

Breaking the Binary

Attitudes towards and cognitive effects of gender-neutral pronouns

Hellen P. Vergoossen



Breaking the Binary

Attitudes towards and cognitive effects of gender-neutral pronouns

Hellen P. Vergoossen

Academic dissertation for the Degree of Doctor of Philosophy in Psychology at Stockholm University to be publicly defended on Friday 8 October 2021 at 10.00 in Hörsal 5, Albanovägen 14 and online via Zoom, public link is available at the department website.

Abstract

For a long time, Swedish only had two third-person singular pronouns: *hon* ['she'] and *han* ['he']. Following several publications using the gender-neutral pronoun *hen* to refer to its characters, a debate article in a national newspaper proposed expanding the Swedish pronouns with *hen*. This proposal ignited a nation-wide debate on the use of a gender-neutral pronoun and its potential consequences. Proponents of *hen* believed that *hen* would make the language more gender-fair by making gender less salient, and by having a pronoun for nonbinary gender individuals. Opponents believed *hen* would confuse children and be trivial for achieving gender equality. This response shows that *hen* challenges beliefs on what language should look like, how gender is defined, and how gender should be represented in language. In this thesis, I have documented beliefs about *hen*. I have mapped the initial resistance, and found underlying motivations for different types of criticism. In two experimental studies, I tested whether common arguments in the debate are supported by empirical evidence, and whether *hen* can affect the way others are perceived.

Study I documented the content of the criticism of *hen*. As a background and coding scheme I used research on criticism of past gender-fair language initiatives, such as the replacing of generic 'he' with 'he or she'. I found that the criticism of *hen* was largely the same as in the 1970s and 1980s. Subsequently, I generated four dimensions of underlying motivations that characterize criticism of gender-fair language. These dimensions of criticisms can be considered and addressed in different ways when implementing and researching gender-fair language.

Study II tested whether *hen* indeed is more distracting in written communication than *hon* or *han*. Participants read sentences in which *hen* referred to role nouns that varied in how strongly they were associated with a gender. The results indicated that *hen* had a small processing cost compared to *hon* or *han*, and there was no difference between lexically gendered or stereotypically gendered role nouns. The common argument that *hen* is a strong distractor in written communication was thus not supported by these findings.

Study III examined how pronouns influence gender categorization and the memory recall of a face. The results indicated that participants were more likely to categorize a gender-ambiguous face as a woman when presented with a feminine pronoun, and that they spent more time looking at feminine faces than masculine faces in the memory task. The opposite was found when the gender-ambiguous face was presented with a masculine pronoun. Encoding a gender-ambiguous face with *hen* partially eliminated the gender categorization effect. The results show that binary pronouns activate binary gender categorization and that gender-neutral pronouns can reduce such categorization.

The findings in this thesis provide insights into the early stages of the implementation of a gender-neutral pronoun, and its potential to affect social cognition. It shows that criticism of *hen* is fueled by a set of ideological convictions and practical concerns, which it shares with criticism of other gender-fair language initiatives. In addition, *hen* leads to criticism of breaking the woman-man gender binary. This thesis provides early evidence for the potential of gender-neutral language, such as *hen*, to reduce biases in social cognition.

Keywords: *gender-fair language, gender-neutral pronouns, hen.*

Stockholm 2021

<http://urn.kb.se/resolve?urn=urn:nbn:se:su:diva-195457>

ISBN 978-91-7911-584-5
ISBN 978-91-7911-585-2

Department of Psychology

Stockholm University, 106 91 Stockholm



Stockholm
University

BREAKING THE BINARY

Hellen P. Vergoossen



Breaking the Binary

Attitudes towards and cognitive effects of gender-neutral pronouns

Hellen P. Vergoossen

©Hellen P. Vergoossen, Stockholm University 2021

ISBN print 978-91-7911-584-5

ISBN PDF 978-91-7911-585-2

Cover illustration “Break the Binary”

© Jack Dylan, www.meow-house.com

Printed in Sweden by Universitetsservice US-AB, Stockholm 2021

Distributor: Department of Psychology, Stockholm University

*Es ein zilv'rig lintje is de Maas
Door berg en bos omzuimp
Wo elke zuderling dae in
De vraemde is van druimp
Want valt 't laeve soms neet mit
En zeukste nao get gelok
Blief aeve in gedachte staon
En dink aan Limburg trok*

Abstract

For a long time, Swedish only had two third-person singular pronouns: *hon* ['she'] and *han* ['he']. Following the publication of a children's book and a novel using the gender-neutral pronoun *hen* to refer to its characters, a debate article in a national newspaper proposed expanding the Swedish pronouns with *hen*. These publications ignited a nation-wide debate on the use of a gender-neutral pronoun and its potential consequences. Proponents of *hen* believed that *hen* would make the language more gender-fair by making gender less salient, and by having a pronoun for nonbinary gender individuals. Opponents believed *hen* would confuse children and be trivial for achieving gender equality. This response shows that *hen* challenges beliefs on what language should look like, how gender is defined, and how gender should be represented in language. In this thesis, I have documented beliefs about *hen*. I have mapped the initial resistance, and found underlying motivations for different types of criticism. In two experimental studies, I tested whether common arguments in the debate are supported by empirical evidence, and whether *hen* can affect the way others are perceived.

Study I documented the content of the criticism of *hen*. As a background and coding scheme I used research on criticism of past gender-fair language initiatives, such as the replacing of generic 'he' with 'he or she'. I found that the criticism of *hen* was largely the same as in the 1970s and 1980s, such as gender-fair language being a trivial concern without any real contribution to gender equality. Subsequently, I generated four dimensions of underlying motivations that characterize criticism of gender-fair language. These were (a) defending the linguistic status quo, (b) sexism and cisgenderism, (c) diminishing the issue and its proponents, and (d) gender-fair language being a distractor in communication. These dimensions of criticisms can be considered and addressed in different ways when implementing and researching gender-fair language.

Study II tested whether *hen* indeed is distracting in written communication. Participants read sentences in which *hen* referred to role nouns that varied in how strongly they were associated with a gender. The role nouns were lexically gendered role nouns (e.g., mother, queen), stereotypically gendered role nouns (e.g., hairdresser, carpenter), and neutral role nouns (e.g., sibling, colleague). By analyzing the eye movements of participants who read these sentences, I tested whether *hen* is more taxing to read in comparison to binary pronouns.

The results indicated that *hen* had a small processing cost compared to binary pronouns, but there was no difference between lexically gendered or stereotypically gendered role nouns. The common argument that *hen* is a strong distractor in written communication was thus not supported by these findings.

Study III examined the process of gender categorization in social cognition. Gender is a primary category in person perception, and gender is determined in milliseconds. Gender categorization influences how a person is perceived and remembered. In a memory task, I tested how pronouns influence gender categorization and the memory recall of a face. The results indicated that participants were more likely to categorize a gender-ambiguous face as a woman when presented with a feminine pronoun, and that they spent more time looking at feminine faces than masculine faces in the memory task. The opposite was found when the gender-ambiguous face was presented with a masculine pronoun. Encoding a gender-ambiguous face with *hen* partially eliminated the gender categorization effect. The results show that binary pronouns activate binary gender categorization and that gender-neutral pronouns can reduce such categorization.

Nearly ten years after *hen* first entered the public limelight, *hen* appears to have established itself in Swedish. The findings in this thesis provide insights into the early stages of the implementation of a gender-neutral pronoun, and its potential to affect social cognition. It shows that criticism of *hen* is fueled by a set of ideological convictions and practical concerns, which it shares with criticism of other gender-fair language initiatives. In addition, *hen* leads to criticism of breaking the woman-man gender binary. Challenging the linguistic binary shows the potential to reduce societal biases reflected by language. This thesis provides early evidence for the potential of gender-neutral language, such as *hen*, to reduce biases in social cognition.

Keywords: *hen*, gender-fair language, gender-neutral pronouns

Svensk sammanfattning

Under lång tid hade svenska språket endast två singular tredje-persons pronomen: *hon* och *han*. Efter publiceringen av en barnbok och en roman där *hen* användes för att hänvisa till dess karaktärer föreslog en debattartikel i en nationell tidning att svenska pronomen skulle utvidgas med det könsneutrala pronomenet *hen*. Dessa publikationer tände en rikstäckande debatt om användningen av ett könsneutralt pronomen och dess potentiella konsekvenser. Förespråkarna ansåg att *hen* skulle göra språket mer könsrättvist genom att göra kön mindre framträdande och genom att ha ett pronomen som inkluderar icke-binära individer. Motståndarna menade att *hen* skulle förvirra barn om deras könsidentitet och inte bidra till jämställdhet. Denna reaktion visar att *hen* utmanar ideér om hur språket ska se ut, hur kön definieras, och hur kön ska representeras i språket. I denna avhandling dokumenterar jag olika uppfattningar om *hen*. Jag har kartlagt det initiala motståndet, och hittat olika motiv för olika typer av kritik. I två experimentella studier har jag testat om de vanliga argumenten i debatten stöds av empiriska bevis, och om *hen* kan påverka hur andra uppfattas.

Studie I dokumenterade innehållet i kritiken av *hen*. Som bakgrund och kodningsschema använde jag tidigare forskning om kritik mot könsrättvist språk, såsom att ersätta generiskt *han* med *han eller hon*. Kritiken mot *hen* var i stort sett densamma som vid tidigare språkreformer, som att könsrättvist språk är ett trivialt problem som inte nämnvärt bidrar till jämställdhet. I studien genererades fyra olika teman som illustrerar underliggande motivationer i kritiken mot könsrättvist språk. Dessa var (a) försvar av ett lingvistisk status quo, (b) sexism och cisgenderism, (c) förminskade av frågan och dess företrädare och (d) *hen* är distraherande i kommunikation. Dessa dimensioner av kritik kan övervägas och hanteras på olika sätt när könsrättvist språk implementeras och beforskas.

Studie II testade om *hen* verkligen är distraherande i skriven kommunikation. Deltagarna läste meningar där *hen* hänvisade till ord som varierade i hur starkt de var associerade med kön. Orden var lexikalt könade (t.ex. mor, drottning), stereotypiskt associerad med kön (t.ex. frisör, snickare), och könsneutrala (t.ex., författare, kollega). Genom att analysera ögonrörelser hos deltagare testade jag om *hen* är mer belastande att läsa jämfört med *hon* och *han* (sk. binära pronomen).

Resultaten visade att *hen* hade en liten bearbetningskostnad jämfört med binära pronomen, men att denna kostnad inte skilde sig åt beroende på typen

av könsinformation som fanns i ordet. Det vanliga argumentet att *hen* är distraherande i skriven kommunikation stöds således inte av dessa fynd.

Studie III undersökte processen för könskategorisering inom social kognition. Kön är en primär kategori i personuppfattning, och människor bestämmer någons kön inom millisekunder. Könskategorisering påverkar hur en person uppfattas och blir ihågkommen. I en minnesuppgift testade jag hur pronomen påverkar könskategorisering och minne av ett ansikte. Resultaten indikerade att deltagarna var mer benägna att kategorisera ett ansikte som var tvetydigt när det gällde kön som en kvinna när de presenterades med ett feminint pronomen, och att de ägnade mer tid åt att titta på feminina ansikten än maskulina ansikten i minnesuppgiften. Motsatsen hittades när ansiktet presenterades med ett maskulint pronomen. Inkodningen av ansiktet tillsammans med *hen* eliminerade delvis könskategoriseringseffekten. Resultaten visar att binära pronomen aktiverar binär könskategorisering och att könsneutrala pronomen kan minska betydelsen av binärt kön i social kognition.

Nästan tio år efter *hen* först fick offentlig uppmärksamhet verkar ordet ha etablerat sig i svenskan. Fynden i denna avhandling ger insikter i de tidiga stadierna av implementeringen av ett könsneutralt pronomen och dess potential att påverka social kognition. Avhandlingen visar att kritik mot *hen* drivs av ideologiska övertygelser och praktiska bekymmer, som den delar med kritik mot andra könsrättvisa språkinitiativ. Att utmana binärt språk visar potentialen att minska samhällsfördomar som reflekteras av språket. Denna avhandling ger bevis för påverkan av könsneutralt språk, till exempel *hen*, på social kognition.

Nederlandse abstract

Het Zweeds kende lange tijd slechts twee voornaamwoorden in het enkelvoud in de eerste persoon: *hon* ['zij'] en *han* ['hij']. Na de publicatie van een kinderboek en een roman waarin het genderneutrale voornaamwoord *hen* werd gebruikt om naar de personages te verwijzen, stelde een opiniestuk in een nationale krant voor om de Zweedse voornaamwoorden uit te breiden met *hen*. Dit leidde tot een landelijk debat over het gebruik van een genderneutraal voornaamwoord, evenals over de mogelijke gevolgen ervan. Voorstanders van het gebruik van het woord *hen* geloofden dat *hen* de taal meer *gender-fair* ('gender-eerlijk') zou maken door geslacht minder prominent te maken en door een voornaamwoord te hebben voor niet-binaire individuen. Tegenstanders geloofden dat *hen* kinderen zou verwarren over hun eigen genderidentiteit, en verwaarloosbaar zou bijdragen aan gendergelijkheid. Deze reactie laat zien dat *hen* opvattingen raakt over hoe taal eruit zou moeten zien, hoe gender wordt gedefinieerd, en hoe geslacht in taal moet worden vertegenwoordigd. In dit proefschrift heb ik deze opvattingen over *hen* onderzocht. Ik heb de verschillende argumenten die in het aanvankelijke verweer tegen *hen* werden gebruikt en onderliggende motivaties hiervoor in kaart gebracht. In twee experimentele studies heb ik getest of veel voorkomende ideeën in het debat gesteund worden door empirisch bewijs, en of *hen* de potentie heeft percepties van anderen te beïnvloeden.

Studie I documenteerde de inhoud van de kritiek op *hen*. Als basis voor het codeerschema gebruikte ik onderzoek naar kritiek op eerdere gender-faire taalinitiatieven, zoals het vervangen van het generieke gebruik van 'hij' door 'hij of zij'. Ik ontdekte dat de kritiek op *hen* grotendeels hetzelfde was als de kritiek op andere taalhervormingen in de jaren '70 en '80, zoals dat gender-faire taal triviaal is, zonder enige echte bijdrage aan gendergelijkheid. Sommige punten van kritiek waren specifiek gericht op het woord *hen*, namelijk dat genderneutrale voornaamwoorden de communicatie afleiden. Alle argumenten werden binnen een kader van vier dimensies van onderliggende motivaties om kritisch te zijn over gender-fair taalgebruik geplaatst; (a) het verdedigen van de taalkundige status-quo, (b) seksisme en cisgenderisme, (c) het belachelijk maken van voorstanders en het bagatelliseren van mogelijke positieve effecten, en (d) de afleidende werking in communicatie.

Studie II testte of *hen* inderdaad afleidt in schriftelijke communicatie. Deelnemers lazen zinnen met woorden die varieerden in hoe sterk ze

geassocieerd zijn met een geslacht. Dit waren lexicaal gegenderde voornaamwoorden (bijv. moeder, koningin), stereotiep gegenderde voornaamwoorden (bijv. kapper, timmerman) en neutrale voornaamwoorden (bijv. auteur, collega). Door de oogbewegingen van deelnemers te analyseren, heb ik getest of *hen* belastender is om te lezen dan binaire voornaamwoorden zoals *zij* of *hij*.

De resultaten gaven aan dat *hen* een kleine verwerkingslast teweegbracht in vergelijking met binaire voornaamwoorden, maar dat deze niet verschilt met lexicaal gegenderde of stereotiep gegenderde zelfstandige naamwoorden. Het veelgebruikte argument dat *hen* het lezen stoort wordt dus niet gesteund door deze bevindingen.

