
		Adj. $R^2 = 0.62$***	Adj. $R^2 = 0.58$***

Note: gender is here included as a binary variable, and coded 0 = man, 1 = woman.
*$p < .05$, **$p < .01$, ***$p < .001$.

explained variance was 0.30 for both outcomes. In Step 2, when preference for linguistic status quo and cisgenderism were added, the predictors in Step 1 became weaker or non-significant. As can be seen in Table 2, the explained variance increased substantially, by about 0.30 for both outcomes, indicating that underlying beliefs were strong predictors of directly assessed attitudes.

To test H3 and H4 that traditionalism would be a stronger predictor of attitudes towards the generic meaning of hen than the specific meaning of hen, and that beliefs about gender as binary would be a stronger predictor of attitudes towards the specific meaning of hen than to the generic meaning of hen, we compared the coefficients for these variables across the outcomes, using an *F*-test. This test shows if the coefficients are equal or if they significantly differ (StataCorp., 2013). In support of H3 and H4, the coefficient for the predictor preference for linguistic status quo was significantly stronger for attitudes towards the generic meaning than the specific meaning of hen, $F(1,1980) = 54.09$, $p < .001$, and cisgenderism was a significantly stronger predictor of attitudes towards the specific meaning of hen than the generic meaning of hen, $F(1,1980) = 24.18$, $p < .001$. Hypotheses 3 and 4 were therefore supported.

Underlying beliefs about traditionalism and gender as binary, here measured as a preference for the linguistic status quo and cisgenderism, both predicted attitudes towards both types of meaning. Nonetheless, traditionalism was a stronger predictor of attitudes towards generic rather than the specific meaning of hen. Conversely, beliefs about gender were a stronger predictor of attitudes towards specific than generic hen, indicating that these individual factors are differentially related to attitudes towards the different meanings of hen.

In this study, both main independent variables were related to attitudes towards hen. Thus, it is not surprising that they were related to the outcomes, as there were strong correlations between both the attitudinal and individual belief measures ($rs = 0.70–0.81$). Therefore, Study 2 tested more general measures of traditionalism and beliefs about gender as binary. We also extended Study 1 by using indirect measures of reading experience to assess attitudes towards the different meanings of hen.

3 | STUDY 2

In Study 2, attitudes towards hen were measured indirectly by asking participants to read and evaluate sentences including pronouns used in either a specific or generic meaning. The sentences included hen or binary pronouns (he and she). Hence, we could test if attitudes towards the generic meaning of hen would be more positive compared to the specific meaning of hen (H1) and if attitudes towards binary pronouns would be more positive compared to attitudes towards hen (H2).

Participants read the sentences presented to them and rated each sentence on grammaticality, reading difficulty and two indicators of negative valence. These different evaluations tap into different aspects of resistance against hen, which in turn should be differently related to individual-level predictors and may vary between sentences that imply generic and specific hen. We also assessed if traditionalism and beliefs about gender as binary differently predicted the outcomes, as stated in H3 and H4.

3.1 | Method

3.1.1 | Participants

In total, 297 Swedish participants ($M_{age} = 48.40$, $SD_{age} = 17.15$; range = 19–89) completed the study. As in Study 1, they were sampled by Enkätfabriken to be representative based on age, gender and geographical region (see Appendix). Binary gender was provided by the survey company; 145 (48.8%) women, 148 (49.8%) men and 4 (1.3%) missing. Participants also indicated their gender identity with an open-ended question (Lindqvist et al., 2020). Almost all participants (except five) wrote binary responses in line with the gender provided by the survey company.[5]

[5] Two participants who stated that they preferred she as their pronoun were categorised as men by the survey company's background data, and three participants who preferred he as their pronoun were categorised as women.

3.1.2 | Design and material

The experiment was a 2 (meaning: generic/specific) × 2 (pronoun: hen/binary) within-participant factorial design with three outcomes measuring grammaticality, reading difficulty and negative valence of the sentences. The stimuli material consisted of 12 sentences with two clauses. The first clause presented an occupational role noun (indicating generic meaning) or a name (indicating specific meaning), and the second subordinate clause presented a pronoun (either a binary pronoun or hen). The names were prototypically feminine (e.g., Anna), masculine (e.g., Fredrik) or gender-neutral (e.g., Lex). Examples of sentences were:

> Generic meaning: When a train attendant [nurse, pilot] is sick, hen [he/she] should not go to work.[6]

> Specific meaning: Anna [Fredrik, Lex] took a nap, she [he, hen] was really tired.[7]

Occupational role nouns in indefinite forms were used to indicate generic meaning whereas personal names were used to indicate specific meaning, as done in previous research (Bradley, 2020; Hekanaho, 2020). Names activate the interpretation of a specific person to a larger extent than do role nouns (Conrod, 2019). There were three sentences in each combination of meaning and pronoun (i.e., for each condition), hence, 12 target sentences in total. We also included six filler sentences (see Appendix for all sentences), ending up with 18 sentences in total.

The outcome variables were introduced with one question that read: 'The language in the sentence…' followed by statements in a matrix format: 'is grammatically correct', 'is difficult to read', 'makes me irritated', 'is ugly'. Each statement was rated on a 7-point scale from 1 = do not agree at all to 7 = completely agree. Irritated and ugly yielded almost identical results and were strongly correlated (*r*s = 0.73–0.80) and were therefore collapsed into one *negative valence* index. Mean indices were computed for the three sentences in each condition such that we arrived at three average indices of grammaticality, reading difficulty and negative valence.

Traditionalism was operationalised with five items sampled from varying measures of the Right-Wing Authoritarian Subscale Traditionalism (Bizumic & Duckitt, 2018; Duckitt et al., 2010; e.g., 'It is important to keep traditional values and moral', response scale: 1 = not at all true to 7 = completely true; $\alpha = 0.76$).

Beliefs about gender as binary were operationalised with eight items from the gender beliefs scale (Tee & Hegarty, 2006; e.g., 'There are only two genders, man and woman', response scale: 1 = do not agree at all to 7 = completely agree, $\alpha = 0.89$).

Control variables were age, binary gender and gender identity strength (measured as in Study 1, $\alpha = 0.77$).

[6] Given that the deviation was so small, we decided to use the background data provided by the survey company in our analyses, since this resulted in the least number of missing values. There were no non-binary responses.

[7] We did not have any mismatched sentences such as Anna–he, or Fredrik–she.

Each sentence was presented on a separate page in the survey and after reading each sentence participants rated grammaticality, reading difficulty, irritation, and ugliness of the sentence. After completing the ratings, participants responded to background questions including the two belief scales. Finally, they were thanked and debriefed about the purpose of the study.