Studie III onderzocht het proces van geslachtscategorisering in sociale cognitie. Geslacht is een primaire categorie in de perceptie van anderen, en wordt bepaald in milliseconden. Het geslacht waartoe iemand wordt gecategoriseerd beïnvloedt hoe een persoon wordt waargenomen en herinnerd. In een gezichtsherkenningsexperiment heb ik getest hoe voornaamwoorden de categorisatie en de herinnering van een gezicht beïnvloeden. De resultaten lieten zien dat deelnemers vaker het neutrale gezicht als een vrouw categoriseerden wanneer het gepresenteerd werd met een vrouwelijk voornaamwoord, en dat ze meer tijd besteedden aan het kijken naar vrouwelijke gezichten dan mannelijke gezichten in het experiment. Het tegenovergestelde werd gevonden toen het gezicht werd gepresenteerd met een mannelijk voornaamwoord. Wanneer het gezicht met *hen* gepresenteerd werd, werd het effect van de geslachtscategorisatie gedeeltelijk uitgeschakeld. De resultaten laten zien dat binaire voornaamwoorden (mannelijk/vrouwelijk) binaire gendercategorieën activeren en dat genderneutrale voornaamwoorden dergelijke categorisatie kunnen verminderen.

Bijna tien jaar nadat *hen* voor het eerst in de schijnwerpers kwam te staan, lijkt het zich in het Zweeds te hebben gevestigd. De bevindingen in dit proefschrift geven inzicht in de vroege stadia van de implementatie van een genderneutraal voornaamwoord, en het potentieel om sociale cognitie te beïnvloeden. Het laat zien dat kritiek op *hen* gevoed wordt door ideologische overtuigingen en praktische zorgen die het deelt met andere gender-faire taalinitiatieven. *Hen* leidt tot kritiek op het doorbreken van de genderbinaire vrouw-man. Het uitdagen van de linguïstische genderbinaire toont het potentieel om maatschappelijke vooroordelen die door taal worden weerspiegeld te verminderen. Dit proefschrift toont bewijs voor het potentieel van gender-neutraal taalgebruik, zoals *hen*, om vooroordelen in sociale cognitie te verminderen.

List of studies

The present doctoral thesis is based on the following studies:

- I. **Vergoossen, H. P.**, Renström, E. A., Lindqvist, A., & Gustafsson Sendén, M. (2020). Four dimensions of criticism against gender-fair language. *Sex Roles*, 1-10. doi:10.1007/s11199-019-01108-x *
- II. **Vergoossen, H. P.**, Pärnamets, P., Renström, E. A., & Gustafsson Sendén, M. (2020). Are new gender-neutral pronouns difficult to process in reading? The case of *hen* in Swedish. *Frontiers in Psychology*, 11, 574356. doi: 10.3389/fpsyg.2020.574356 **
- III. **Vergoossen, H. P.**, Sczesny, S., Lindqvist, E. A., Renström, & Gustafsson Sendén, M. (2021). Do you recognize hon, han and hen? How binary and gender-neutral pronouns affect gender categorization in face recognition. *Manuscript*.

* Paper I is reprinted with permission from Sex Roles © 2021 Springer Nature.

** Paper II is reprinted with permission from Frontiers in Psychology © 2021 Frontiers Journals.

Contents

Abstract.....	iii
Svensk sammanfattning	v
Nederlandse abstract.....	vii
List of studies	ix
Abbreviations	xiii
Introduction	15
Language, gender and psychology.....	17
Language and gender.....	17
Grammatical gender	18
Lexical gender	21
Androcentrism in language.....	22
Gender-fair language planning strategies	25
Feminization strategies.....	26
Neutralization strategies.....	27
Gender-neutral pronouns	28
Inclusive language	29
The introduction of <i>hen</i> in Swedish	32
History, attitudes and use.....	32
Criticism of <i>hen</i>	34
The psychological effects of pronouns	36
Processing gendered pronouns.....	36
Processing gender-neutral pronouns	38
Pronouns and gender categorization	40
General aims.....	43
Summaries of the empirical studies	45
Study I Four dimensions of criticism against gender-fair language	45
Aim	45
Background.....	45
Method	46

Results	47
Discussion and conclusions	48
Study II Are new gender-neutral pronouns difficult to process in reading?	
The case of <i>hen</i> in Swedish	51
Aim	51
Background	51
Method	52
Results	54
Discussion and conclusion	56
Study III Do you recognize <i>hon</i> , <i>han</i> and <i>hen</i> ? How binary and gender-generic pronouns affect gender categorization in face recognition	57
Aims	57
Background	57
Method	58
Results and discussion	59
Discussion and conclusion	62
General discussion	64
Resistance against gender-fair language reforms is largely uniform	64
Resistance against gender-fair language is motivated by gender beliefs	65
<i>Hen</i> does not appear to be difficult to process	66
<i>Hen</i> reduces binary categorization	67
Limitations and future directions	68
Individual differences in the processing of <i>hen</i>	68
The complexities of face categorization	69
Methodological considerations	69
The multiple uses of <i>hen</i>	69
Operationalizing gender-neutrality, nonbinarity and androgyny	70
Conclusion	73
Acknowledgements	75
References	78

Abbreviations

ANOVA	Analysis of variance
BF	Bayes Factor
CI	Confidence Intervals
CrI	Credibility Intervals
GFL	Gender-fair Language
LGBTQI+	Lesbian, Gay, Bisexual, Transgender, Queer/Questioning communities, Intersex. Also used for transsexual, 2/two-spirit, asexual, pansexual, agender, gender queer, gender variant, and pan-gender communities

Introduction

The gender-neutral pronoun *hen* first came into the public limelight in Sweden in 2012. Over the span of a few months, a children's book (Lundqvist & Johansson, 2012), a novel (Kraft, 2012) and an issue of a magazine (Nöjesguiden, 2012) were published using *hen* instead of the traditional pronouns *hon* ['she'] and *han* ['he']. These publications were accompanied by a newspaper article titled 'The Swedish language needs a new word' (Milles et al., 2012). In this article, *hen* was proposed as an alternative to the paired pronoun form 'he or she', and as a pronoun for nonbinary individuals. *Hen* was immediately met with strong opposition (Wojahn, 2015). Many were skeptical of a gender-neutral pronoun, concerned about its implications, and even passionately critical (Gustafsson Sendén, Bäck, & Lindqvist, 2015; Milles, 2013). In a discussion platform hosted by a Swedish newspaper for proponents and opponents of *hen* (Claeson & Salemark, 2012), Claeson commented:

Nobody wants to forbid *hen*. But I don't think it will be used very often. Humans want to sort the world in she and he – it is natural and self-evident. Our brain works that way.

This shows that at the time, *hen* was not just seen as a solution to a linguistic gap in the Swedish language. *Hen* touched upon beliefs on what language should look like, how gender is defined, and how gender should be represented in language. In the 1970s, there was a similar strong resistance against another pronoun reform. 'He' had been used as a generic pronoun referring to people of any gender, and activists lobbied for the replacement of generic 'he' with 'he or she', to promote egalitarianism through language (Sczesny, Moser, & Wood, 2015). Masculine words were (and are) commonly used in a generic way, such as referring to individuals of any gender as 'he' in legislative statutes. While generically intended, such words had been found to lead to biases. Generic 'he', which is meant to refer to anyone, leads to people thinking of men more often than women (Moulton et al., 1978).

Hen differs from previous initiatives in an important way. *Hen* is gender-neutral, in that it removes gendered information from language, where previous initiatives mainly focused on feminizing language to make women visible in language (e.g. by using 'businesswoman' alongside the generic 'businessman'; Blaubergs, 1980; Parks & Robertson, 1998). *Hen* can be used in a generic way to refer to people of any gender. *Hen* can also be used as a pronoun for

individuals with nonbinary gender identities, which ‘he or she’ often cannot¹ (Ansara & Hegarty, 2016; Hyde, Bigler, Joel, & van Anders, 2019). In this way, *hen* challenges the notion of gender being a binary of women and men, a representation of gender that has been criticized (Morgenroth & Ryan, 2020). This may be reflected in people’s attitudes towards *hen*, as well as in social cognitive processes such as gender categorization.

This thesis investigates what arguments are most common in criticism of *hen*, and compares this criticism with criticism of other gender-fair language initiatives that have focused on the femininization of language. In addition, it distinguishes motivations for being critical of gender-fair language initiatives. Furthermore, this thesis investigates the effect of *hen* on social cognition by testing two of the beliefs commonly held about *hen*, namely that *hen* is difficult to process, and that *hen* affects the way we perceive others. The studies included in this thesis provide insights in the potential of gender-neutral language in reducing the prominence of gender categorization in social perception. Altogether, this thesis gives an important insight into the effects of “breaking” the (gender) binary in language on attitudes and cognitive processes.

¹ Although it is important to note that not all individuals who identify as nonbinary choose nonbinary pronouns for themselves (Hekanaho, 2020).

Language, gender and psychology

There is a myth that the Inuit have a hundred words for snow. While this is not true (e.g., Martin, 1986), there is evidence that language characteristics affect perceptions of the world. While the extent of this relation is debated, there is evidence that conceptual representations of time (Boroditsky, Fuhrman, & McCormick, 2011), space (Majid, Bowerman, Kita, Haun, & Levinson, 2004), color (Regier & Kay, 2009; Winawer, Witthoft, Frank, Wu, Wade, & Boroditsky, 2007), number (Frank, Everett, Fedorenko, & Gibson, 2008) and odor (Majid, Burenhult, Stensmyr, De Valk, & Hansson, 2018) are affected by one's language (Mazzuca, Majid, Lugli, Nicoletti, & Borghi, 2020). For example, Russian speakers are better at distinguishing lighter blues from darker blues than English speakers, because the Russian language makes an obligatory distinction between the two shades, where English does not (Winawer et al., 2007). In a similar way, language affects how we think about gender.

Language and gender

Gender is an important social category (Stangor, Lynch, Duan, & Glass, 1992), and language reflects this (Stahlberg, Braun, Irmen, & Sczesny, 2007). Most languages contain words signaling gender; words like 'she', 'he', 'grandmother', 'uncle', and 'actress'. There are also formal and informal rules on how language should be used in relation to people of different genders (Gygax et al., 2019). In this way, language guides the structuring and clustering of our social world into groups that are perceived as sharing certain characteristics (Macrae & Bodenhausen, 2000).

Stereotypes refer to the combination of beliefs, expectancies about behaviors, features and traits that together form a cognitive representation of a social category such as gender (Dovidio, Hewstone, Glick, & Esses, 2010). Language plays an important role in the formation and maintenance of gender stereotypes. For example, people of different genders may be described in different ways. Studies found that newborn girls are more likely described as pretty and delicate, while young boys are described as big and strong (Karraker, Vogel, & Lake, 1995; Stern & Karraker, 1989). Men have been found to be described with words signaling agency more than women (Eagly, 1987; Formanowicz, Roessel, Suitner, & Maass, 2017), and women are more

likely than men to be described with derogatory terms when they are sexually promiscuous, as reflected by the many words for promiscuous women in many languages (Ruscher, 2017). Such descriptions may activate cognitions related to the social category in the person hearing this description, and also in the speaker (Higgins & Rholes, 1978; Marsh, 2007; Thompson, Judd, & Park, 2000), which further cements stereotypical ideas about gender categories (Beukeboom & Burgers, 2019).

Encountering words related to gender affects the processing of social information. Priming studies, where participants are exposed to a word prime before another task, show that certain characteristics of language makes gender more salient, which in turn affects the further processing of linguistic information (e.g., Bates, Devescovi, Hernandez, & Pizzamiglio, 1996; Lemm, Dabady, & Banaji, 2005). Gendered characteristics of language, such as the words that are used to label genders, similarly affect the processing of social information. Gender in language can be present in formal features of language, such as its grammatical gender and its lexicon, as well as in customs of how language is used to talk about gender (Garnham, Oakhill, von Stockhausen, & Sczesny, 2016). Together, these characteristics provide a conceptualization of gender and gender categories, which affects perceptions of others (Bigler & Leaper, 2015).

Grammatical gender

Languages differ in the amount of gender information that is present in their grammatical rules (Corbett, 2013a, 2013b; Prewitt-Freilino, Caswell, & Laakso, 2012; Siewierska, 2013). Scholars have categorized languages in roughly three categories of gender systems²: grammatical gender languages, natural gender languages³, and genderless languages (Prewitt-Freilino et al., 2012; Stahlberg et al., 2007). What gender category a language belongs to depends on the frequency with which genders are distinguished in the language. In genderless languages (e.g., Finnish, Mandarin Chinese and Vietnamese; for an overview of the language gender categories, see Table 1), gender is rarely marked; there are no gendered pronouns, and occupational titles are gendered less often than in natural gender languages (Gygax, Elmiger, Zufferey, Garnham, Sczesny, von Stockhausen, Braun, & Oakhill, 2019). In natural gender languages, there are gendered pronouns, but nouns are not conjugated with feminine or masculine gender (e.g., English, Somali and Swedish). In grammatical gender languages, there are gendered pronouns, and nouns are assigned a gender (e.g., Arabic, German and Zulu).

² For a more refined categorization, see Gygax, Elmiger, Zufferey, Garnham, Sczesny, von Stockhausen, Braun, & Oakhill (2019).

³ Also called notional gender languages (Hekanaho, 2020; McConnell-Ginet, 2014).

Gendered pronouns are an important way of marking gender in a language (Lenton, Sedikides, & Bruder, 2009). Pronouns are function words, which make up a small part of the vocabulary, but a large part of everyday language (Rochon, Saffran, Berndt, & Schwartz, 2000). Third-person pronouns are an efficient alternative to the repetition of names and noun phrases when referring to others (Arnold, 2010). In natural gender languages, gender distinctions on nouns have largely been lost, but distinctive feminine and masculine third-person singular pronouns remain ('she' and 'he'; Corbett, 1991). An example of this is Swedish, where gender distinctions in occupational role titles have decreased since the 1960s (Hornscheidt, 2003). To neutralize words with the masculine suffix *-men*, words have been compounded with words like *person* ['person']. Words like *ledamot* ['member'], e.g., *riksdagsledamot* ['member of parliament'] have been suggested as an alternative to words like *riksdagsman* ['man of parliament']. A similar trend of reducing gendered distinctions in role titles has been documented for Netherlands Dutch, while in Flemish Dutch, these distinctions are still of obligatory nature (Gerritsen, 2002). However, in both Netherlands Dutch and Swedish, singular third person pronouns remain: *zij* and *hij* [Dutch, 'she' and 'he'] and *hon* and *han* [Swedish, 'she' and 'he'].

Table 1. *An overview of the gender language categories based on Gygax et al., (2019), Prewitt-Freilino et al. (2012), and Stahlberg et al. (2007).*

	Gendered pronouns	Gendered role nouns	Morphological gender	Example languages
Genderless languages	No	Uncommon	Uncommon	Estonian, Finnish, Mandarin Chinese, Vietnamese
Natural gender languages	Yes	Uncommon	Uncommon	English, Somali, Swedish
Grammatical gender languages	Yes	Common	Common	Arabic, German, Polish, Zulu

In grammatical gender languages, the gender of nouns is most commonly feminine or masculine. When speaking a grammatical gender language, each object is marked with gender through articles and pronouns, and adjectives and verbs are often modified to agree with the gender of the nouns (Stahlberg et al., 2007). The gender of objects is not universal across languages (Corbett, 2013a). In the Indo-European language category, which contains most of the languages spoken in Europe, very few nouns belong to the same grammatical

gender across all languages, with for example rivers being masculine in Latin, and feminine in Greek (Fodor, 1959).

Even though most inanimate objects lack a clear association with femininity and masculinity, grammatical gender can affect perceptions of objects. Speakers of a grammatical language using gendered articles, such as *el* (masculine) and *la* (feminine) in Spanish, have been found to be aware of objects' grammatical gender (Boutonnet, Athanasopoulos, & Thierry, 2012), which can lead to differing perceptions of objects as feminine or masculine (Haertlé, 2017). For example, a study found that more stereotypically feminine adjectives were chosen to describe a moon in a language where moon is a feminine word (French) than in a language where moon is a masculine word (Polish; Haertlé, 2020). The relation between a word's grammatical gender and associated masculinity and femininity is particularly strong in languages with only two gender categories (Sera et al., 2002). In Russian, where weekdays have grammatical gender, participants associated "feminine gender" days with feminine voices and "masculine gender" days with masculine voices (Jakobson, 1966). When a language contains more gender information, more attention is paid to gendered information. Speakers of a natural gender language (English) were quicker at responding to questions about gendered information in the stimuli material than speakers of a genderless language (Chinese; Chen & Su, 2011).

Studies have also documented associations between the gender system of the language and the level of gender equality in the country (e.g., DeFranza, Mishra, & Mishra., 2020; Liu, Shair-Rosenfield, Vance, & Csata, 2018; Prewitt-Freilino et al., 2012). Grammatical gender in language was found to be a better predictor of gender wage inequality in a country than other cultural gender dimensions such as the GLOBE⁴ gender egalitarianism dimensions (House, Hanges, Javidan, & Dorfman, 2004; Santacreu-Vasut, Shoham, & Gay, 2013, Santacreu-Vasut, Shenkar, & Shoham, 2014; Shoham & Lee, 2018). Reading a text in a grammatical gender language (German or French) was found to temporarily increase sexist attitudes in comparison to reading it in a natural gender language (English; Wasserman & Weseley, 2009). Women in a heterosexual relationship speaking a language containing more gender markings were found to do more household chores than women speaking a language containing fewer gender markings (Hicks, Santacreu-Vasut, & Shoham, 2015).

This is not to say that the level of gender equality in individual countries is caused by the genderedness of their language. Hungary for example, is a country in which a genderless language is spoken, but which is ranked low in terms of gender equality in UN's Human Development Report (United Nations, 2020). However, language reflects the shared beliefs and attitudes on gender in a society (Fiedler, 2008). In addition, the more salient gendered information

⁴ Globe Leadership & Organizational Behavior Effectiveness (*GLOBE 2020, 2021*)

is in a language, the more frequently language users attend to gender information, which in turn affects perceptions of the self and the social surroundings (Gygax et al., 2021).

Lexical gender

Another source of gendered information are the words a language consists of, or its lexicon (Gygax, Sato, Öttl, & Gabriel, 2021). Each language's lexicon contains words that are used to categorize people into social groups (Stahlberg et al., 2007). In many languages, these words, or group labels, include gender information. Words like 'sister', 'father' and 'queen' provide information on someone's societal or relational role, and also provide information about their gender. The gender information is part of the word's definition, and restricts the ways in which it can be used. For example, everyone is someone's child, but only women can be someone's daughter.

The categorization of people into groups is a central process for human beings (Allport, 1954; Fiske & Taylor, 2008; Mackie, Hamilton, Susskind, & Roselli, 1996). Instead of thinking of individuals as social units with a unique set of characteristics, humans construe them based on social categories, such as gender (Macrae & Bodenhausen, 2000; Macrae & Quadflieg, 2010). This helps form impressions quickly and effortlessly by using past experiences (Stahlberg et al., 2007). Language is the tool to create and maintain those social categories. Gordon Allport described this as "nouns that cut slices" (Allport, 1954). Words like 'scientists', 'cat lovers', 'women' and 'men' cut our communities into "slices", or subgroups. Once a group is linguistically labeled, it becomes cognitively distinguishable from other groups (McGarty, Haslam, Hutchinson, & Grace, 1995). Learning that a person belongs to the group *women* means that information about what women are thought to have in common—looks, interests, behavior—can be attributed to this person quickly (Dijksterhuis & Van Knippenberg, 1996). Even when this information is not very accurate for this particular individual, typically it is an efficient way of creating an image of what someone is like.

In many languages, gender is part of the definition of relational words like 'sister' and 'nephew', and in occupational titles. These words are considered to contain *lexical gender information*⁵. Although uncommon in natural gender languages, an example of this in English is *actor* and *actress*. Such paired forms are more common in grammatical gender languages. In genderless and natural gender languages, masculine occupational titles (e.g., *businessman*) are often used generically to refer to people of any gender. Such masculine

⁵ Also called semantic gender (e.g., Asarina, 2009), definitional gender (e.g., Kreiner, Sturt, & Garrod, 2008) and notational gender.

generics have been suggested to be used to refer to people of any gender. The use of masculine forms as generic forms can lead to linguistic androcentrism.

Androcentrism in language

In many languages, there is a preference for using masculine forms over feminine forms. Historically, men have dominated several spheres of society, such as governments and the work force. Language has reflected this, with occupational titles like ‘businessman’ long missing a feminine counterpart (Gygax et al., 2019). In the 18th century, linguistic institutes even recommended using masculine forms instead of neutral forms to accurately reflect male dominance in society, to the detriment of women and people with other gender identities (Bem, 1993; Darr, Kibbey, Huth, 2016; Silveira, 1980). While governments and the work force in many countries no longer exclusively consist of men, many of the male-centered linguistic structures remain. Women could be as visible as men in language, by consistently referring to women with feminine linguistic forms. However, in many languages, women are still referred to with masculine forms, which are the standard (Stahlberg et al., 2007).

The preference for using masculine forms of words is an example of androcentrism (Bodine, 1975). In many languages, masculine pronouns have been used generically to refer to individuals of any gender. For example, in Swedish law, masculine pronouns are used to refer to individuals:

If a shareholder sues for damages on behalf of the company, a settlement may not be reached without his consent (Swedish Code of Statutes, 1975:1385)⁶

Empirical research has established that even when generically intended, ‘he’ evokes a stronger association with men than with women (Gastil, 1990; Liddicoat, 2011a; Miller & James, 2009; Moulton et al., 1978; Ng, 1990). The association between masculine generics and men has been found in many languages, such as English, German, French and Dutch (e.g., Braun et al., 2005; Redl, Eerland, & Sanders, 2018; Redl, Frank, de Swart, & de Hoop, 2021) and in children as young as age 3 (Gygax, Schoenhals, Lévy, Luethold, & Gabriel, 2019). The association was also found for other words containing lexical gender, such as ‘man’ and ‘chairman’ (Banaji & Hardin, 1996; McConnell & Fazio, 1996; Moulton, Robinson, & Elias, 1978).

In the Swedish language (a natural gender language), nouns with lexical gender are mostly limited to kinship terms, such as *syster* [sister] and *bror* [brother]. There are some unsymmetrical pairs, where *vän* [‘friend’] can refer

⁶ Own translation from Swedish. See also Lundbäck (2009) on the use of generic pronouns in Swedish legal authority text.

to friends of any gender, while *vännina* [‘friend’, feminine] can only refer to female friends. This shows that in the Swedish language, many ‘neutral’ words have roots in originally masculine forms (Hornscheidt, 2003). Nouns ending in the feminine suffix *-inna* (e.g., *vännina*) och *-ska* (e.g., *sjuksköterska* [‘nurse’]) are uncommon. Similar to English, the suffix *-man* is used in occupational titles, although infrequently and in decreasing amounts (Edlund, 2004). Examples of such forms are *tjänsteman* [‘official’, generic masculine] and the well-known Swedish word *ombudsman* [‘ombudsman’]. The word *riksdagsman* [‘member of Parliament’, masculine] has steadily lost ground to *riksdagsledamot* [‘member of Parliament’, neutral] since the 1960s (Milles, 2017).

In grammatical gender languages, like French and German, gendering nouns is the norm. In a study investigating the effect of masculine generics in German on the mental representation of gender, asking participants who their favorite *Politiker* [‘politician’, masculine] is, led to the mentioning of more male exemplars than female exemplars (Stahlberg & Sczesny, 2001) compared to when paired forms (e.g., *Politiker/Politikerinnen* [‘politicians’, masculine/‘politicians’, feminine]) were used. This male bias in masculine generics has been found repeatedly across different grammatical gender languages (Gabriel, Gygax, Sarrasin, Garnham, & Oakhill, 2008; Gygax, Gabriel, Sarrasin, Oakhill, & Garnham, 2008).

Paired forms like *Politiker/Politikerinnen* increase the representation of women, but still suffer from an androcentric bias because the masculine form typically comes first. The order of presentation matters, because those mentioned first are assigned more importance and attention by readers (Gabriel et al., 2008; Kesebir, 2017). The androcentric bias is also reflected by ‘he or she’ is much more common than ‘she or he’ (Willis & Jozkowski, 2017), and the man is more commonly mentioned before the woman in heterosexual couples (e.g., ‘Mike and Rachel’; Hegarty, Watson, Fletcher, & McQueen, 2011). Even in scientific articles men are mentioned first when gender differences are presented (Hegarty & Buechel, 2006). An exception to this are comparisons about parenthood, a domain that is typically seen as more closely related to women than to men (Hegarty & Buechel, 2006).

Masculine generics also lead to feelings of ostracism (de Lemus & Estevan-Reina, 2021; Stout & Dasgupta, 2011). Generic ‘he’ makes people feel excluded (Hekanaho, 2020). Women were less likely to apply for a job or judge a profession as suitable for themselves when masculine generics or masculine wording was used in the job advertisement (Bem & Bem, 1973; Briere & Lanktree, 1983; Gaucher, Friesen, & Kay, 2011). However, using feminine titles in a language where a masculine generic form exists, leads to other social costs. Women’s job applications were judged as less suitable for a high-status leadership position when the job was titled with a masculine form compared to when it was titled with a paired form (Horvath & Sczesny, 2015). Women

described with feminine job titles (e.g., *la presidentessa*, ‘the president’, feminine) instead of equivalent masculine job titles (e.g., *la presidente*) were rated as less warm and competent, which led to a lower willingness to employ them (Budziszewska, Hansen, & Bilewicz, 2014). In a mock court situation, participants were less likely to accept the woman defendant’s behavior as self-defense when the text describing the definition of self-defense used generic masculine terms (Hamilton, Hunter, & Stuart-Smith, 1992).

Taken together, language is the basis for how people are grouped in society and the way these groups are mentally represented. Characteristics of a language, such as the genderedness of its grammatical and lexical content, make its users more sensitive to gendered information (Gygax et al., 2019). In addition, language reflects societal biases such as androcentrism (Krauss et al., 2010). Masculine forms of words are currently used with a generic intention, but fail to function as such because they are associated with men more than women. The generic use of masculine forms negatively affects women’s sense of belonging in traditionally male-dominated parts of society, and the way they are judged by others. However, language can also be used as a tool to reduce gender equality in society.

Gender-fair language planning strategies

Language changes constantly. The way words are pronounced, the way words are written, and what words are part of a language's dictionary changes over time. New words are invented regularly, like in the case of the Swedish pronoun *hen*. These changes show that language users are not just passive recipients of language, but active participants in a dynamic communicative system (Bybee, 2015). Some language changes are intentionally made by language institutes and language activists. Such changes are called *language planning*. Language planning is the act of developing linguistic alternatives to replace language that reinforces prejudiced values (Doğançay-Aktuna, 1997; Liddicoat, 2011). For decades, there have been initiatives to break the cycle of language reproducing stereotypes this way (Sczesny et al., 2016). Many countries, such as the member states of the European Union, have pledged themselves to an equal treatment of women and men (European Commission, 2007) and employ language as a tool to contribute to this. For example, UNESCO states in their document on gender equality guidelines:

[L]anguage does not merely reflect the way we think: it also shapes our thinking. If words and expressions that imply that women are inferior to men are constantly used, that assumption of inferiority tends to become part of our mindset; hence the need to adjust our language when our ideas evolve (p. 4, UNESCO, 2011).

Depending on the type of gender in a language, the way to make a language more gender-fair may differ (Sczesny et al., 2015; Stahlberg et al., 2007). Two strategies are common to remedy androcentrism in language; making women more visible in language by adding feminine forms (*feminization*), or deemphasizing gender by removing gendered, predominantly masculine, forms (*neutralization*; Sczesny, Formanowicz, & Moser, 2016). In addition, there has been an increased attention and call for gender-fair language strategies to not just make women more visible in language, but also to include gender identities beyond the woman-man binary in language (Ansara & Hegarty, 2016).

Feminization strategies

Historically, masculine terms have been privileged over feminine terms (Pauwels, 1998). The feminization of language involves the creation of a parallel feminine form for previously existing masculine forms. The strategy of feminizing language is thought to be most suitable for languages with grammatical gender, where words frequently include gendered information (Gabriel, Gygax, & Kuhn, 2018). In these languages, masculine forms are often used generically. By adding a feminine form to existing masculine forms (e.g., Dutch *lerares en leraar* ['teacher', feminine and 'teacher', masculine]), women are made more visible in the language (Sczesny et al., 2016). When referring to women and men in general, paired forms can be composed in several ways; both forms can be mentioned in full (e.g., German *Elektrikerinnen und Elektriker* ['electricians', feminine and 'electricians', masculine]) or abbreviated (e.g., German *StudentInnen* '[female and male] students'; Polish *nauczyciel/ka* '[female and male] teachers').

The feminization of language is effective in increasing associations with women. In several studies, participants were more likely to think of women when a paired form was used than when a masculine generic was used (e.g., Gabriel & Gygax, 2008). For example, German-speaking participants remembered more female public figures when paired forms were used (e.g., *Studentinnen und Studenten*; '[female and male] students', or *StudentInnen*) compared to when the neutral or masculine form was used (Stahlberg & Sczesny, 2001). Furthermore, paired forms (e.g., *Geschäftsführerin/Geschäftsführer*, '[female/male] CEO') led to women being perceived as a better fit for a high-status leadership position than when the masculine job title was used generically (Horvath & Sczesny, 2015). Another study found that paired forms in French led to the attenuation of the difference in ascription of success and warmth to women and men compared to masculine generic forms (Vervecken et al., 2015).

However, the feminization strategy also has side effects. Feminine forms are often derived from the masculine form, reinforcing the masculine form as the standard (Prewitt-Freilino et al., 2012). Using feminine forms can also lead to less favorable judgments of the person they refer to. In a study in Polish, applicants given a fictional feminine occupational title were evaluated less favorable than when they were presented with a fictional masculine occupational title (Formanowicz, Bedynska, Cislak, Braun, & Sczesny, 2013). The same was found in Italian for traditionally feminized forms (e.g. *avvocatessa*, ['lawyer', feminine]), though more modernly feminized forms (e.g. *avvocata*) was given similar social status to the generic masculine form *avvocato* (Merkel, Maass, & Frommelt, 2012). In a study investigating judgments of women using feminine and masculine occupational titles, using feminine occupational titles was found to lead to a decreased estimated salary (Horvath,

Merkel, Maass, & Sczesny, 2016). In addition, feminine forms may not have the same meaning as the masculine form. For example, in Polish, the feminine *sekretarka* ('[female] secretary') represents the role of a personal assistant, while the masculine *sekretarz* refers to a high governmental function (Sczesny et al., 2016).

Neutralization strategies

Another gender-fair language strategy is to circumvent or substitute gendered words with neutral words (Blaubeergs, 1978). Circumvention can be achieved through circumlocutions (e.g., *mail carrier* instead of *mailman*), indefinites (e.g., *someone to repair the...* instead of *repairman*), or through plural forms that do not signal gender (e.g., '*De mensen en hun kinderen*' ['Humans and their children', Dutch] instead of '*De mens en zijn kinderen*' ['Humankind and his children']; p. 12, Gerritsen, 2002). Gender-marked words such as *chairman* and *poetess* can also be avoided altogether by using neutral words instead (Hellinger, 2001). The neutralization of language could be especially suitable for languages with natural gender such as English and Swedish, where most personal nouns are neutral and gender asymmetries are mostly reflected by masculine generics (e.g., the typical student... *he*; Gabriel et al., 2018; Sczesny et al., 2016). Neutralization strategies can also be combined with feminization strategies. For example, in Spanish, a grammatical gender language, non-sexist language guidelines have suggested both feminizing job titles (e.g., *abogados-as* ['lawyers', masculine/feminine]) and using gender-neutral terms such as *persona* ['person'] (Bengoechea, 2011).