3.2 | Results and discussion

Table 3 shows correlations for the main dependent and independent variables in Study 2 within each condition. A full correlation table is found in the Appendix. Correlations between attitudes towards the specific and generic meaning of hen varied across the outcome measures from 0.44 to 0.76, all *p*s < .001. The correlation between traditionalism and beliefs about gender as binary was 0.56, $p < .001$.

To test H1 that the attitudes towards the generic meaning of hen should be more positive than towards the specific meaning and H2 that attitudes towards binary pronouns should be more positive than attitudes towards hen, we ran three separate repeated measures 2 (meaning: generic/specific) × 2 (pronoun: hen/binary) ANOVAs, one for each dependent variable (grammaticality, reading difficulty and negative valence). The *F*-test results are shown in Table 4.

There were significant main effects of pronoun, where hen was rated more negatively overall compared to binary pronouns on grammaticality ($M_{hen} = 4.85$, $SD = 1.66$; $M_{binary} = 5.84$; $SD = 1.19$), reading difficulty ($M_{hen} = 2.18$, $SD = 1.42$; $M_{binary} = 1.80$, $SD = 1.00$) and negative valence ($M_{hen} = 3.26$, $SD = 1.82$; $M_{binary} = 2.01$, $SD = 1.04$). These results support H2 that binary pronouns in general would be more positively evaluated.

There were also main effects of meaning, where the generic meaning was rated more positively than the specific meaning for all outcomes: grammaticality ($M_{generic} = 5.74$, $SD = 1.30$; $M_{specific} = 4.93$, $SD = 1.47$), reading difficulty ($M_{generic} = 1.93$, $SD = 1.08$; $M_{specific} = 2.04$, $SD = 1.32$) and negative valence ($M_{generic} = 2.45$, $SD = 1.20$; $M_{specific} = 2.80$, $SD = 1.32$).

The main effects were qualified by significant interaction effects (see Figures 1–3). For sentences including hen, follow-up pairwise comparisons with paired *t*-tests showed that hen used in sentences with generic meaning was rated more positively than hen used in sentences with specific meaning. Sentences with generic hen were rated as more grammatically correct, $t(295) = 11.00$, $p < .001$, Cohen's $d = 0.51$ ($M_{generic} = 5.53$, $SD = 1.72$; $M_{specific} = 4.18$, $SD = 2.18$), less difficult to read, $t(288) = -4.87$, $p < .001$, Cohen's $d = 0.28$ ($M_{generic} = 2.34$, $SD = 1.63$; $M_{specific} = 2.03$; $SD = 1.42$) and evoked less negative valence, $t(284) = -9.35$, $p < .001$, Cohen's $d = 0.55$ ($M_{generic} = 2.89$, $SD = 1.89$; $M_{specific} = 3.65$, $SD = 2.00$) compared to sentences with the specific meaning of hen.

For sentences including binary pronouns, the only significant difference was in evaluations of grammaticality, $t(296) = 3.18$, $p = .002$, Cohen's $d = 0.19$. Sentences with the generic use of binary pronouns were rated as slightly more grammatically correct ($M = 5.97$,

TABLE 3 Means, standard deviations and correlations among variables within the three outcome measures, in Study 2, $N = 297$

	M (SD)	Grammaticality				Reading difficulty				Negative valence			
		Generic hen	Specific hen	Generic binary	Specific binary	Generic hen	Specific hen	Generic binary	Specific binary	Generic hen	Specific hen	Generic binary	Specific binary
Generic hen													
Specific hen		0.44***				0.76***				0.75***			
Generic binary		0.46***	0.26***			0.35***	0.38***			0.12*	0.19**		
Specific binary		0.43***	0.30***	0.50***		0.53***	0.49***	0.56***		0.40***	0.38***	0.51***	
Age	48.40 (17.15)	−0.10	−0.24***	0.05	−0.08	−0.00	0.01	−0.14*	−0.02	0.08	0.05	0.20**	−0.02
Gender		−0.08	−0.11	0.10	0.05	0.06	0.04	0.04	0.10	0.16**	0.12*	−0.12	0.01
Gender identity strength	4.38 (1.42)	0.07	−0.03	0.05	−0.18*	−0.18**	−0.10	0.06	−0.08	0.04	0.09	0.04	0.01
Beliefs about gender as binary	3.89 (1.62)	−0.24***	−0.23***	0.02	0.05	0.23***	0.17**	−0.05	0.10	0.47***	0.44***	−0.20**	0.07
Traditionalism	3.20 (1.08)	−0.29***	−0.14*	−0.02	−0.05	0.28***	0.14*	−0.01	0.17**	0.46***	0.36***	−0.12	0.13*

*$p < .05$, **$p < .01$, ***$p < .001$.

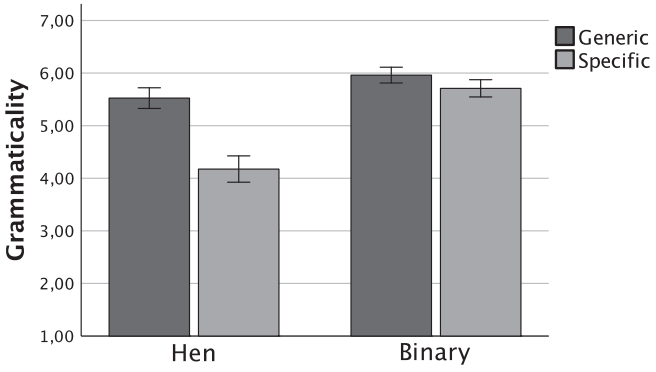

FIGURE 1 Mean ratings for grammaticality, split on pronoun and meaning conditions. Error bars show 95% confidence intervals

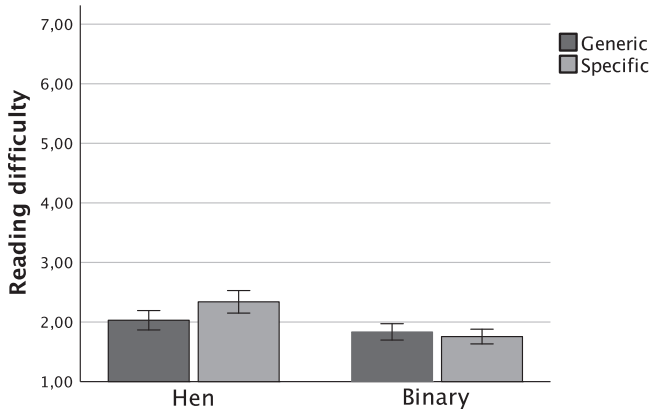

FIGURE 2 Mean ratings for reading difficulty, split on pronoun and meaning conditions. Error bars show 95% confidence intervals

SD = 1.31), compared to the specific use of binary pronouns (*M* = 5.71, *SD* = 1.43). Follow-up comparisons for reading difficulty and negative valence did not differ (*ts*(286) = 1.30 and 1.10, *ps* > .05, respectively). All pair-wise comparisons for binary pronouns can be found in the Appendix.

In sum, for all outcome variables, the results supported H1 that attitudes towards the generic meaning of hen were more positive compared to attitudes towards the specific meaning of hen. In addition, it

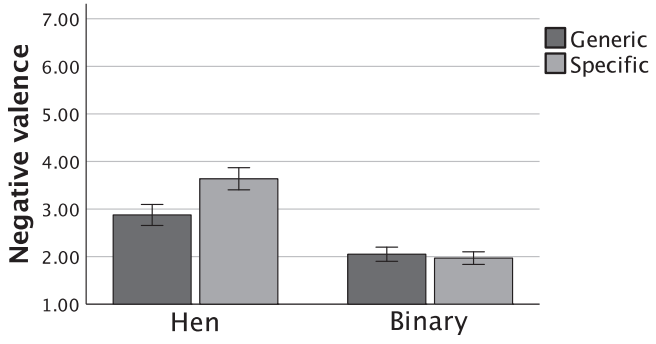

FIGURE 3 Mean ratings for negative valence, split on pronoun and meaning conditions. Error bars show 95% confidence intervals

TABLE 4 *F*-values and effect size estimates for repeated measures ANOVAs for the three dependent variables, for main effects of conditions and their interaction. Study 2, $N = 297$

	Grammaticality		Reading difficulty		Negative valence	
	F	η_p^2	F	η_p^2	F	η_p^2
Pronoun condition (hen/binary)	114.59***	0.28	7.36**	0.03	139.16***	0.33
Meaning (generic/specific)	127.57***	0.30	28.50***	0.09	42.93***	0.13
Interaction	58.42***	0.17	17.13***	0.06	54.98***	0.16

Note. *F*-values from within-subjects effects using Huynh–Feldts correction. $N = 297$.
***$p < .01$, ***$p < .001$.

TABLE 5 Hierarchical multivariate multiple regression analyses predicting grammaticality, reading difficulty and the valence of generic and specific hen. Study 2, $N = 297$

		Grammaticality		Reading difficulty		Negative Valence	
		Generic	Specific	Generic	Specific	Generic	Specific
Step 1	Age	−0.10	−0.23***	−0.01	0.01	0.06	0.02
	Gender	0.09	0.09	−0.10	−0.07	−0.21***	−0.17**
	Gender id strength	0.08	0.09	−0.17**	0.09	0.05	0.12*
		Adj. $R^2 = 0.01$	Adj. $R^2 = 0.05$***	Adj. $R^2 = 0.03$*	Adj. $R^2 = 0.00$	Adj. $R^2 = 0.04$*	Adj. $R^2 = 0.04$*
Step 2	Age	−0.03	−0.22***	−0.06	−0.2	−0.05	−0.07
	Gender	0.01	0.03	−0.00	−0.02	−0.05	−0.03
	Gender id strength	0.11*	0.04	−0.20***	−0.11	−-0.00	0.07
	Traditionalism	−0.20**	0.06	0.22**	0.07	0.30***	0.18**
	Beliefs about gender as binary	−0.14	−0.21***	0.15*	0.14	0.30***	0.33***
		$\Delta R^2 = 0.07$***	$\Delta R^2 = 0.03$**	$\Delta R^2 = 0.08$***	$\Delta R^2 = 0.02$*	$\Delta R^2 = 0.23$***	$\Delta R^2 = 0.16$***
		Adj. $R^2 = 0.08$***	Adj. $R^2 = 0.08$**	Adj. $R^2 = 0.11$***	Adj. $R^2 = 0.02$*	Adj. $R^2 = 0.27$***	Adj. $R^2 = 0.20$***

Note: gender here is included as a binary variable, and coded 0 = man, 1 = woman.
*$p < .05$, **$p < .01$, ***$p < .001$.

should be noted that the ratings for reading difficulty were overall very low, indicating that reading sentences with hen, regardless of the type of meaning, is not difficult.

To test H3 and H4, that traditionalism would be a stronger predictor of attitudes towards the generic meaning of hen than the specific meaning, and that beliefs about gender as binary would be a stronger predictor of attitudes towards the specific meaning of hen than the generic, we ran three separate hierarchical multivariate multiple regression analyses, one for each dependent variable (grammaticality, reading difficulty and negative valence) including both generic and specific meanings of hen. Again, the multivariate approach allows for comparing the strength of individual predictors across outcomes. Step 1 included age, binary gender and gender identity strength. Step 2 added traditionalism and beliefs about gender as binary. VIFs indicated no problems with multicollinearity (1.00–1.59). The results are summarised in Table 5, where beta weights are presented.

In Step 1, there were fairly weak and inconsistent effects of the background variables, as can be seen in Table 5. Step 2 included both belief variables (traditionalism and beliefs about gender as binary) and increased the explained variance significantly for all outcomes. However, the added explained variance was low for both grammaticality ratings and reading difficulty (0.02–0.08), while the added explained variance of traditionalism and beliefs about gender as binary was more substantial for negative valence (0.20–0.27).

In support of H3, traditionalism was a stronger predictor of attitudes to the generic meaning of hen compared to the specific meaning for all outcome variables (grammaticality, $F(1,279) = 9.24$, $p = .002$; reading difficulty, $F(1,272) = 7.15$, $p = .008$; negative valence $F(1,268) = 5.20$, $p = .02$). Traditionalism predicted ratings of sentences with the generic meaning of hen for all outcome variables. Yet, traditionalism also predicted ratings of negative valence for the sentences with the specific meaning of hen.

In contrast to H4, the coefficients for beliefs about gender as binary did not differ across any of the outcome variables (grammaticality, $F(1,279) = 1.92$, $p = .17$; reading difficulty, $F(1,272) = 0.33$, $p = .56$; negative valence, $F(1,268) = 0.40$, $p = .53$). Beliefs about gender as binary

predicted the ratings of sentences with the specific meaning of hen on grammaticality and negative valence, but the coefficients were equally strong for sentences with the generic meaning of hen.

Even though the model fit significantly improved in Step 2 compared to Step 1, the explained variance for both grammaticality and reading difficulty was fairly low indicating that for perceptions of such 'objective' properties of sentences, individual-level variables related to traditionalism and beliefs about gender as binary were not that important. However, such features were strongly related to negative valence. This imbalance is important because it indicates that resistance to hen is mainly based on emotional or affective grounds, and less on 'rational' or objective grounds, such as actual problems in processing the content of a sentence. This aligns with results from eye-tracking (Vergoossen et al., 2020b), where hen did not have a relevant processing cost in reading. Still, hen seems to evoke negativity.

Attitudes towards a word do not solely decide how the word becomes adopted by the language users. Rather, the crucial part is how the word is used. In the third study, we therefore test how individuals spontaneously use the Swedish pronoun hen—to refer to specific individuals, indicative of a non-binary gender identity, and/or as a generic pronoun. To do this, we created sentences like those used in Study 2, but with missing pronouns, where the participants' task was to fill in the blank spaces (i.e., a cloze test; Hyde, 1984; Martyna, 1980; Hekanaho, 2020).