Few studies have documented the effect of gender-neutral language on the cognitive accessibility of exemplars (Bojarska, 2011). One study compared man-suffix nouns such as 'chairman' with neutral alternatives, such as 'chair' or 'chairperson', and found that 'chairman' led to participants' perception of the target as having a more masculine personality compared than when the neutral alternatives were used (McConnell & Fazio, 1996). Another study found that participants associated 'man'-suffix nouns more strongly with men, and that encountering a feminine pronoun referring to such a word (e.g. "the chairman familiarized herself with...") led to a greater reading effort than when encountering a feminine pronoun referring to a neutral alternative (e.g., "the chairperson familiarized herself with..."; Khan & Daneman, 2011). A third study compared the mental representations evoked by the masculine generic title 'master' and the gender-inclusive title 'head', inspired by Yale University's switch from 'master' to 'head' in 2016. Results showed that master led to a stronger association with and a better memory of male masters than female masters, while head did not lead to this bias (Bailey, Dovidio, & LaFrance, 2021).

These studies point towards a potential for gender-neutral alternatives to reduce a masculine bias in the cognitive accessibility of exemplars. However, these studies have only tested whether neutral words reduce the cognitive bias of evoking male exemplars over female exemplars, and not whether gender information becomes less salient altogether, which is what differentiates the neutralization strategies from the feminization strategies.

Gender-neutral pronouns

Natural and grammatical gender languages traditionally only contain gendered singular third-person pronouns. In some of these languages, there have been initiatives to introduce gender-neutral pronouns. Examples of this are singular *they* in English (Bradley, Salkind, et al., 2019), and *hen* and *hun* in Dutch (Redl, 2020). In the cases of *they*, *hen* and *hun*, existing neutral plural or possessive pronoun forms are used in their singular form as neutral generic pronouns. Other examples of gender-neutral pronouns are *iel* in French (Gygax, Gabriel, & Zufferey, 2019), *zie* and *hir* in English (Bradley, Salkind, Moore, & Teitsort, 2019), *elle* in Chilean Spanish, and *hen* in Swedish (Gustafsson Sendén et al., 2015). These pronouns are neologisms, or ‘neopronouns’ (Hekanaho, 2020). While language change happens continuously, changes in a grammatical class, such as pronouns, are less common. Typically, a change in this class happens gradually, and not all at once like in the case of new pronoun (Scott, 2011).

While intended to be free from gendered associations, some neutral pronouns do have a masculine bias. Research on the gender-neutral pronoun *hän* in Finnish (a language without grammatical gender) found that *hän* had a masculine bias⁷. When participants were asked to write a short essay on ‘hän’, they were more likely to write about men than women (Engelberg, 2011). The masculine bias of neutral words may be due to initially neutral words losing their neutrality under the dominant culture’s social values and attitudes (Ehrlich & King, 1992), or due to their original roots in masculine forms (Gabriel & Gygax, 2008).

There is evidence that new gender-neutral pronouns are free of this masculine bias. When gender-neutral pronouns are used generically, to refer to anyone, they evoke images of women and men evenly (Bradley et al., 2019; Lindqvist, Renström, & Gustafsson Sendén, 2019). In addition, gender-neutral pronouns can be used specifically, to refer to individuals with a nonbinary gender identity, a possibility that feminization strategies do not provide (Ansara & Hegarty, 2016). Gender-neutral language therefore also has the potential to be gender-inclusive.

⁷ However, as pointed out in Hekanaho (2020), *hän* is not known as a nonbinary pronoun, but as a nongendered pronoun and an epicene.

Inclusive language

Language planning in the previous decades has mostly focused on the visibility of women due to androcentric biases in language, and gender traditionally being viewed as a binary with the two alternatives of woman or man. This view of gender is called the gender/sex binary, with the combination of the words ‘gender’ and ‘sex’ stressing the entanglement of social and biological factors (Fausto-sterling, 2005; Morgenroth & Ryan, 2018). In recent years, the binary view of gender/sex has been challenged, and recognition for gender/sex not being binary has increased (Ansara & Hegarty, 2016; Hyde et al., 2019; Morgenroth, Gustafsson Sendén, Lindqvist, Renström, Ryan, & Morton, 2020; Morgenroth & Ryan, 2018; Tate, Youssef, & Bettergarcia, 2014). Approximately 0.3% to 2% of the UK and US population identifies beyond this binary (Boskey, 2014; Gates, 2011; Glen & Hurrell, 2012; Shields, Cohen, Glassman, Whitaker, Franks, & Bertolini, 2013; White, Moeller, Ivcevic, & Brackett, 2018). These individuals may experience not having a gender (e.g., agender, gender-neutral), their identity may include combinations of feminine and masculine components (e.g., mixed gender, androgynous), they may identify as a specific gender besides women or men (e.g., third gender, pangender), they may move between genders (e.g., gender fluid, bi/trigender), or their experience may disrupt the gender binary of women and men (e.g., genderqueer, genderfuck; Barker & Richards, 2015; Hegarty, Ansara, & Barker, 2018). These identities are often collected under the umbrella term ‘nonbinary gender identities’, and have in common that the person does not (only or constantly) identify with the sex/gender they were assigned at birth (Thorne, Yip, Bouman, Marshall, & Arcelus, 2019)⁸.

Public policies have reflected the increased recognition for identities beyond the binary. For example, Germany started recognizing a third sex in 2017 (Eddy & Bennett, 2017), Facebook introduced nonbinary gender options for their profile pages (Bivens, 2017), and institutes such as the American Psychological Association (APA) started urging its members to “[I]nform treatment, service provision, civil rights and approaches to promoting the well-being of transgender and gender variant people” (in Ansara & Hegarty, 2012, p. 137). Gender-fair language planning too, is increasingly focusing on making language inclusive to everyone, and not just to cisgender individuals. Activists have raised the concern that the binary pronouns *she* and *he* enforce a binary system constituting the categories woman (*she*) or man (*he*), excluding individuals with nonbinary identities. Pronouns signal an important aspect of

⁸ In this thesis, ‘trans’ is used as an umbrella term for gender identities that do not match or are limited to the gender/sex assigned at birth, ‘nonbinary’ as an umbrella term for gender identities beyond the woman-man gender binary, and ‘cis’ for gender identities that match the gender/sex assigned at birth (but see Darwin, 2020, for a warning against the borders of these categories being too rigid).

identity and are ‘identity-building tools’ (Brewer & Gardner, 1996; del Caño, 2019), and have therefore been an important part in making language more inclusive for nonbinary individuals (Miltersen, 2016). Like people with trans gender identities, people with nonbinary identities often experience misgendering, in that they are referred to with a gender that does not match their identity (Ansara & Hegarty, 2016)⁹. Individuals who prefer to use a gender-neutral pronoun for themselves often meet other people’s refusal to use such a pronoun (Johnson, LeBlanc, Deardorff, & Bockting, 2020). In a study investigating the importance of being represented in language (Andersson, 2020), Swedish participants with nonbinary gender identities described how important gender-neutral pronouns are to them:

It was part of the process to actually reevaluate my entire identity. It was a huge relief. Being able to use language and to have concepts that I felt described myself, that I feel I can fit into (p. 10, Andersson, 2020).¹⁰

When people use the correct pronoun, (...) I feel seen. (...) It feels more like I am being seen and confirmed. And that is meaningful, but it’s also... that’s how it should be. (...) I don’t get a strong euphoria – but I am seen (p. 11, Andersson, 2020).

It is a pronoun that is needed. You need a pronoun in the Swedish language to talk about people, and hen is a personal pronoun for me. (...) For me it’s like: he is a personal pronoun describing a man. She is a personal pronoun describing a woman. Hen is a personal pronoun that describes a human being (p. 12, Andersson, 2020).

Despite the increased recognition for the importance of representation in language for wellbeing and for combating stereotypes, ‘breaking’ this linguistic binary has been met with resistance (Milan, 2016). Psychological research has historically played an important role in documenting prejudice, its effects on the individual, and to improve acceptance of variations in human experiences (Hegarty, 2017). Hegarty commented on this:

When psychologists begin to conceptualize prejudices toward a particular social group, it is often a sign that attitudes in society and in the profession are changing, and that prejudice itself is on the wane (p. 8, 2017).

The experiences of individuals with nonbinary gender identities have only recently been documented in academic work (Davis, Zimman, & Raclaw, 2014). Documenting and understanding the resistance to nonbinary language is an

⁹ Consider, for example, how common it is in psychological science to only provide the alternatives ‘woman’ and ‘man’ in questionnaires (see Ansara, 2016; Lindqvist, Gustafsson Sendén, & Renström, 2020; Westbrook & Saperstein, 2015), and to investigate gender differences only between women and men (Lorber, 2006).

¹⁰ All quotes from Andersson (2020) are own translations from Swedish.

important step in improving the acceptance of trans individuals and the language that is inclusive to them, and contributing to the acceptance of trans identities in society as a whole.

The introduction of *hen* in Swedish

Hen first drew public attention in 2012, when it was used in the children's book *Kivi och Monsterhund* ('Kivi and Monster dog'; Lundqvist & Johansson, 2012) and the novel *Självpornografi* ('Selfpornography'; Kraft, 2012). In these publications, *hen* was used as a pronoun referring to fictional characters and people (Milles, 2013). *Nöjesguiden*, a magazine, replaced *hon* ['she'] and *han* ['he'] in one of their issues (2012). Around the same time, a newspaper article was published entitled 'The Swedish language needs a new word':

The words she and he carry an arsenal of notions of characteristics, and language and choice of words are of great importance for how we perceive the world. The word *hen* opens up for freer interpretations because it is not connected to these ideas (Milles, Salmson, & Tominic, 2012).

The medial attention for *hen* led to a big national debate. Proponents presented *hen* as a multifunctional pronoun that could be used specifically, for nonbinary individuals, and generically, when gender is not known, unimportant or needs anonymizing. The suggestion for this pronoun reform is driven by the belief that a gender-neutral pronoun can contribute to gender equality in society (Milles, 2013). It is believed that *hen* has the potential to reduce the reproduction of gender stereotypes through language, and to promote inclusivity for trans individuals.

History, attitudes and use

Hen is the most recent example of language planning in Swedish. During the last decades, there have been several initiatives promoting egalitarianism through the Swedish language. During the end of the 1960s and the beginning of the 1970s, the '*du-reform*' ['thou-reform'] took place, where the second-person singular pronoun *du* was promoted as the universal form of address instead of the more formal *ni* and titles such as *fru* ['Mrs.'] and *herr* ['Mr.']. (Fremer, 2018). In the early 2000s, the word *snippa* was proposed as a colloquial word for the vulva, for which the equivalent word for the penis already existed (*snopp*, Milles, 2006, 2011b). Existing words for vulva's were thought to be either too medical or too sexualized. *Snippa* is now commonly used. These examples of language planning reflect the societal circumstances in

Sweden at the time; a government that emphasized egalitarianism (Clyne, Norrby, & Warren, 2009), and both left- and right-wing governmental parties publicly identifying themselves as feminists (Öhberg & Wängnerud, 2014). Language planning in Sweden has thus been relatively successful (Milles, 2011a).

Hen was first conceived of by linguists in the 1950s and 1960s (e.g., Dunås, 1966), allegedly inspired by the Finnish gender-neutral pronoun *hän*. *Hen* was initially suggested as a compact alternative to the paired form *he or she*, and the masculine generic *he*. *Han eller hon* ['he or she'], or *den* ['it'] were used increasingly instead of the masculine generic *han*, but the generic use of *han* persisted (Grahn, 2006; Himanen, 1990; Landquist, 2001; Svenska Akademien, 2005). *Hen* did not gain traction until the early 2000s.

While the inventors of *hen* were originally concerned with the efficacy of the language, modern proponents were also concerned with its equity. LGBTQ+ communities used *hen* as a pronoun for individuals not identifying as women or men, and as a way to reduce the salience of gender (Grönblad, 2007; Milles, 2013). For example, *hen* was used in a national report on the well-being of bisexual, gay and trans youth in Sweden (Ambjörnsson, 2010). However, the use of *hen* did not extend far beyond these communities (Gustafsson Sendén et al., 2015). This is why *hen* was initially associated with the LGBTQ+ movement (Ledin & Lyngfelt, 2013). An internal statement from the editor of a national newspaper, *Dagens Nyheter*, telling employees in September 2012 to not use *hen* “because it can be perceived as taking a queer-political standpoint” (Thomsen, 2012), reflects this.

From the end of 2012 onwards, the use of *hen* started to increase and spread. It was used for the first time in a Court of Appeal (“*Hens uppgång har nått hovrätten* [The rise of hen has reached the Court of Appeal],” 2012), and despite the stance of *Dagens Nyheter*, use in newspapers increased (Milles, 2013). A study in 2013 found that *hen* was most commonly used when gender is not known, in anonymizing contexts, and as a generic pronoun, while using *hen* as a personal pronoun was relatively rare (Ledin & Lyngfelt, 2013).

In the following two years, the general population’s opinion of *hen* improved, and *hen* started being used more (Gustafsson Sendén et al., 2015). The use of *hen* increased in media, where national newspapers increased their use of *hen* greatly towards the end of 2012 (Ledin & Lyngfelt, 2013). In 2015, the continued use of *hen* led to it being added to the Swedish Academic dictionary (Svenska Akademien, 2015). Between 2015 and 2018, the use of *hen* further increased, and opinions improved (Gustafsson Sendén, Renström, & Lindqvist, 2021). *Hen* can now be found in a variety of places, such as instruction texts on the Swedish national tax authorities website and in descriptions on the national healthcare portal.

Criticism of *hen*

Around 2012, *hen* was discussed at length in national media and corresponding comment sections. Commentators called *hen* “ridiculous” and “unnecessary” (Thomsen, 2012). Around this time, attitudes towards *hen* were predominantly critical (Gustafsson Sendén et al., 2015). Opponents argued that *hen* would deprive children from gender information in language and confuse them about their own gender identities (Lagerwall, 2012). The Swedish Language Council (*Språkrådet*) was initially also apprehensive about *hen*:

Whether *hen* should be used or not should be decided with regard to the context. In itself, *hen* is a gender-neutral word which does not imply any linguistic barriers, but may sometimes annoy some language users (*Språkrådet*, 2013).

This reaction to *hen* was similar to the initial response to other gender-fair language initiatives. New words are typically initially regarded with apprehension, which decreases over time when the word grows more familiar (mere-exposure effect; Rindfleisch & Inman, 1998). For new forms of gender-fair language, there may be additional motivations for criticism. As suggested by Hekanaho (2020), some arguments may function as “an overt justification for a deeper discomfort with the ideological motivation behind nonsexist language reforms” (p. 69). Some research has found a relation between negative attitudes towards gender-fair language and negative attitudes towards women, and gender-specific system justification (Douglas & Sutton, 2014; Sarrasin, Gabriel, & Gygax, 2012). Political orientation, specifically right-wing conservatism, has also been related to negative attitudes towards gender-fair language (Formanowicz et al., 2013). Others have suggested that new words may get a negative response because people prefer the status quo and a preservation of traditional gender arrangements (Black & Stevenson, 1984; Gustafsson Sendén et al., 2015). In a survey study from 2016, Lindqvist and colleagues found that participants for whom being a woman or a man is an important part of their identity were more critical of *hen*, as well as participants with sexist attitudes (Bäck, Lindqvist, & Gustafsson Sendén, 2018; Lindqvist, Gustafsson Sendén, & Bäck, 2016). Younger participants, participants with an interest in gender issues, and participants critical of sexist language were found to have more positive attitudes towards *hen* (Gustafsson Sendén et al., 2021).