4 | STUDY 3

Studies 1 and 2 tested attitudes towards the generic and specific meanings of hen. In Study 3, we tested behaviour in terms of spontaneous use of pronouns in a set-up where participants were free to fill in the blanks in sentences where a place for a pronoun was missing. The sentences included either generic or specific references. Past studies have shown that at least half of the Swedish language speakers claim that they use hen (Gustafsson Sendén et al., 2021), yet we do not know in what contexts they use hen, nor if self-reported use aligns with actual use. We predicted that hen would be more common in sentences with generic than specific meaning (H1), and that binary pronouns (i.e., he or she) would be used more often than hen (H2). We also hypothesised that traditionalism would predict the generic use of hen more strongly than beliefs about gender as binary (H3), whereas beliefs about gender as binary would predict the specific use of hen more strongly than traditionalism (H4).

4.1 | Method

4.1.1 | Participants

Participants ($N = 450$; $M_{age} = 48$, $SD_{age} = 18$, range: 18–90), recruited by the survey company Enkätfabriken, completed an online experiment. The sample was drawn randomly to be the representative of age, gender and geographical region (see the Appendix). As previously, the survey company provided binary gender; 239 (53.1%) women, 204 (45.3%) men and 7 (1.6%) missing. Participants also indicated gender identity with an open-ended question and six participants responded something other than binary gender.[8] Again, the binary background data were used given the small deviation.

4.1.2 | Design and materials

Study 3 was a within-participant experimental design with two conditions (meaning: generic/specific). Participants were presented with 12 sentences in randomised order, one at a time, where the pronoun in the sentence was missing, and they were instructed to fill in 'the word you think is missing' (to capture spontaneous use, we deliberately did not write 'the *pronoun* that is missing').

The sentences varied with respect to specific or generic references, such that three were generic and three were specific; the remaining six sentences were fillers referring to objects or animals rather than humans (see Appendix). As in Study 2, the specific meaning was operationalised as naming the referent with a first name (e.g., Lex, Pim, Alex;[9] in total, nine names were used in randomised order). Generic reference was operationalised as using a role noun (in indefinite form) varying in gender stereotypicality (e.g., pilot, receptionist, etc.; in total, six role nouns were used in randomised order). An indefinite form means that the role noun refers to a general category. Examples of sentences are:

> Specific: Lex [Lo, Pim] took a nap, _____ was really tired.

> Generic: When a train attendant [receptionist, pilot] is sick, _____ should not go to work.

Participants were first informed about the study and ethical concerns and required to provide informed consent. After completing the fill in the blanks task, participants responded to background questions including the belief scales. They were thanked and debriefed about the purpose of the study.

4.1.3 | Measures

Hen use: The main dependent variable was whether participants spontaneously used or did not use hen in sentences with generic or specific meaning. There were three sentences in each condition so that a participant could use hen 0–3 times (and vice versa for binary pronouns). We recoded this into a dichotomous variable so that if a participant used hen at least once, this was coded as 1, and no use of hen was coded as 0.

[8] Four participants responded non-binary, one participant responded 'cis' but did not indicate gender, and two participants did not give any response.

[9] We only used gender-neutral names, as we expected that no participants would associate a traditionally binary-gendered name with hen.

TABLE 6 Frequencies of sentences including hen, binary pronouns or other words, divided on condition (generic/specific) and total. Study 3, $N = 450$

Meaning	Hen	Binary	Other	Total
Generic	655 (49%)	240 (18%)	455 (33%)	1350
Specific	268 (20%)	864 (65%)	207 (15%)	1339
Total	923 (34%)	1104 (41%)	662 (25%)	2689

TABLE 7 Means, standard deviations and correlations for the main dependent and independent variables. Study 3, $N = 450$

	M (SD)	Traditionalism	Beliefs about gender	Specific hen
Traditionalism	3.36 (0.98)			
Beliefs about gender as binary	3.75 (1.56)	0.46***		
Specific hen (0/1)		−0.11**	−0.27***	
Generic hen (0/1)		−0.18***	−0.30***	0.38***

**$p < .01$, ***$p < .001$.

Binary pronouns use was included to test Hypothesis 2. Any occurrence of a binary pronoun (she, he or paired pronouns he/she, or any variation of these)[10] was coded as 1, whereas a lack of binary pronouns was coded as 0.

Traditionalism ($\alpha = 0.75$), beliefs about gender as binary ($\alpha = 0.89$) and gender identity strength ($\alpha = 0.76$) were measured with the same instruments as in Study 2.

4.2 | Results and discussion

Table 6 include descriptive statistics of the total number of sentences that were generated by the participants, split on condition and what type of pronoun was used. In total, 2689 complete sentences were generated (i.e., 11 responses were not complete sentences and hence not included in the analyses). Hen was used in 34% of the sentences, and binary pronouns were used in 41% of the sentences. Yet, pronoun use varied strongly between conditions, such that in sentences with generic meaning, hen was most frequently used (49%), while in sentences with specific meaning, binary pronouns were most frequently used (65%).

Earlier research shows that about 50% of the Swedish population claim to use hen at some point (Gustafsson Sendén et al., 2021), but we see here that use is heavily dependent upon the type of meaning. In the following analyses, we have not included the 'other' category.

Table 7 shows means and standard deviations for the main independent variables, as well as correlations (Spearman's rank-order correlation) between these variables and the different uses of hen. Due to non-independence between the use of hen and binary pronouns, the only use of hen is included in the table.

[10] We included writings such as 'his mother', for example, 'Kim raked the leaves, because *his mother* wanted the garden to look pretty', because in this writing, the participant has referred to Kim as 'he'.

TABLE 8 Distribution of hen-users and non-users across generic and specific sentences. Study 3, $N = 450$

		Specific meaning	
		Non-user	User
Generic meaning	Non-user	161	19
	User	145	125

As can be seen in Table 7, higher traditionalism and stronger beliefs about gender as binary were related to less use of hen, regardless of meaning.

To test H1, that hen would be used in the generic meaning more than in the specific meaning, we ran a McNemar test, which showed that there was a significant difference between the use of hen in generic as compared to specific sentences, $\chi^2 = 95.27$, $p < .001$. The distribution of users and non-users split on generic and specific meaning is shown in Table 8.

To test H2, that binary pronouns would be used more often than hen, regardless of meaning, we used a χ^2 test of equality of distribution. Because the use of hen and binary pronouns are non-independent on an individual level, we used the total number of sentences generated, and compared the number of sentences including hen (923) against the number of sentences including binary pronouns (1104), see Table 6. The results showed that there were significantly more sentences generated with binary pronouns compared to sentences generated with hen, χ^2 (1,2027) = 16.16, $p < .001$. Hence, H2 was supported.