Hen differs from many other gender initiatives that focus on feminizing language, because it is gender-neutral and instead of adding feminine forms, removes gendered information from language, and is including towards non-binary gender identities. Opponents of *hen* have expressed the concern that *hen* was to replace gendered pronouns entirely. Therefore, some considered *hen* a threat to women and men’s gender identities, and expected it to affect social traditions such as courtship in heterosexual relationships (Lagerwall, 2012). When *hen* is used in its specific form to refer to individuals with a

nonbinary gender identity, criticism may be related to prejudice towards trans individuals, a prejudice that is well-documented in Sweden and beyond (Clements-Nolle, Marx, & Katz, 2008; Lombardi & Malouf, 2008; Tebbe, 2011; Winter et al., 2016; Zeluf et al., 2016).

Studying criticism of gender-fair language initiatives is an important part of understanding the process of integrating new language. In many languages, gender-neutral pronouns have had a limited success in spreading into more broad, public use (Darr et al., 2016). For other initiatives, of which *hen* is an example, attitudes have grown more positive over time. It is unclear why some initiatives are successful and others aren't, and what the most effective way is to promote gender-fair language (Bodenhausen & Gawronski, 2012; Koeser, Kuhn, & Sczesny, 2015). Documenting the integration of *hen* is therefore of interest for language planning and may provide insight in the early stages of language and ultimate success of gender-fair language planning.

The psychological effects of pronouns

A man and his son were away for a trip. They were driving along the highway when they had a terrible accident. The man was killed outright, but the son was alive, although badly injured. The son was rushed to the hospital and was to have an emergency operation. On entering the operating theatre, the surgeon looked at the boy, and said: "I can't do this operation. This boy is my son." How can this be? (p. 311, Sanford, 1985).

The above riddle is an often-used example on the power of stereotypes in comprehending language. Despite an influx of women in the occupation of surgeons since 1985 (e.g., Statistics Sweden, 2014), it may still take a moment to understand that the surgeon is the child's mother¹¹. Lexically and grammatically, the riddle includes no information that indicates the surgeon is a man, and it is generally known that not all surgeons are male. Then why does this riddle initially lead to a mental hiccup? The answer lies in the mental representations words evoke, and how they ultimately affect our perception of others.

Processing gendered pronouns

Understanding the riddle involves several mental processes. Amongst others, the lexical content of the word is accessed. For example, a surgeon is a medical practitioner qualified to practice surgery. Simultaneously, knowledge of what surgeons are typically like, how they look, and how they behave is accessed. A combination of these expectations form a stereotype of a surgeon (Graesser, Singer, & Trabasso, 1994; Stangor & Lange, 1994; van den Broek, Young, Tzeng, & Linderholm, 1999). Integrating stereotype information can lead to a better understanding of the intended meaning of a text beyond its syntactic and semantic content, but it also biases expectations (Bojarska, 2013). The stereotype of a surgeon may involve scrubs and scalpels, but also that they are typically men. In the case of the riddle, the stereotype of surgeons often being

¹¹ This is the classic solution to the riddle. An additional explanation is, of course, that the child has two fathers.

men leads to the initial conclusion that the surgeon is the boy's father, which conflicts with the information that the boy's father just died in a car accident¹². This shows that language can evoke stereotypes that affect further processing of social information (see Kollmayer, Pfaffel, Schober, & Brandt, 2018).

Social categories are central in social cognition (Fiske, 2004). Surgeons make up a rather small social category in societies, and humans are rarely divided into the groups 'surgeons' and 'non-surgeons'. The social category gender, however, is much more prominent in how we think of others (Stangor et al., 1992). We are usually acutely aware of someone else's gender (or at least our categorization of their gender), and it affects the expectations we have of them. Occupations and other social roles are often strongly associated with gender (Eagly & Steffen, 1984). In language, transgressing occupational gender stereotypes requires formal markers, for example, 'female surgeon' or 'male nurse' (Richards & Hewstone, 2001). Reading about a 'male surgeon' or a 'female nurse' is rare because, based on stereotypes, surgeons are assumed to be male, and nurses female (Beukeboom, Finkenauer, & Wigboldus, 2010; Hellinger, 2001).

The stereotypes evoked by language have been studied by observing how people read and process pronouns in reference to others in writing (e.g., names, occupational titles, role nouns; Garnham, Doehren, & Gygax, 2015). The process of understanding whom a pronoun refers to is called pronoun resolution (Reinhart, 1981). For example,

The pre-school teacher crossed the road carelessly. She did not look for upcoming cars.

In this sentence pair, 'pre-school teacher' does not provide any lexical gender information, so stereotypes are used as a source of gender information for the mental representation of the situation. As the stereotype of pre-school teachers is that they typically are women, the pronoun *she* is congruent with the stereotype of a pre-school teacher, and the mental representation of the situation is quickly created (McKoon & Ratcliff, 1992). However, the masculine pronoun *he* would have conflicted with the feminine stereotype, and would have led to an interruption in reading or understanding the sentences. In pronoun resolution, the reader attempts to find the most likely antecedent to the pronoun based on amongst others gender information (see Siemund, 2013). Based on the stereotype knowledge, the pre-school teacher may initially be considered an unlikely antecedent to *he*. Another plausible antecedent may be searched for, and preceding nouns revisited (Irmen & Kurovskaja, 2010; Irmen & Roßberg, 2004; Kennison & Trofe, 2003). Finally, the gender association that was evoked by 'pre-school teacher' is revised (Kreiner et al., 2008), and pronoun resolution is achieved. Pronoun resolution takes more time when there

¹² If the assumption is that the child only has one father.

are gender incongruencies such as in the combination of *pre-school teacher* and *he* (e.g., Braun, Sczesny, & Stahlberg, 2005; Duffy & Keir, 2004; Sanford, 1985; Garnham, Oakhill, & Reynolds, 2002). More specifically, there is a reading time increase ranging from 50 to a 150 ms for the pronoun region and the post-pronoun region, which is also called the *spillover region* (see Figure 1 for an overview of the regions; e.g., Cacciari, Carreiras, & Cionini, 1997; Carreiras, Garnham, Oakhill, & Cain, 1996; Duffy & Keir, 2004; Esaulova, Reali, & von Stockhausen, 2013).

Using gender information in pronoun resolution speeds up the process of forming a mental representation of the situation one is reading about, and the references to social targets within the text (Macrae, Milne, & Bodenhausen, 1994). Gender information thus helps save cognitive resources in social cognition (Devine, 1989; Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977).

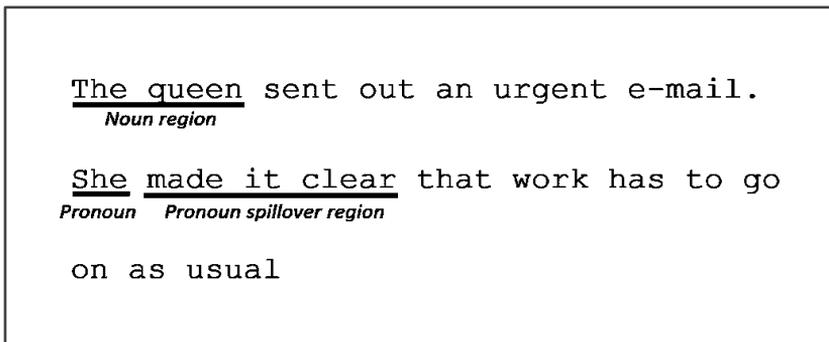


Figure 1. Regions of interest in pronoun resolution

Processing gender-neutral pronouns

The cost of using categorical information as an ‘energy-saving device’ comes with the risk of activating stereotypes related to the social category (Andersen, Klatzky, & Murray, 1990; Beukeboom & Burgers, 2019; Fiske & Neuberg, 1990). Gender-neutral third-person pronouns may not have this risk, because they lack gender information. It has been suggested that neutral pronouns instead are ambiguous, vague, and that they require more cognitive effort, because they do not offer gender categorization as a potential mental shortcut (Mackay, 1980; Siemund, 2013). This would lead to a disruption in reading. There has been little experimental research to support the hypothesis that gender-neutral pronouns are disruptive in reading.

When considering the processing cost of a gender-neutral pronoun, it is important to distinguish between its generic and its specific use, as they may

differ in the way they are related to gender (Bradley, et al., 2019). As mentioned earlier, gender-neutral pronouns can be used generically, to refer to anyone, or specifically, to refer to a nonbinary person and when not wanting to reveal someone's gender.

Research investigating the English singular pronoun *they* found that when *they* was used in a generic way referring to indefinite nouns (e.g., 'anybody', 'everyone'), it was processed faster than *he or she* (Foertsch & Gernsbacher, 1997; Speyer & Schleef, 2018). Another study found that when *they* was used to refer to a specific individual, such as in "Mary decided to treat themselves to sushi", *they* was found to lead to processing interruptions (Prasad, Morris, & Feinstein, 2018). The discrepancy between these findings may be explained as 'anybody' not leading to a mismatch in gender information because it is unrelated to gender lexically and stereotypically, while 'Mary' is associated with gender, which leads to an interruption. This suggests that it is possible that neutral words like 'anybody' lack a strong association to women or men. It is also important to note that gender-neutral pronouns that are also used as a plural pronoun, such as *they* in English, can also be associated with a number incompatibility, which can show a similar processing cost (Sanford & Filik, 2007).

As of yet, it is not clear whether it is possible to include gender identities beyond women and men into mental representations. Many people are not yet familiar with nonbinary gender identities, and it has been suggested that an 'intellectual commitment', i.e., an openness to gender identities not being limited to women and men, is needed to be able to process gender as nonbinary (Prasad et al., 2018). This relates to literature that has documented that the ability to control prejudice is related to a person's ideology (Devine, 1989). An openness to nonbinary identities is not needed to process generically used gender-neutral pronouns, because they may be understood as referring to women and men only. Consequently, generic use of gender-neutral pronouns may not evoke the same resistance as the specific use of gender-neutral pronouns. This is supported by a study finding that attitudes towards the generic use of *hen* was more strongly predicted by a preference for the linguistic status quo, while the specific use of *hen* was more strongly predicted by beliefs on gender (Renström, Lindqvist, & Gustafsson Sendén, n.d.). Traditionalism and conservative gender beliefs predicted negative attitudes and lower judgments of grammaticality of both the generic and the specific use of *hen*.

In addition to this, the relative novelty of certain neutral pronouns, and the novelty of using neutral pronouns for nonbinary persons may also be a factor affecting their processing. In Lindqvist et al. (2019), most participants (96.6%) were familiar with singular *they*, but only 39.2% of participants with *ze*. In Bradley (2019), 47.5% of participants reported knowing someone who used *they* as their pronoun, compared to 15.1% knowing someone using *ze*. In addition, new words may lead to greater interruptions because they are judged as less grammatically correct (Bradley, Schmid, & Lombardo, 2019).

In sum, it is as of yet unclear what effect gender-neutral pronouns have on mental representations, and whether they require more effort to process. If gender-neutral pronouns require more effort, this may be due to its lack of gender information, its specific or generic use, its novelty, and may interact with personal attitudes of the perceiver.

Pronouns and gender categorization

In addition to the potential costs of gender-neutral pronouns, proponents have highlighted their potential to reduce the importance of gender (Milles et al., 2012). The introduction of *hen* also came with such expectations. In the article ‘Swedish needs a new word’, Milles, Salmson and Tominic wrote:

By freeing [*hen*] from expectations linked to traditional gender roles, an opportunity is given to meet Kivi [the main character in the children’s book] on other premises. It is an exciting linguistic opportunity! Why miss that chance? It is needed if an author, such as Jesper Lundqvist who wrote *Kivi & Monsterhund*, wants a character to be valued based on its individual characteristics and provide all children opportunity to identify with the character (Milles et al., 2012).

Many proponents of *hen* expected the pronoun to have the potential to reduce gender stereotyping and discrimination through language (Wojahn, 2015). Two main ways can be distinguished in the research that has investigated this hypothesis thus far; *hen* may reduce stereotyping by making gender less salient in language, and *hen* may expand upon or challenge the traditional binary gender categories.

One of the first studies on *hen* tested which genders were activated by describing a fictitious mobile phone user with different pronouns. Results showed that participants assumed least frequently that the mobile phone user was a man when *hen* was used, compared to when generic *han*, *han eller hon* [‘he or she’], *hon eller han* [‘she or he’], *han/hon* [‘he/she’] and *den* [‘it’] were used (Wojahn, 2013). More participants indicated they had read about a person who could be either a woman, a man, or someone with another gender identity when they read *hen* instead of the other pronouns. In another study, Lindqvist and colleagues (2019) found that many supposedly neutral words (e.g., ‘the applicant’) evoked the image of a man, while *hen* led to participants remembering a person of unknown gender.

Some studies have found effects of *hen* on social cognition and attitudes. Pérez and Tavits (2019) found that attitudes towards sexual and gender minorities were more positive when participants were instructed to use *hen* than when they used generic *han* (see also Tavits & Pérez, 2019). Lindqvist and colleagues (n.d.) found that reading about a fictive person referred to as *hen*

led to participants associating the fictive person with more non-normative gender expressions than when the person was referred to with *han/hon*. The authors suggested in a previous study that *hen* may lead to “thinking outside the [gender binary] box” (p.16) and a reduced salience of gender (Bäck, Lindqvist, & Gustafsson Sendén, 2015).

The effect of *hen* on person perception requires further investigation. As of yet, it is unclear whether as a pronoun for nonbinary individuals, *hen* may lead to a different mental conceptualization of gender, for example as three categories, or a scale or scales of femininity and masculinity.

General aims

The implementation of a new gender-neutral pronoun raises many empirical questions. What explains the criticism of a pronoun like *hen*? And is there empirical support for the beliefs about the effects of *hen*, such as its potential to disrupt and to reduce stereotyping? The two aims of this thesis are to gain understanding of the motivations for resistance against *hen*, and to investigate the effect of *hen* on social cognition. These aims were met through a set of three studies.

Study I documented the arguments that were used against gender-neutral pronouns. Using taxonomies based on past criticism against other gender-fair language initiatives (Blaubecks, 1980; Parks et al., 1998), a framework was developed to capture arguments against gender-fair language, and the underlying motivations for being resistant.

Study II tested whether the belief that *hen* interrupts reading is supported by empirical evidence. To this aim, the reading time of sentences including *hen* with binary pronouns (*hon* [‘she’] and *han* [‘he’]) were compared. I also compared whether *hen* interrupted reading more when it referred to role nouns associated with lexical gender (e.g., queen, father), stereotypical gender (e.g., hairdresser, carpenter), or no gender (e.g., sibling, colleague). The effect of *hen*’s novelty on the processing cost was also investigated.

Study III investigated whether pronouns affect gender categorization and how this affects the memory of a face. I tested whether the pronoun *hon* led to the categorization of a gender-ambiguous face as a woman, and whether the pronoun *han* led to the categorization of a gender-ambiguous face as a men. I also tested whether *hen* reduced the effect of gender categorization.

Summaries of the empirical studies

Study I Four dimensions of criticism against gender-fair language

Vergoossen, H. P., Renström, E. A., Lindqvist, A., & Gustafsson Sendén, M. (2020). Four dimensions of criticism against gender-fair language. *Sex Roles*, 83, 328–337.

Aim

The aim of Study 1 was to investigate and categorize arguments used against *hen* and compare them to arguments against past gender-fair language reforms that aimed to increase the salience of women in the 1970s and 1980s to the current implementation of *hen*.

Background

Gender-fair language strategies often face resistance. Negative attitudes have been documented against specific gender-fair reforms, such as the replacement of the masculine generic *he* with the paired *he/she* (Blaubergs, 1980) and guidelines for non-sexist language (Parks et al., 1998), as well as the introduction of a gender-neutral pronoun (Bäck et al., 2015; Gustafsson Sendén et al., 2015). In this study, we investigated what categories of arguments can be discerned from the criticism against *hen*.