Taken together, these results imply that hen was the most frequently used pronoun in sentences with the generic meaning. This is noteworthy, because, despite the negative attitudes towards hen, hen was spontaneously used in almost half of the generic sentences, in line with previous research on self-reported use (Gustafsson Sendén et al., 2021). This result also aligns with Study 2, where the attitudes towards the generic meaning of hen was more positive compared to the specific meaning, but it contrasts to Study 1, where attitudes towards the generic and specific meanings did not differ substantially. In contrast, participants did not use hen to the same extent in the specific sentences—which could be understood as representing a non-binary gender identity, although the names were deliberately chosen to encourage non-binary associations. This could reflect a general resistance against non-binarity.

To test H3, that traditionalism would be a stronger predictor of use of hen in sentences with the generic meaning, and H4, that beliefs about gender as binary would be a stronger predictor of use of hen in sentences with the specific meaning, we ran a multiple bivariate probit regression model with the dichotomous outcome variables use and non-use of hen (coded 1 for use and 0 for non-use) in sentences with generic and specific meaning. The bivariate probit model is a joint model for two dichotomous outcome variables, using maximum-likelihood estimation.

TABLE 9 Bivariate probit regression analysis predicting specific and generic use of hen (coded 0 and 1). Study 3, $N = 450$

		Generic	Specific
Model 1	Age	0.004	−0.002
	Gender	0.31*	0.39**
	Gender identity strength	−0.04	−0.10*
		LR $\chi^2 = 7.47$	LR $\chi^2 = 14.99$**
		Pseudo $R^2 = 0.01$	Pseudo $R^2 = 0.03$
Model 2			
	Age	0.01	−0.002
	Gender	0.10	0.18
	Gender identity strength	0.003	0.08
	Traditionalism	−0.09	0.06
	Beliefs about gender as binary	−0.23***	−0.25***
		LR $\chi 2 = 46.09$***	LR $\chi^2 = 40.53$***
		Pseudo $R^2 = 0.08$	Pseudo $R^2 = 0.07$

Note: gender is here included as a binary variable, and coded 0 = man, 1 = woman.
*$p < .05$, **$p < .01$, ***$p < .001$.

Model 1 included age, binary gender and gender identity strength. Model 2 added traditionalism and beliefs about gender as binary. Again, VIFs indicated no problems with multicollinearity, ranging from 1.00 to 1.33. The results are shown in Table 9, where probit regression coefficients are presented. The coefficients indicate the change in the *z*-score index for a one-unit change in the predictor, and the sign of coefficient indicates the direction of the relationship.

Table 9 shows that in Model 1, age was unrelated to hen use, while women more frequently than men used hen. There was a weak effect that stronger identification with one's gender was related to less use of hen in sentences with specific meaning. However, these effects disappeared in Model 2 when adding the belief predictors to the model. Model fit improved from Model 1 to Model 2 for both outcome variables, although the explained variance was relatively low.

Beliefs about gender as binary were the strongest predictor of use of hen regardless of meaning, such that stronger beliefs that gender is a fixed and binary category were associated with less use of hen. Again, the multivariate approach allowed us to test differences in the coefficients between the outcomes using a χ^2-distribution due to the maximum-likelihood estimation of the probit approach. These tests revealed no significant difference in coefficient size between either traditionalism or beliefs about gender as binary between the two outcomes ($\chi^2 = 3.38$, $p = .07$ for traditionalism, and $\chi^2 = 0.07$, $p = 0.80$ for beliefs about gender as binary). Thus, H3, that traditionalism would predict the use of hen in sentences with generic meaning of hen, was not supported. H4, that beliefs about gender as binary would predict the use of hen in sentences with specific meaning, was partially supported. Beliefs about gender as binary also predicted the use of hen in sentences with generic meaning. This means that when it comes to using hen, beliefs about gender as binary seem to be more important than for the attitudes. One possible explanation is that even though role nouns with indefinite articles were used as an indicator of the generic use of hen, participants may have interpreted hen as non-binary also in these instances. That is, a train attendant may be a non-binary individual. Still, this is unlikely since hen was spontaneously used more frequently in the generic sentences with role noun referents.

The explained variance in both models was relatively low, indicating that other variables may better explain why individuals choose to use hen or not. For instance, how often they encounter hen in their daily lives (e.g., in reading newspapers, interacting with friends, knowing people who use hen as their pronoun). Language competence, that is, the capacity to produce language in different ways, also differs between individuals as well as perceptions of authorities' recommendations of use. While hen has become increasingly used as a generic pronoun (Gustafsson Sendén et al., 2021), it is still relatively rare as a pronoun denoting non-binary gender identity. One reason is that binary gender identities are of course more common.

These results are important because they highlight the complicated relation between attitudes and behaviour, where the directly measured attitudes in Study 1 and the valence variable in Study 2 were more strongly predicted by the individual-level factors.

5 | GENERAL DISCUSSION

In three studies, we documented attitudes towards and use of the new Swedish pronoun hen, in its generic and specific meaning. First, we tested if attitudes towards hen, and spontaneous use of hen, differed depending on the meaning. Second, we tested if individual-level variables differently predicted the attitudes and use in the generic and specific meaning.

We found that even though attitudes towards and use of hen in both the generic and specific meaning are to some extent related, they are also different. When directly asked about attitudes towards hen, the difference between attitudes towards the generic and specific meaning of hen were fairly equal. However, when these attitudes were measured indirectly, the attitudes towards the specific meaning of hen were more negative compared to the generic meaning of hen.

Results from Study 2, where participants rated sentences with pronouns in the specific and generic meaning, indicated that resistance towards hen mainly was affectional – negative valence was higher for sentences with hen compared to sentences with binary pronouns, but especially for sentences with the specific meaning of hen. Yet, grammaticality and especially reading difficulty revealed that hen is both perceived as grammatically correct and not that hard to read, which aligns with eye-tracking studies showing that hen had a negligible processing cost (Vergoossen et al., 2020b). Grammaticality and reading difficulty tap into the cognitive aspects of attitudes, while negative valence is related to affect. Hence, when directly asked about their attitude, people may base their response on affect.

Pronouns belong to the category of closed words, which derive their meaning from context (Chung & Pennebaker, 2016; Newman, 1997). Because of this, pronouns are often claimed to be difficult to change. The present study shows that hen seems to have changed the Swedish language, in terms of both attitudes and use, at least for the generic form. Since our present research shows that the most-used generic Swedish pronoun is hen, we feel safe to say that Swedish now in practice contains three parallel pronouns that are known to and used by the average Swedish speaker.

5.1 | The specific non-binary meaning of hen

The specific meaning of hen seems to face more difficulties than the generic meaning, in terms of both attitudes and use. Similar results have been found for singular they in English, which was preferred over binary pronoun pairs in generic contexts, but disliked in specific contexts (Hekanaho, 2020). However, singular they has historically been used as a generic pronoun, and the preference of they in generic contexts may simply be a consequence of that, rather than a dislike of non-binarity. Still, given the overlap with the results of the present article, it seems unlikely that the historical remnants are solely responsible for this difference in preferences across contexts. Both our findings and those using they as target (Bradley, 2020; Bradley et al., 2019; Hekanaho, 2020) imply that the specific use of a pronoun with multiple meanings, which is related to the understanding of the referent as non-binary, is what individuals resist. This could indicate a certain form of transphobia. Following this, previous research shows that individuals highly invested in their binary gender identity have stronger beliefs about gender as binary, are prejudiced against non-binary individuals and display negative attitudes towards the pronoun hen (Morgenroth et al., 2020).

When evaluating sentences with different meanings of hen, sentences with the specific meaning were seen as less grammatically correct, more difficult to read and elicited more negative valence compared to sentences with hen in the generic meaning, although the low values on these scales indicated that hen might not be particularly problematic. Even for the specific meaning of hen, the grammaticality ratings were just above the midpoint of the scale, while both reading difficulty and the negative valence were generally low. These results align with British findings on similar pronouns (Bradley, 2020; Bradley et al., 2019; Hekanaho, 2020).

5.2 | Beliefs about gender as binary and linguistic motives

In line with the types of convictions that the different meanings of hen challenge, the predictors for attitudes towards and use of the generic and specific meaning of hen differed. Even though traditionalism and beliefs about gender as a binary category were correlated, they predicted attitudes to and use of hen in the generic and specific meaning differently. Traditionalism was in general a better predictor for attitudes towards the generic meaning, whereas beliefs about gender as a binary category were a better predictor for attitudes towards the specific meaning. We argue that the specific meaning of hen challenges binary gender ideological convictions, while the generic meaning of hen mainly challenges traditional views, including a preference for the linguistic status quo. These results were clearest for directly measured attitudes. For behaviour, beliefs about gender as binary was the strongest predictor for using hen, regardless of meaning. Thus, the most important impediment to hen's adoption by Swedish language users seems to be beliefs about gender as a binary category, implying that societal views of gender must change. Hen could be one way to achieve this, since hen has the potential to challenge the common notion of gender as a binary category (Lindqvist et al., 2021). In comparison to when generic he was replaced with the paired pronoun he/she, the implementation of non-binary pronouns has larger consequences on individuals' worldview, as gender-inclusive pronouns add a gender category to what many people for a long time have thought of as a binary, which affect attitudes to LGBTQI+ individuals (Tavitz & Perez, 2019).

The patterns for the individual predictors were not entirely clear, however, and not consistent throughout the studies. It is possible that participants have difficulty in separating their attitudes towards the different meanings. For instance, the fact that hen has multiple meanings is something they might not have reflected on previously. Another factor that may contribute to variations across the studies is to what extent the measures are related to language. In Study 1, both the outcome measures (attitudes to generic/specific hen) and the predictors (cisgenderism and linguistic status quo) were related to language and to hen. In Study 2, however, we measured attitudes to hen indirectly and the predictors (beliefs about gender as binary and traditionalism) were unrelated to language. This may have accounted for the weaker effects found in Study 2. It is also possible that this change in variables shows a truer picture of how the predictors are related to the outcomes. In Study 2, it was clearer that beliefs about gender were less related to outcomes concerning the linguistic status quo, such as grammaticality and reading difficulty. When it comes to negative valence as an outcome variable, the pattern of the predictors is more in line with Study 1, that is, both traditionalism and belief about gender as binary predicted negative valence, but as in Study 1, they did so to different degrees. Finally, Study 3 highlights the importance of further exploring spontaneous use of gender-fair language, and what predictors may be of relevance, as the results from Study 3 differed from Studies 1 and 2.

Important to note is that while traditionalism and beliefs about gender as binary could be seen as separate constructs, they are also closely related. Traditionalism implies a preference for stability and resistance against change, which also implies that individuals high in traditionalism may oppose a more fluid and diverse view of gender that departs from the traditional binary view.

5.3 | Limitations and future directions

In the present studies, we used both direct and indirect measures. In Study 1, we directly asked participants about their attitudes towards the pronoun hen in the two different meanings, using single-items.

Even though the statistical difference was significant between the attitudes to the different meanings, it was so small that it is practically unimportant. People were, in general, indifferent or somewhat negative towards hen, regardless of meaning. Also, Study 2 mainly used single-items as outcomes, which should be rectified in future research.

In this article, we defined the specific meaning of hen as referring to a named individual. It could be discussed how the specific meaning should be operationalised. For instance, a referent may be specific (definite) without being named—it is also possible to use a role noun (e.g., the receptionist). Previous research on singular they has, for example, used formulations such as: 'when the student gets here, give them this package' (Bradley, 2020, p. 101272). However, this sentence could also be interpreted as referring to a non-specific (non-definite) referent—any student that comes, despite that the article indicates a definite referent (i.e., 'the student' instead of 'a student'). Therefore, a personal name is more likely to force the interpretation of a specified person (Conrod, 2019). This was also suggested by Hekanaho (2020). Still, this is an empirical question for future research.

So far, gender-fair language planning has been described with two strategies, neutralisation and feminisation (Sczesny et al., 2016). In this way, the labels used for gender-fair language planning have not yet included non-binary gender. Thus, the taxonomy on gender-fair language could be further developed. However, as there are no such taxonomies for the moment, the current study on the Swedish pronoun hen adds to the knowledge on how non-binary pronouns are implemented and understood, which could be useful also in other languages. As gender-inclusive pronouns are implemented in other languages too (e.g., in English), future meta-analyses of non-binary pronouns can address mechanisms that describe how potential differences between languages occur. For example, whether the pronouns are new, with multiple meanings or not, and whether they are implemented in parallel with other local changes (e.g., legislation on discrimination, etc.).

5.4 | Implications

Gender-fair language aims at identifying inclusive language, free from gender biases. Gender-fair language strategies often imply a certain use, such as using the paired pronouns he/she instead of generic he. The use of these strategies has major consequences for how people interpret the language. However, the strategies must of course be implemented. In other words, to *know* that he/she is perceived as more inclusive compared to generic he is not enough. When this knowledge is gained, the next step is to change the language use. This is language planning: the conscious effort to change the language. Here, attitudes to the suggested strategies are important. If people dislike a certain gender-fair language strategy, the chances that they will use this word are small.