Past research has discerned several arguments that are used against adopting gender-fair language. Blaubergs (1980) developed a taxonomy of arguments against gender-fair language in the wake of the proposal in the 1970s to replace the masculine generic ‘he’ with ‘he or she’. Blaubergs analyzed a sample of arguments in English language newspaper articles, scientific journals and other media, and established eight categories of negative arguments (e.g., language being a trivial concern and too difficult to change). Parks and Robertson (1998) extended Blaubergs’ taxonomy based on undergraduate’s arguments against gender-fair language with four more categories capturing hostile and unempathic arguments, and arguments related to adherence to tradition, and sexism being deemed acceptable. A great hostility also characterized the debate surrounding *hen* (Wojahn, 2015).

In the present study we investigated whether past categories also capture the criticism of *hen*, as previous studies have only documented criticism of forms of gender-fair language planning concerned with feminizing the language in a different time and cultural context. If the arguments used against gender-neutral language planning strategies are similar, this continuity might indicate that people are more averse to gender-fair language initiatives than to the content of the reforms.

Method

Four-hundred participants participated in the study. The participants first read a description of how *hen* can be used:

Hen can be used when it is not necessary to specify a gender, for example to replace 'he/she', or for individuals that don't want to categorize themselves as she or he."

Subsequently, they described in a free-text response why they did or did not want to use *hen*. Of the participants, hundred sixty-eight participants ($M_{\text{age}} = 30.18$, $SD = 12.08$, range 18-72) provided a total of 208 critical arguments, which were included in the analysis.

To categorize the arguments, we used a coding scheme based on Blaubergs (1980) and Parks and Robertson (1998). The initial coding scheme included 12 categories of arguments against gender-fair language¹³. The 208 negative arguments were coded through thematic analyses (Braun & Clarke, 2006). The approach to the thematic analyses was both deductive and inductive. The deductive approach involved coding the arguments into the original categories, whereas the inductive approach involved synthesizing new categories from the arguments that did not fit into the original categories. The authors first individually coded the arguments into the eleven original categories. The average agreement between coders for coding arguments into the separate original categories ranged from 33.33% (this category consisted of only 3 arguments) to 100% ($M_{\text{agreement}} = 80.34\%$, $SD = 23.4$). After a joint discussion, some original categories were modified and two new categories were generated. When all comments were categorized, all authors were involved in an inductive thematic analysis of the categories to discern latent motivations for using these categories of criticism, in accordance with Braun and Clarke (2006).

¹³ The original coding scheme can be found at <https://link.springer.com/article/10.1007/s11199-019-011108-x>

Results

The coding of the 208 negative arguments against *hen* into categories showed that the majority (76.9%) of the arguments fit the categories in the original taxonomies from past reforms. Two original categories were modified: Sexism is acceptable was modified into Sexism and cisgenderism are acceptable, and Change is too difficult into Change is too difficult or unnecessary. About a fifth of the arguments were coded into two new categories: Gender identification is important and Distractor in communication. Two original categories touching upon cross-cultural and historical comparisons did not occur in this sample.

In addition, the arguments were structured into four themes that capture the underlying motivations of criticism of gender-fair language: (a) Defending the linguistic status quo (39.4% of arguments, n = 82), (b) Sexism and cisgenderism (27.4%, n = 57), (c) Diminishing the issue and its proponents (26.9%, n = 56), and (d) Distractor in communication (6.3%, n = 13). The dimensions and their underlying categories are presented in Table 2.

Table 2. *Themes of Criticism of Gender-fair Language, Their Categories, and Definitions*

Themes	
Categories	Definitions
Defending Linguistic Status Quo	Participants provide arguments to keep language unchanged
Change is too difficult and unnecessary ¹	The current linguistic term is too deeply rooted in the language, the suggested change is too devious, or breaking a language habit is too difficult to justify implementing the change.
Appeal to authority ¹	Authorities in the field of language, such as linguists or dictionaries but also teachers and family members, have a final say in what is the correct way to use language.
Word etymology ¹	The original meaning of the word is the real meaning of the word, regardless of modern interpretations. ¹
Tradition ¹	Language is the way it is and has been this way a long time, and it should remain unaltered.
Sexism and Cisgenderism	Participants indicate gender hierarchies where cisgender identities or men are considered of greater importance.
Sexism and cisgenderism are acceptable ²	There are only two genders, and ultimately everyone belongs to one of the two; there are differences between women and men, and language should reflect this. Originally, this category was defined as: “Men are superior to women, so it is acceptable if language reflects this”

Gender identification is important ³	New category. Gender-neutral language is impersonal and objectifying; the wishes of those that want to be referred to with a gendered pronoun must be respected; gender is important for one's identity; gender is important in communication.
Diminishing the Issue and Its Proponents	Participants devalue or ridicule the word or the proponents of the reform
Hostility and ridicule ¹	The topic of sexist language is ridiculous and potentially harmful. Proponents of gender-fair language are malicious.
Freedom of speech/Unjustified coercion ¹	The proponents of linguistic change attempt to control or censure freedom of speech through, for example, publication guidelines.
Sexist language is a trivial concern ¹	People should focus on more important forms of societal injustice than language, for example, on the "real" physical and economic oppression of women.
Sexist language is not sexist ¹	Sexist language is not sexist when there is no intention to be sexist. When words are perceived as sexist, the bias is not in the language used by the speaker, but in the person listening.
Distractor in Communication	Participants indicate that using <i>hen</i> takes attention from the message
Distractor in communication ³	New category. The word is too loaded; it is too much of a statement; it detracts from the message; when using it, it may invite hostility from opponents of gender-neutral language.

Adjusted from Vergoossen, Renström, Lindqvist, & Gustafsson Sendén (2020).

¹ Original category based on Blaubergs (1980) and Parks & Robertson (1998)

² Original category, modified in present study

³ New category

Discussion and conclusions

At large, critical arguments against using *hen* were similar to arguments used against the pronoun reform involving the paired form *he or she* in the 1970s and 1980s. In addition to the identified categories of criticism, the arguments were structured into four themes that capture the motivations underlying resistance against gender-fair language.

The dimension **Defending the linguistic status quo** captured a variety of categories that justify the current linguistic norm and the preference to keep the current linguistic system unchanged. Arguments within this category appealed to linguistic authorities and linguistic traditions for the final say on what words should be used. Many of the arguments concern habits and norms, and were related to the belief that linguistic habits are difficult to change. Arguments in this category are similar to arguments found against linguistic var-

iations and linguistic change without gender-fair goals (Ladegaard, 2000). Arguments within this dimension may therefore be characteristic of criticism against linguistic change in general, and not specific to criticism of gender-fair language change.

The dimension **Diminishing the issue and its proponents** contained some of the participants' most hostile comments. This hostility may be rooted in people's own identities as a woman or a man being threatened, as 'breaking' or challenging the gender binary leads to strong responses when people perceive it as a threat to their own gender identity (Morgenroth et al., 2020). Participants also mentioned that they perceive gender-fair language initiatives as an infringement on their freedom of speech, and an 'imposition from above'. This may be related to *hen* not being a result from a gradual change in vernacular speech, but a linguistic innovation invented and reinforced by the government, and social groups of which the participants may not be part ('[language] change from above'; Labov, 1994, 2001, 2010). Therefore, this dimension of criticism is related to what people see as means acceptable for attaining social justice. Initiatives like *hen* may be perceived as prescriptive and a form of language policing. They may also relate *hen* to other social justice initiatives that they oppose, such as initiatives to make public spaces such as toilets gender-neutral or nonbinary inclusive or campaigns for nonbinary people to self-determine their gender in official documentation.

The dimension **Sexism and cisgenderism** captured arguments reflecting the belief that gender is essential, binary and immutable. The term 'cisgenderism' refers to the ideology that condemns people's own designations of their genders and bodies (Ansara & Hegarty, 2014). In previous gender-fair language planning initiatives, the strategy was to reduce androcentrism in language by making women more visible. This strategy made women, the 'beneficiaries' of such linguistic change, a target (Blaubergs, 1980; Parks et al., 1998). Similarly, with gender-neutral pronouns 'benefiting' nonbinary identities, those individuals become a target of discrimination. Among the arguments were comments targeting trans identities, for example expressing denial of the legitimacy of nonbinary identities.

The dimension **Gender-fair language is distracting in communication** is related to the idea that *hen* disrupts communication and denies the use of vital gender information in communication. This dimension differs from the other dimensions in that it is oriented towards the efficiency of communication, and that *hen* could lead to disruption by being an 'attention thief'. Such concerns have also been seen in the guidelines for authors of for example the American Psychological Association (APA). APA's guidelines support gender-fair language, but also recommend against using paired pronouns as they are "awkward and distracting" (p. 74, APA, 2009). Linguistic norms like guidelines and policies are important motivators for using gender-fair language (Koeser & Sczesny, 2014). It is important that such guidelines are based on empirical

evidence, and future research should investigate whether gender-neutral pronoun forms truly are distracting in communication.

Together, these dimensions show that criticism of gender-fair language shares an universality. Criticism is rooted in a variety of practical concerns and convictions on what language should look like and who gets to be represented in language. Despite the criticism, there are many examples of gender-fair language that manage to enter the main-stream vocabulary. This may be due to critical attitudes losing intensity as time passes and new words like *hen* becoming more integrated in the Swedish language (Gustafsson Sendén et al., 2015, 2021). Other forms of criticism may need to be addressed specifically to facilitate the acceptance of new gender-fair initiatives. More research is needed to establish how these dimensions of criticism are represented in different stages of implementation, and how they may be related to the implementation's ultimate success.

Study II Are new gender-neutral pronouns difficult to process in reading? The case of *hen* in Swedish.

Vergoossen, H. P., Pärnamets, P., Renström, E. A., & Gustafsson Sendén, M. (2020). Are new gender-neutral pronouns difficult to process in reading? The case of *hen* in Swedish. *Frontiers in Psychology, 11*, 2967. <https://doi.org/10.3389/fpsyg.2020.574356>

Aim

The aim of Study II was to test whether *hen* is more difficult to read compared to the gendered pronouns *hon* and *han*. In particular, we tested if *hen* was harder to process when referring to someone that lexically is defined as having a binary gender, (e.g. a mother or a king) compared to when referring to someone which stereotypically is associated with gender (e.g., a hairdresser). I also compared these types of sentences that referred to someone that could be of any gender (e.g., a colleague).

Background

Opponents of gender-neutral pronouns have criticized them for being difficult to process (Speyer & Schlee, 2018). There is little evidence supporting this belief, and only the processing of the gender-neutral pronoun *they* in English has been documented (e.g., Foertsch & Gernsbacher, 1997; Speyer & Schlee, 2018). To the best of my knowledge, no studies have yet been conducted on processing so-called neopronouns, or pronouns that are new words in a language (Hekanaho, 2020). If they are difficult to process, it is important to know whether difficulties arise because gender-neutral pronouns are new to language users, or because they do not match the gender information associated with the word they refer to (Sanford, 1985).

Difficulties in understanding gender-neutral pronouns should lead to an increase in reading time, which indicates more cognitive effort (Spiro, Coulson, Feltovich, Anderson, 2004). A way of testing whether this potential difficulty varies for different types of gendered nouns is by studying pronoun resolution. Pronoun resolution is the process of understanding whom a pronoun refers to, and has been used to document gender stereotype activation in occupational titles (Cunnings, Patterson, & Felsner, 2014; Kennison & Trofe, 2003; Khan & Daneman, 2011; Kreiner et al., 2008). Difficulties in pronoun resolution can reveal what gender associations were evoked by the word the pronoun is referring to. In this study, pronoun resolution involving *hen* is compared to pronoun resolution involving the gendered pronouns *hon* ['she'] and *han* ['he']. If *hen* takes more time to read, this may be due to a mismatch with the gender associated with the noun it is referring to (Sanford, 1985). If this is the case,

hen can be expected to be more difficult to process when referring to role nouns associated with lexical gender information (e.g., queen, father) than role nouns associated with stereotypes based on occupational gender segregation (e.g., occupational titles like hairdresser and engineer).

Method

Method, hypotheses and analyses were preregistered before data collection was completed¹⁴. One hundred and twenty participants (73% women, $M_{\text{age}} = 25.8$, $SD = 6.5$) completed a reading task. The task consisted of reading 48 sentence pairs.

Table 3. *Overview of combinations of nouns and pronouns in the stimulus materials.*

Noun category	Noun gender	Pronoun
Lexical gender	Gendered	<i>Hon</i> or <i>han</i> congruent with noun <i>Hen</i>
	Neutral	<i>Hon</i> or <i>han</i> <i>Hen</i>
Stereotypical gender	Gendered	<i>Hon</i> or <i>han</i> congruent with noun <i>Hen</i>
	Neutral	<i>Hon</i> or <i>han</i> <i>Hen</i>

Table 3 presents all combinations of nouns and pronouns in the stimulus sentence pairs. Half of the 48 sentence pairs included a role noun associated with lexical gender, and half included a role noun associated with stereotypical gender. In both the lexical and stereotypical conditions, neutral equivalents were included (e.g., ‘sibling’ in addition to the gendered set ‘sister’ and ‘brother’). Within the role noun categories, 12 nouns were binary gendered (6 feminine, 6 masculine), and 12 were neutral. The pronouns were either binary or *hen*. The binary pronouns and congruent with the gender associated with the noun (*hon*[*she*] or *han*[*he*]) or randomly used in relation to the neutral nouns. The semantic context of the sentences was kept neutral to avoid gender

¹⁴ To make the choices for this study transparent, the method, hypotheses and analyses were preregistered before data collection was completed and can be found at https://osf.io/exkdx/?view_only=928fac25b06946d3bd34aab571c8ea77. Data, protocols and R scripts are available on FigShare: https://su.figshare.com/articles/dataset/Open_data_Are_new_gender-neutral_pronouns_difficult_to_process_in_reading_The_case_of_hen_in_Swedish/13143158.

stereotyping based on other information than the role nouns and pronouns. For example:

The woman[man][person] signed the contract.
Hon[Han][Hen] looked forward to starting the new job.

The nurse[carpenter][architect] signed the contract.
Hon[Han][Hen] looked forward to starting the new job.

The reading task also included 40 filler sentence pairs of similar length and neutral content as the target sentence pair (e.g., “Kim has borrowed a book from the library. The book is about life in medieval Sweden”).

In this study, processing speed was operationalized as the time it takes to read the pronoun, the three words following the pronoun (*pronoun spillover region*), and the word the pronoun refers to (the antecedent in the noun region) (see Figure 2). An eye-tracker was used to record eye movements.

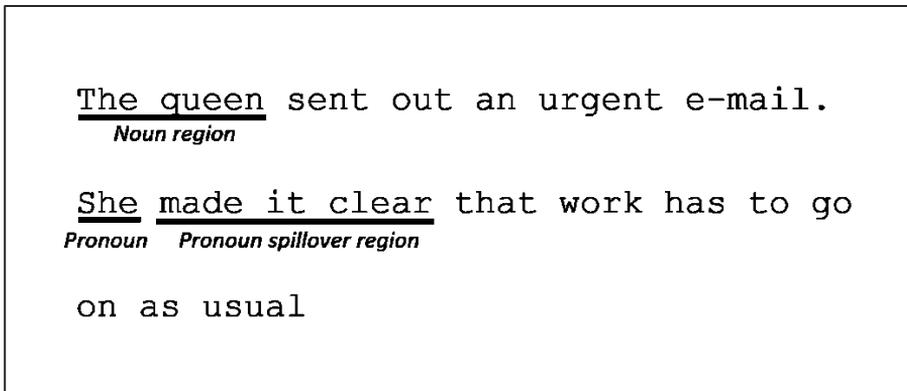


Figure 2. Regions of interest in pronoun resolution

Participants were also asked to report their previous experience with hen, and some individual factors, such as their attitudes towards hen, their sexism, and their use of hen.