We found that hen in the generic meaning has been more successfully implemented with more positive attitudes and more frequent use than the specific meaning. However, as hen is inclusive beyond the binary due to its multiple meanings, it may still have positive consequences for people with non-binary identities. For example, when hen is used in the generic meaning, non-binary individuals should also feel included. In relation, gender minority participants in one study experienced lower identity threat when reading an equal opportunity employment statement even when that statement did not specify gender identities (e.g., 'all genders'), while the use of binary gender increased identity threat (Lindqvist et al., 2021). This is something to examine further, and whether non-binary pronouns have any consequences for transgender people with binary identities (i.e., transwomen and transmen).

The fact that the generic meaning of hen was preferred over the specific meaning could be because the generic meaning is the most common (Gustafsson Sendén et al., 2021; Ledin & Lyngfelt, 2013), and because the generic meaning was more strongly promoted when hen was introduced (Milles, 2013). Thus, the mere exposure effect (Moreland & Topolinski, 2010) could have accounted for the results for both attitudes and use. As beliefs about gender as binary seemed to be the strongest predictor of attitudes and use in all three studies, there is a need for educating the public on the misunderstanding of gender being a binary category, in terms of biology, expressions and identity (Hyde et al., 2019; Lindqvist et al., 2020). Our results also indicate that the non-binary meaning of hen, which was the main focus of the public debate at an early stage (Ledin & Lyngfelt, 2013), still seems to be highly relevant today.

The introduction of hen was a consequence of both societal top-down and bottom-up processes, where the use was advocated both by feminists and by politicians, as well as by individuals on a grassroot level, who were not linguistically represented by the binary pronouns he/she (i. e., non-binary individuals). In relation to this, including one's preferred pronoun in presentations (e.g., e-mail signatures, name labels), even though the pronoun might be a binary (i.e., she or he), could normalise such a procedure and indirectly increase the salience of non-binary identities.

Because language matters for how individuals form concepts and perceive reality (Bieswanger et al., 2010; Fiedler, 2008; Lindqvist et al., 2018; Slobin, 1996), it is important to follow how the implementation of a gender-inclusive pronoun in a language develops over time. The present study provides insight into how hen is perceived and used at present time. It is highly valuable to follow up on these results since they imply that hen may take on a generic form, and the consequence for the non-binary use is unknown. How hen will be used in future may affect whether the traditional concepts of gender as binary will remain or not.

6 | CONCLUSIONS

The present studies documented the attitudes towards and use of the new Swedish third-person singular gender-inclusive pronoun hen, which has been added to the binary pronouns she and he. Hen can be used both generically and specifically, referring to either anyone or no one particular, or to someone with a non-binary gender identity. Our results show that people were more positive to the generic meaning of

hen, compared to the specific, non-binary meaning, and hen was actually the most frequently used pronoun in a generic context. However, as hen in the generic meaning is also inclusive beyond the gender binary, a generic use of hen may still have positive consequences for individuals with non-binary identities.

CONFLICT OF INTEREST

The authors report no conflicts of interest.

ETHICS APPROVAL

The present research conforms to the national and international ethical standards. In line with the Swedish law on research ethics as issued by the Swedish Ethical Review Authority, the present research is accepted. Each participant has left informed consent prior to participation.

DATA AVAILABILITY STATEMENT

Data are available via the Open Science Framework: https://doi.org/10.17605/OSF.IO/6AMDN.

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How to cite this article: Renström, E. A., Lindqvist, A., & Sendén, M. G. (2022). The multiple meanings of the gender-inclusive pronoun hen: Predicting attitudes and use. *European Journal of Social Psychology*, 1–20. https://doi.org/10.1002/ejsp.2816

APPENDIX

Study Material and Additional Results

Study material Study 2

Each sentence was built on two blocks: a noun or a name, and a sentence referring back to the noun with a pronoun. The nouns were balanced in terms of gendered and gender-balanced professions (as

tested in Gustafsson Sendén et al., 2019). The professions are listed in Table A3.

The second part of the sentence referred back to the noun or name with a pronoun. The sentences we used are shown in Table A4.

Examples of full sentences:

If a journalist has worked overtime, hen should be compensated.

If a journalist has worked overtime, he/she should be compensated.

Emma likes the outdoors, hen often hikes in the woods.

Emma likes the outdoors, she often hikes in the woods.

Study material Study 3

The set-up of Study 3 was like Study 2 in that we used similar sentences, but we removed the pronoun and let the participant fill in the missing word. We also added more gender-neutral names and removed the gendered names. This removal was based on the assumption that we did not think any participants would write another pronoun than the one traditionally associated with a traditionally feminine or masculine name. We also reduced the number of professions. The names and professions in Study 3 are shown in Table A6. Finally, we included some filler items. There were more names than role nouns since the role nouns chosen have already been tested for perceived gender balance (see Gustafsson Sendén et al., 2019), while the names have not.

The second part of the sentence referred back to the noun/name. We used the same sentences as in Study 2, which are shown in Table A4. The exception was that the pronoun was removed and a blank space was included.

Example of full sentences:

Cris took a nap, ___ was very tired.

Em called their cat since ___ had not seen it all day.

If a receptionist is sick should____ not go to work.

When a pilot comes to work should ___ register.

Filler sentences:

All participants were exposed to all of the following six filler sentences.

The dog was hungry, ____ate the food quickly.

If a cat purrs, ____ is happy.

The tree grew fast, ___ became tall.

Some were still outdoors, ___ it started to rain.

This year winter came early, it was snowing already ___ October.

One cup was ___ and another was green.

Additional analyses

TABLE A1 Comparison of sample representativeness and population parameters for all studies, reported in percentages

Age		Study 1	Study 2	Study 3	Population
	18–25	9	8	12	12
	26–35	17	18	18	17
	36–45	17	18	13	16
	46–55	17	20	20	17
	56–65	14	14	14	14
	66+	26	23	23	24
Gender					
	Woman	51	51	55	50
	Man	49	49	45	50
Geography					
	Mid North	4	4	4	4
	North Mid	8	7	7	8
	East Mid	16	18	17	17
	North North	5	4	4	5
	Småland and Isles	8	8	6	8
	Stockholm	23	26	25	23
	South	15	14	15	15
	West	20	20	22	20

Note: population figures are based on Swedish official statistics 2017.

TABLE A2 Items and Cronbach's α for the scales cisgenderism and preference for the linguistic status quo. Study 1, $N = 2112$

Scale	Item	Cronbach's α
Cisgenderism	• Hen has no function, there are only two sexes[a]	
	• Biologically are we either man or woman – therefore, there is no need for a gender-neutral pronoun	
	• Since one's sex is an important part of one's identity is there only a need for 'he' and 'she'	0.93
Linguistic status quo	• There are other neutral words, hen is not needed	
	• I am unused to using the word and it feels awkward to say	
	• It is not correct Swedish to use the word hen	0.83

[a] The term sex is used here because the argument is related to an idea of biological separation between the two sexes. In Swedish, the term for gender is in fact the same as the term for sex.

TABLE A3 Professions and names used in the stimulus material, Study 2

	Nouns	Names
Women-dominated/ feminine		
	Kindergarten teacher	Emma
	Receptionist	Anna
	Care assistant	Sofia
	Midwife	Marie
Men-dominated/ masculine		
	Car mechanic	Klas
	Construction worker	Niklas
	Pilot	Bengt
	Computer scientist	Fredrik
Gender-balanced/ gender-neutral		
	Train attendant	Pim
	Journalist	Lex
	Sales person	Lo
	Real Estate agent	Rio

TABLE A4 Generic and specific sentences used in Study 2

Generic sentences	Specific sentences
Have a problem, [hen, he/she] should go to their boss	Likes to have coffee, [hen/he/she] often buys buns
Works hard, [hen, he/she] should be promoted	Took a nap, [hen/he/she] was very tired
Gets hurt, [hen, he/she] should get help	Read the text several times, [hen/he/she] thought it was difficult to understand
Comes to work, [hen, he/she] should register that	Was happy, [hen/he/she] smiled wide
Is tired, [hen, he/she] should take a break	Was invited for dinner, [hen/he/she] but could not come
Is late, [hen, he/she] colleagues get problems	Liked to go swimming and [hen/he/she] often went to the beach
Discover problems in the work environment, [hen, he/she] should report this	Cut themself on the knife, [hen/he/she] was bleeding heavily
Discover that the equipment does not work, [hen, he/she] should report this	Raked all the leaves in the garden since [hen/he/she] wanted it to look pretty
Is sick, should [hen, he/she] not go to work	Likes the outdoors, [hen/he/she] often hikes in the woods
Is not careful, there may be substantial consequences for[hen, he/she]	Called their cat since [hen/he/she] had not seen it all day
Has worked overtime, [hen, he/she] should be compensated	Jumped out of fear since [hen/he/she] thought there was a snake on the road
Registers for the first time, [hen, he/she] should bring ID	Had worked abroad for many years and now [hen/he/she] wanted to move back home

TABLE A5 Correlations between all variables in Study 2. $N = 297$

	Grammaticality				Reading difficulty				Negative valence							
	Generic hen	Specific hen	Generic binary	Specific binary	Generic hen	Specific hen	Generic binary	Specific binary	Generic hen	Specific hen	Generic binary	Specific binary	Age	Gender	Gender identity	Beliefs about gender as binary
Grammaticality																
Generic hen																
Specific hen	0.44***															
Generic binary	0.46***	0.26***														
Specific binary	0.43***	0.30***	0.50***													
Reading difficulty																
Generic hen	−0.43***	−0.13*	−0.17**	−0.12*												
Specific hen	−0.26***	−0.20**	−0.16**	−0.06	0.76***											
Generic binary	−0.13*	−0.10	−0.44***	−0.16**	0.35***	0.38***										
Specific binary	−0.34***	−0.17**	−0.40***	−0.41***	0.53***	0.49***	0.56***									
Negative valence																
Generic hen	−0.40***	−0.20***	−0.07	−0.07	0.60***	0.47***	0.13**	0.31***								
Specific hen	−0.19**	−0.39***	−0.03	0.01	0.42***	0.46***	0.17**	0.24***	0.75***							
Generic binary	−0.06	−0.06	−0.46***	−0.19**	0.27***	0.30***	0.73***	0.45***	0.12*	0.19**						
Specific binary	−0.29***	−0.20**	−0.36***	−0.52***	0.36***	0.37***	0.46***	0.68***	0.40***	0.38***	0.51***					
Age	−0.10	−0.24***	0.05	−0.08	−0.00	0.01	−0.14*	−0.02	0.08	0.05	0.20**	−0.02				
Gender	−0.08	−0.11	0.10	0.05	0.06	0.04	0.04	0.10	0.16**	0.12*	−0.12	0.01	0.03			
Gender identity	0.07	−0.03	0.05	−0.18*	−0.18**	−0.10	0.06	−0.08	0.04	0.09	0.04	0.01	0.12*	0.07		
Beliefs about gender as binary	−0.24***	−0.23***	0.02	0.05	0.23***	0.17**	−0.05	0.10	0.47***	0.44***	−0.20**	0.07	0.15**	0.31***	0.17**	
Traditionalism	−0.29***	−0.14*	−0.02	−0.05	0.28***	0.14*	−0.01	0.17**	0.46***	0.36***	−0.12	0.13*	0.26***	0.18**	0.07	0.56***

TABLE A6 Means and standard deviations and *t*-values comparing ratings of grammaticality, reading difficulty and negative valence between sentences with generic and specific use of binary pronouns, Study 2. *N* = 297

Grammaticality			Reading difficulty			Negative Valence		
Generic	Specific	*t*	Generic	Specific	*t*	Generic	Specific	*t*
5,96 (1,31)	5,71 (1,73)	3,18**	1,84 (1,19)	1,76 (1,07)	1,30	2,06 (1,27)	1,99 (1,13)	1,10

Note: $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

TABLE A7 Nouns and names used in Study 3

Nouns	Names
Sales person	Kim
Train attendant	Robin
Pilot	Alex
Journalist	Lex
	Em
	Cris
	Lo
	Pim
	Rio

TABLE A8 Means and standard errors for the main effects, Study 2, *N* = 297

	Grammaticality	Difficulty	Negative valence
Hen	4.94 (0.09)	2.05 (0.07)	3.26 (0.11)
Binary	5.74 (0.08)	1.93 (0.06)	2.01 (0.06)
Generic	5.84 (0.07)	1.18 (0.06)	2.46 (0.07)
Specific	4.85 (0.10)	2.19 (0.08)	2.80 (0.08)

TABLE A9 Means and standard deviations for each dependent variable, Study 2, *N* = 297

	Grammaticality	Difficulty	Negative valence
Generic hen	5.52 (1.17)	2.03 (1.41)	2.91 (1.88)
Generic binary	5.96 (1.31)	1.84 (1.19)	2.07 (1.28)
Specific hen	4.18 (2.18)	2.34 (1.63)	3.65 (2.27)
Specific binary	5.71 (1.43)	1.76 (1.07)	1.99 (1.14)

TABLE A10 Frequencies of use for specific and generic pronouns, split on hen and binary pronouns. Study 3, *N* = 450

	Specific		Generic	
Times used	Hen	Binary	Hen	Binary
0	68	19	40	74
1	14	18	13	10
2	10	29	15	8
3	9	34	32	8

TABLE A11 Breakdown of the total number of binary pronouns responses in generic and specific sentences. Paired indicates the paired pronouns 'he/she' (han/hon) or 'he or she' (han eller hon) as a response. The hen responses are included as a reference. All responses were in Swedish

Response	Generic	Specific
Paired	46	28
He	124	553
She	55	217
Total	225	798
Hen	626	268