Results

Processing cost of hen

According to Hypothesis 1, *hen* was expected to lead to a greater processing cost than gendered pronouns. All hypotheses were tested for the three regions related to pronoun resolution: the pronoun region, the pronoun-spillover region (the three words following the pronoun), and the noun region. As can be seen in Figure 3, an effect of pronoun was only found for the pronoun spillover region. Participant's reading time for this region was 43 ms longer after encountering *hen* compared to *hon* or *han*. No greater processing costs were found for the pronoun and the noun regions.

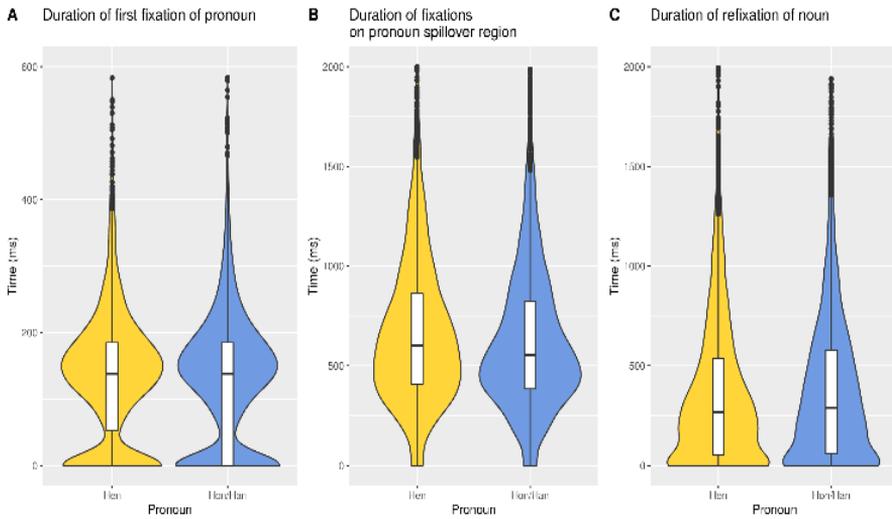


Figure 3. Reading time (ms) for *hen* and *hon/han* in each of the three regions: (A) Pronoun, (B) Spillover region, and (C) noun. The graph has been truncated. Taken from Vergoossen et al. (2020)

Processing cost of hen referring to a neutral compared to a gendered noun

According to Hypothesis 2, *hen* was expected to lead to a smaller processing cost when referring to a noun not associated with gender compared to a noun associated with gender. However, the evidence pointed towards a reversed relationship; *hen* led to a greater processing cost when it referred to a neutral noun compared to a binary gendered role noun (see Figure 4).

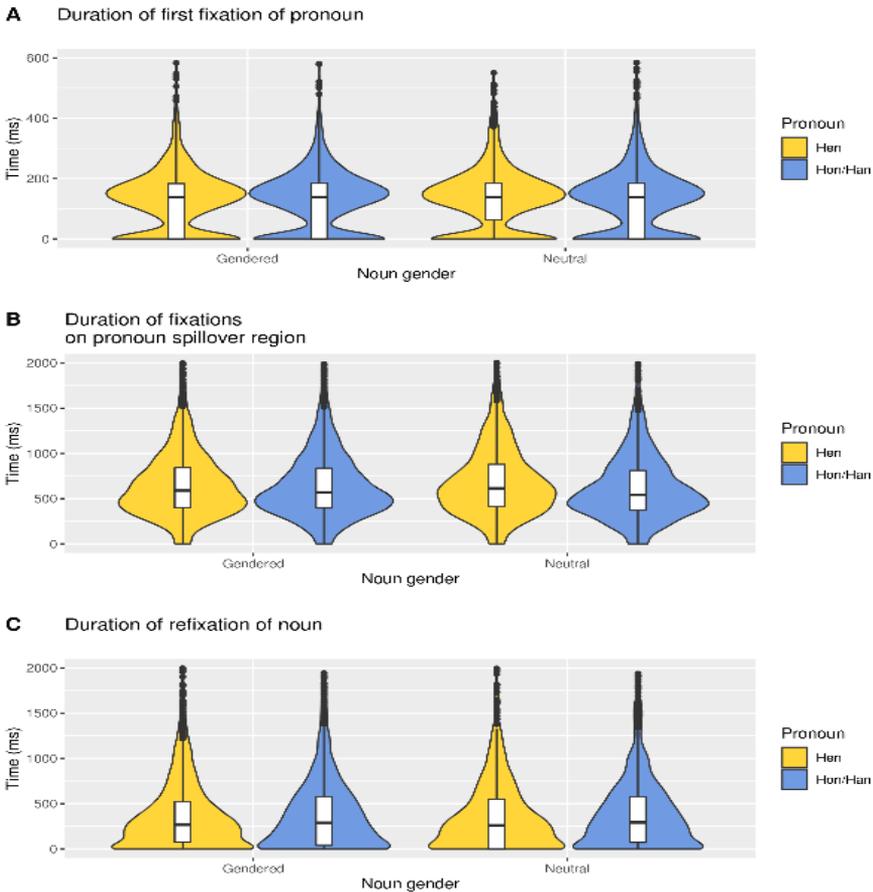


Figure 4. Reading time (ms) for hen and hon/han in each of the three regions. The graph has been truncated. Taken from Vergoossen et al. (2020)

Processing cost of hen referring to lexically gendered nouns compared to stereotypically gendered nouns

According to Hypothesis 3, hen referring to a noun containing lexical gender should lead to a greater processing cost than when referring to a noun associated with stereotypical gender. However, no difference in processing cost was found for the different types of nouns.

Effect of experience with hen on processing hen

Previous experience with hen as measured through self-reports could affect how hen is processed. No interaction was found between self-reported previous experience with hen and type of pronoun for any of the three regions of interest.

Effect of personal attitudes on processing hen

Exploratively it was tested whether personal attitudes affected *hen*'s processing cost. A negative attitude toward *hen* was not associated with a greater processing cost. Strongly identifying as a feminist was related to faster reading behavior in all three regions, but did not interact with the type of pronoun.

Discussion and conclusion

This eye-tracking experiment tested whether a new gender-neutral pronoun is more difficult to process in reading than gendered pronouns by measuring the processing cost in reading. In contrast with the hypotheses, no effects of *hen* were found on reading, with the exception of a slightly longer reading time for the pronoun spillover region. Instead, there was strong evidence for null effects. Surprisingly, the cost found in the spillover region was unrelated to the type of gender information in the noun. There was also no interaction with the processing cost and previous experience with *hen*.

These findings are in line with the findings from studies on singular 'they', where they did not have a greater processing cost than gendered pronouns (Foertsch & Gernsbacher, 1997; Speyer & Schleef, 2018). The small processing cost that was found for *hen* could be due to *hen* being a new gender-neutral pronoun, whereas *they* is a previously existing word in English. However, novelty, as measured by self-rated previous experience to *hen*, did not affect the processing cost of *hen*, nor did the exposure to *hen* within the experiment as reflected by the interaction between amount of completed trials and type of pronoun. In sum, this study does not support the notion that new gender-neutral pronouns are difficult to process.

Study III Do you recognize hon, han and hen? How binary and gender-generic pronouns affect gender categorization in face recognition

Vergoossen, H. P., Sczesny, S., Lindqvist, A., Renström, & Gustafsson Sendén, M. (2021). Do you recognize hon, han, hen? How binary and gender-generic pronouns affect gender categorization in face recognition. *Manuscript*.

Aims

The aim of Study III was to test whether gendered pronouns affect gender categorization of gender-ambiguous faces, and whether a gender-neutral pronoun can reduce this effect.

Background

Gender categorization is an automatic cognitive process (Hugenberg & Sacco, 2008). It simplifies and structures social information in a way that allows limited cognitive resources to process large amounts of information (Allport, 1954; Fiske & Neuberg, 1990; Sherman, Macrae, & Bodenhausen, 2000). Many cognitive processes aid the remembering of faces. When people encode a face into memory, they include information about the characteristics of the face (e.g., nose and mouth), as well as the social categories that are associated with the face (e.g., gender; Hugenberg & Sacco, 2008). This categorical gender information speeds up the process of face recognition (e.g., Bodenhausen, Kang, & Peery, 2011). For example, when looking for a female friend in a crowd of people, less time is spent looking at faces perceived as male (Baudouin & Tiberghien, 2002). In this way, gender categorization aids in processing social information (Macrae et al., 1994).

Gender categorization is usually binary, that is, a face is either categorized as female or male. Encoding a face into memory along with a binary gender category can bias how feminine or masculine the face is perceived and remembered to be. For example, participants remembered a moderately gender ambiguous face (i.e., 70% female and 30% male) as more feminine in a recall task (Huart, Corneille, & Becquart, 2005). This process leads to the sacrifice of details of the face's characteristics when storing the face into memory (Huart et al., 2005). This, in turn, can affect the assumptions about someone's personality, with people with masculine faces being assumed to have a higher competence, and people with feminine faces thought to be more warm (Walker & Wänke, 2017). It also oversimplifies the variety of existing gender

identities, as not all people identify with or express themselves within binary gender (Hyde et al., 2019; Lindqvist et al., 2020). Furthermore, this oversimplification reinforces face gender as a highly essentialized social category, with a lower tolerance of faces that are not typical exemplars of binary gender categories (Wittlin, Dovidio, LaFrance, & Burke, 2018).

Studies have indicated that linguistic cues associated with gender can lead to the categorization of gender-ambiguous faces as women or men. In a study by Baudouin and Tiberghien (2002), participants were asked to memorize a gender-ambiguous face labeled with a feminine name or a masculine name and then asked to search for them among other faces, of which half was feminine and half was masculine. Participants had to indicate when the target face reappeared. When participants searched for a face encoded with a feminine name, they spent more time looking at feminine than masculine faces while searching for the target face, and the opposite pattern occurred when they were searching for a face encoded with a masculine name. In the present study, we tested whether gendered pronouns similarly affect gender categorization in face perception. In addition, we tested how the gender-neutral pronoun *hen* affected the gender categorization of gender-ambiguous faces. We used a similar recognition task to Baudouin and Tiberghien (2012) as an indirect way of measuring gender categorization (Petty, Fazio, & Brinol, 2009). In addition, we also assessed participants' explicit gender categorization, and collected information on their age, gender, and gender essentialism beliefs.

Method

Method, hypotheses and analyses were preregistered before data collection¹⁵. Altogether, 428 (50.5% self-identified women, 49.5% self-identified men; $M_{\text{age}} = 48.85$, $SD = 18.34$) completed the study online. After excluding participants in accordance with the preregistration (2 reported technical or visual difficulties, 34 had an accuracy of less than 60% in their responses, and 28 participants failed the pronoun memory check), 364 participants were included in the analyses.

The design was a 4 (pronoun: *hon* ['she'], *han* ['he'], *hen*, control) \times 2 (gender of distractor face: feminine, masculine) mixed-participant design. Participants were randomly assigned to the conditions. The main dependent variable was the average response time participants looked at feminine and masculine distractor faces. The accuracy of identifying the target face and the accuracy of dismissing the distractor faces were also calculated.

The experiment was presented as a memory task. In the encoding phase, participants were asked to memorize a gender-ambiguous target face which they could observe for as long as they wanted. The instructions containing the manipulation were presented above the gender-ambiguous target face and

¹⁵ Vergoossen, Gustafsson Sendén, Lindqvist, & Renström (2020).

were kept identical, except for the pronoun (see Figure 5). The control condition included ‘the person’ instead of a pronoun, indicating how participants categorize the target face without the presence of pronouns.

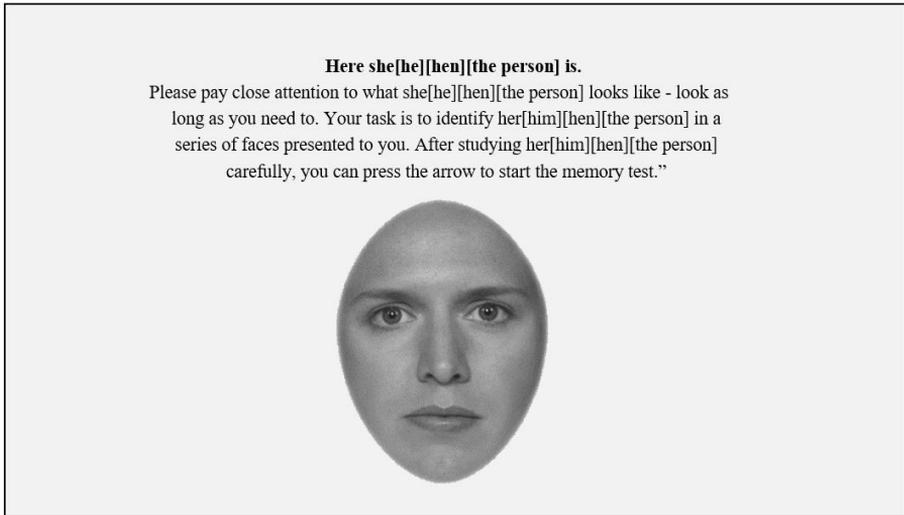


Figure 5. Example of a gender-ambiguous face and the introductory text containing the different pronoun label options.

In the recognition phase, participants saw a series of 21 faces (9 feminine, 9 masculine, 3 repetitions of the target face) in a randomized order and were asked to indicate as quickly as possible whether a face matched the target face or not. The third repetition of the target face was always presented last, to keep the participant focused. Each face was displayed on the screen until the participant responded with a keyboard press ('F' = target face, 'J' = not the target face). Each face was displayed after a 200 ms delay. Participants did not receive any feedback on their responses. Finally, as a manipulation check, participants were asked which pronoun was used to introduce the face. They were also asked about their gender categorization of the target face.

Results and discussion

On average, participants correctly identified the target face in 87.66% ($SD = 20.79$) of trials. To test the hypothesis that pronouns affect gender categorization, we computed a 4 (pronoun: *hon*, *han*, *hen*, no pronoun) \times 2 (gender of distractor face: feminine and masculine) mixed ANOVA with response time as the dependent variable. Pronoun was the between-participants factor and gender of distractor face the within-participants factor. There was no main effect of pronoun, $F(3, 360) = 1.322, p = .267, \text{partial } \eta^2 = .011$, but there was

a significant effect of gender of distractor face, $F(1, 360) = 1528.393, p < .001$, partial $\eta^2 = .809$, such that participants looked longer at feminine faces ($M = 1338$ ms, $SD = 756$ ms) than masculine faces ($M = 1168$ ms, $SD = 579$ ms). In support of the hypothesis, there was a significant interaction between face gender and pronoun, $F(3, 360) = 11.649, p < .001$, partial $\eta^2 = .088$. Post hoc comparisons using a Bonferroni correction for multiple comparisons revealed support for the differentiating effect of gendered pronouns on response time to feminine and masculine faces, but only for binary pronouns; in the *hon* condition, participants looked longer at feminine faces ($M = 1323$ ms, $SD = 668$) than masculine faces ($M = 1042$ ms, $SD = 501$ ms), $t(103) = 6.904, p < .001$, Cohen's $d = 0.48$. In the *han* condition, participants looked longer at masculine at faces ($M = 1378$ ms, $SD = 719$ ms) than feminine faces ($M = 1245$ ms, $SD = 745$ ms), $t(95) = 2.381, p = .019, d = 0.18$. However, contrary to our hypothesis that participant in the *hen* condition would spend the same time looking at feminine faces and masculine faces, we did find a significant difference in response times. Participants in the *hen* condition looked longer at the feminine faces ($M = 1454$ ms, $SD = 863$) than the masculine faces ($M = 1199$ ms, $SD = 623$ ms); $t(82) = 3.058, p = .003, d = 0.34$. In the control condition, participants also spent significantly more time looking at feminine faces ($M = 1331$ ms, $SD = 757$) than masculine faces ($M = 1054$ ms, $SD = 471$); $t(78) = 4.057, p < .001, d = 0.44$.

Table 4. Overview of the average response time (SD) for each of the conditions (ms)

Condition	Feminine faces	Masculine faces
<i>Hon</i> (n = 104)	1323 (668)	1042 (501)
<i>Han</i> (n = 96)	1245 (745)	1378 (719)
<i>Hen</i> (n = 83)	1454 (863)	1199 (623)
Control (n = 79)	1331 (757)	1054 (471)

Accuracy

We also tested whether participants correctly identified the target face (presented 3 times), and whether accuracy deferred depending on what pronouns were used. On average, participants correctly identified the target face in 87.66% ($SD = 20.79$) of trials. A univariate ANOVA with pronouns (*han*, *hon*, *hen*, control) did not indicate any differences between conditions, $F(3, 361) = 1.327, p = .265$, ($M_{hon} = 85.58\%$, $SD = 22.16$; $M_{han} = 91.32\%$, $SD = 18.89$; $M_{hen} = 83.93$, $SD = 22.91\%$, $M_{Control} = 89.87\%$, $SD = 17.99\%$). There were also no differences in how quickly they identified the target face, $F(3, 361) = 1.703, p = .166$ ($M_{hon} = 2277$ ms, $SD = 1682$ ms; $M_{han} = 1973$ ms, $SD = 1289$ ms; $M_{hen} = 2115$ ms, $SD = 1763$ ms, $M_{Control} = 1796$ ms, $SD = 1101$ ms).

Auxiliary analyses

Because the analyses revealed a main effect of gender of distractor face, where participants looked longer at feminine faces than masculine faces in three of the four conditions, we exploratively compared how participants reported categorizing the gender-ambiguous face after the experiment (see Table 1). Participants in the control condition without a pronoun reported categorizing the gender-ambiguous faces as a woman (62.0%), a man (15.2%) or as a non-binary person (0%), and 22.8% reported not categorizing the gender-ambiguous face. The distribution of the control condition was used as a reference in a chi-square goodness of fit test to test whether the pronouns affected gender categorization in expected directions. The distribution of all pronoun conditions differed significantly from the distribution in the control condition (*hon*, $X^2(3, N = 50) = 40.25, p < .001$, *han*, $X^2(3, N = 72) = 101.11, p < .001$, *hen*, $X^2(3, N = 59) = 19.19, p < .001$.)

Table 5. *Frequencies and percentages of the reported categorization of the gender-ambiguous faces by condition (n = 396)*

Pronoun Condition	Correctly remem- bered pro- noun	Categorized as			
		Woman	Man	Non-bi- nary	Did not categorize
Hon n = 105	105 (100%)	92 (88.6%)	2 (1.9%)	-	10 (9.5%)
Han n = 102	97 (95.1%)	18 (18.6%)	47 (48.5%)	6 (6.2%)	26 (26.8%)
Hen n = 90	83 (92.2%)	41 (49.4%)	10 (12.0%)	2 (2.4%)	30 (36.1%)
Control n = 99	79 (79.8%)	49 (62.0%)	12 (15.2%)	-	18 (22.8%)

Participants in the *hon* condition were more likely to categorize the gender-ambiguous face as a woman (88.6%) and less likely to categorize the face as a man (1.9%) in comparison to the control condition (62.0% and 15.2%, respectively); and they were less likely to indicate that they did not gender categorize the face (9.5% compared to 22.8% in the control condition). In the *han* condition, participants were more likely to categorize the face as a man (48.5%), and less likely to categorize the face as a woman (18.6%) compared to the control condition; they were also more likely to indicate that they did not categorize the face (26.8%). In the *hen* condition, participants were less likely to categorize the face as a woman (49.4%), less likely to categorize the face as a man (12%) compared to the control condition, and more likely to report not categorizing the face (36.1%).

Table 5 shows that participants often categorized faces memorized with *hon* as a woman and faces memorized with *han* as a man. However, not all participants reported having categorized the face in accordance with the gender of the pronoun. To test whether there was an effect of self-reported gender categorization on response time, and whether it interacted with pronoun, we computed a 2 (pronoun: *hon*, *han*) x 2 (gender of distractor face: feminine and masculine) x 2 (self-reported gender categorization: woman, man) mixed ANOVA with response time as the dependent variable, pronoun as the between-participants factor and gender of the distractor face as the within-participants factor. There was no main effect of face gender on response time, $F(1, 195) = 1.695, p = .195$, partial $\eta^2 = .009$, and no main effect of pronoun on response time, $F(1, 195) = 0.542, p = .388$, partial $\eta^2 = .004$. There was also no interaction between gender of distractor face and the gender categorization of the target face, $F(3, 195) = 0.882, p = .451$, partial $\eta^2 = .013$. Like in the main analysis, we did find an interaction between gender of distractor face and pronoun again, $F(1, 195) = 6.283, p = .013$, partial $\eta^2 = .031$.

In addition, Table 5 shows that there were 84 participants who reported not having gender categorized the target face at all ($n_{hon} = 10, n_{han} = 26, n_{hen} = 30, n_{no\ pronoun} = 18$). To test whether not categorizing the face affected response time, and to test whether this interacted with pronoun, we computed a 4 (pronoun: *hon*, *han*, *hen*, no pronoun) x 2 (gender of distractor face: feminine and masculine) mixed ANOVA with response time as the dependent variable, pronoun as the between-participants factor and gender of the distractor face as the within-participants factor. The goal of this analysis was to test whether participants who reported not having categorized the face, spent an equal time looking at feminine faces and masculine faces. We found that for these participants, there was no significant difference in response time to the feminine and masculine faces, $F(1, 80) = 0.227, p = .294$, partial $\eta^2 = .014$ and no difference in response time between the pronoun conditions, $F(1, 80) = 0.768, p = .515$, partial $\eta^2 = .028$. There was also no interaction between the pronoun the participants had encountered and the feminine and masculine faces, $F(1, 80) = 1.700, p = .174$, partial $\eta^2 = .060$.

Discussion and conclusion

In the present study, we tested whether pronouns affect gender categorization in a face recognition task. We used a paradigm in which participants were instructed to memorize and identify a gender ambiguous face that was presented together with either a binary pronoun, (*hon*, *han*), a gender-neutral pronoun (*hen*) or without a pronoun (control). In the recognition task, participants were presented with feminine and masculine faces together with the gender ambiguous target face. In line with previous research, the linguistic labels influenced gender categorization and recognition such that participants looked

longer at faces that aligned with the gender category they assigned the target face.

As expected, labeling a gender-ambiguous face with a binary pronoun (*hon*, *han*) influenced participants to categorize a gender ambiguous face in line with the binary pronouns (i.e., *hon* = woman, *han* = man). Participants that searched for a target faces labeled as *hon* looked longer at feminine faces, whereas participants that searched for a target face labeled as *han* spent more time looking at masculine faces. These findings are consistent with evidence indicating that linguistic cues evoke gender categorization (e.g., Baudouin & Tiberghien, 2002; Huart et al., 2005). The data on participants self-reported gender categorization also supported the finding that binary pronouns affect gender categorization. Participants in the *hon* and *han* conditions were more likely to report having categorized the face as a woman or a man, respectively. This indicates that binary pronouns evoked gender categorization.

The present research also included the effect of a generic-neutral pronoun on gender categorization. For the gender-neutral manipulation, we found that 36.1% of the participants indicated that they did not gender categorize the face, and that 2.4% categorized the face as belonging to someone with a non-binary gender identity. Yet, 49.4 % categorized the face as a woman, and 12% as a man. This means that *hen* did not extinguish binary gender categorization, and participants spent more time looking at feminine faces than masculine faces. However, when only looking at participants who indicated they had not categorized the face, participants spent a similar amount of time looking at the feminine and masculine faces. This suggests that a gender-generic pronoun can reduce the chance of gender categorizing a face.

General discussion

The two aims of this thesis were to (a) gain understanding of the motivation for the resistance against *hen*, and to (b) investigate the effect of *hen* on social cognition. *Hen* challenges assumptions of language and gender, and this thesis combines qualitative research and experimental research to give insights in the effect *hen* has on attitudes and cognitive processes. Together, the three studies lead to four main conclusions. This thesis adds to the understanding of resistance against gender-fair language through the findings 1) Resistance against *hen* and other gender-fair language reforms is largely uniform, and 2) Resistance against *hen* and other gender-fair language reforms is largely motivated by gender beliefs. Furthermore, this thesis gives insights in the effect of a neopronoun—*hen*—on social cognition. Based on an eye-tracking experiment and a face recognition experiment, this thesis suggests that 3) *Hen* does not appear to be difficult to process, and 4) *Hen* reduces the effect of binary gender categorization.

Resistance against gender-fair language reforms is largely uniform

One of the main questions in this thesis was whether the criticism of *hen* was similar to criticism of previous gender-fair language initiatives. Previous research has documented criticism of gender-fair language initiatives in the 20th century (specifically the 1970s and the 1990s, Blaubergs, 1980; Parks et al., 1998) and have focused on criticism in the United States on language feminization strategies in the English language. The primary goal of these initiatives was to reduce androcentrism in language by making women more visible. *Hen* differs from these initiatives in multiple ways, because it was introduced in a different time, language, and cultural context. In addition, it differs from the other initiatives in its form and goal. *Hen* is an example of a neutralization strategy, which instead of focusing on making another (cis) gender more visible, instead reduces the genderedness of language. Another important difference from feminizing language initiatives is that *hen* is inclusive towards people with nonbinary gender identities, which language feminization cannot.

In Study I I found that, despite the differences in strategy, criticism of *hen* was very similar to criticism of other gender-fair language initiatives. Like in previous studies, participants expressed hesitance to change their linguistic habits, hostility towards the proponents of linguistic change, a lack of understanding for the necessity of the reform, and used authorities' opinions to justify not using *hen*. A majority of the arguments could be captured by categories established in previous research. This continuity in criticism may in part be rooted in a general hesitance towards linguistic change and a preference for the status quo (Jost et al., 2004). In addition to this, it may be that for people who are critical of gender-fair language initiatives, it is not the linguistic change that evokes resistance, but rather the way the initiative challenges their beliefs on what language and gender are, do, and should look like.

Resistance against gender-fair language is motivated by gender beliefs

In addition to comparing the criticism of *hen* with criticism of other gender-fair language initiatives, I isolated themes of motivation for resistance against gender-fair language. I found that part of criticism of gender-fair language is of ideological nature. This finding adds to previous research on the relation between resistance to gender-fair language and personal beliefs such as negative attitudes towards women, gender-specific justification (Douglas & Sutton, 2014; Sarrasin et al., 2012), and right-wing conservatism (Formanowicz et al., 2013). This thesis adds to this relation by documenting that criticism against gender-fair language can also be related to prejudice towards nonbinary individuals.

In Study I, the relation between resistance against *hen* and personal convictions became especially clear when participants described what gender identities should be represented in language. I found that resistance against *hen* was frequently motivated by cisgenderism, or the ideology that condemns people's own designations of their genders and bodies (Ansara & Hegarty, 2014). Cisgenderism has not been documented as being part of criticism against the gender-fair language initiatives focused on the feminization of language. In past taxonomies, classical and hostile forms of sexism (e.g., 'men are superior to women') were common. In Study I, no participants expressed such forms of sexism, but a similar hostility was expressed against people with trans identities. Trans identities were explicitly or implicitly neglected (e.g., "I don't see that a few hurt people should change language"), and pronouns for individuals with nonbinary gender identities were deemed unnecessary because, some participants expressed, there are no individuals who are neither a woman or a man. The hostility found in these comments is akin to hostility documented in other studies when the gender/sex binary is challenged

(Morgenroth et al., 2020). Repercussions for individuals violating these expectations, such as members of the LGBTQ+ community, and women and men who violate gender norms are well-documented (Katz-Wise & Hyde, 2012; Moss-Racusin, Phelan, & Rudman, 2010; Rudman, Moss-Racusin, Phelan, & Nauts, 2012), and there is increasing evidence for the same happening to individuals with nonbinary identities (Broussard & Warner, 2018; Johnson et al., 2020; Rankin & Beemyn, 2012). The specific use of *hen* makes individuals with trans identities visible as a distinct social group and makes them the “beneficiaries” of the change, and therefore the target of criticism.

In showing that there may also be a relation between prejudice towards trans individuals, this thesis also highlights the redefinition of what it means for language to be inclusive that has taken place (Stroumsa & Wu, 2018). Where gender-fair language initiatives, which were commonly called *non-sexist language* (e.g., Blaubergs, 1980), previously focused on making women more visible in language, this has now broadened beyond the inclusion of only cisgender individuals.

To progress understanding resistance against gender-fair language, in particular those initiatives that also promote inclusivity of (or at least do not exclude) nonbinary gender identities, a greater understanding of prejudice towards nonbinary gender identities is needed. Following this, research can further establish how these personal convictions relate to resistance against gender-fair language, and how this information can be used for language planning.

Hen does not appear to be difficult to process

Besides ideological motivations, many participants in Study I had pragmatic arguments for not using *hen*. They expressed not being used to *hen* yet, or as a participant put it: “[Hen] feels artificial”. The argument that new pronouns feel strange has been a common argument against many gender-fair language initiatives. In a study published in 1980, a participant is cited saying “*Her or his* may also be used, but it sounds awkward” (p. 144, Blaubergs, 1980). This is similar to an opinion of a participant cited in a study on gender-neutral pronouns from 2006, saying “my sense of language says it’s wrong” (p. 23, Grahn, 2006)¹⁶. New words may subjectively ‘feel’ unusual or wrong by language users because familiar words, or the linguistic status quo, are preferred (Gustafsson Sendén et al., 2015). While a common argument, it may also be an argument that is subject to change. The use of *hen* already showed signs of normalization with increased use and fewer negative attitudes over the span of two years between 2012 and 2014 (Gustafsson Sendén et al., 2015). In a follow-up study, Gustafsson Sendén et al. (2021) show a further increase of

¹⁶ Own translation from Swedish

use and opinion of *hen* between 2015 and 2018 in the Swedish population. Arguments towards *hen* that are of practical nature may therefore simply change by it having been part of the language for a longer period of time (Gustafsson Sendén et al., 2015), through the effects of mere exposure (Rindfleisch & Inman, 1998), as well as through exposure to arguments for using gender-fair language (Koeser & Sczesny, 2014).

The subjective experience of *hen* ‘feeling’ unusual by users is also related to the concern that gender-neutral pronouns are disruptive and hard to understand. Linguists have long suggested that singular *they* may be ambiguous, conceptually unavailable, problem referents and vague (Mackay, 1980). However, there has been little evidence to support this, and this thesis provides evidence for the opposite. Study II revealed that, in simple sentence pairs, *hen* hardly had a processing cost. Furthermore, as observed in Study II and III, *hen* did not affect participants’ performance on memory and recognition task, nor did the tasks take more time to complete. This is surprising, as the belief that gender-neutral pronouns are difficult and distracting is common.

It is important to note that participants in Study II were relatively familiar with *hen*, and that processing costs may be more visible when a word is newer. In addition, participants were relatively young and had relatively positive attitudes towards *hen* in comparison with the general population. Further research is needed to investigate whether more difficult tasks and more representative samples lead to a greater processing cost of *hen*.

Hen reduces binary categorization

Gender-fair language planning has historically been motivated by the desire to reduce an androcentric bias in language (Liddicoat, 2011). Many words that are used generically to refer to individuals of all genders have been found to have masculine biases. Masculine words that are used generically, such as ‘mankind’ and ‘he’ have been found to more commonly lead to associations with men than with women (Moulton et al., 1978). Even supposedly neutral words, such as the Finnish gender-neutral pronoun *hän*, and nouns such as ‘applicant’ and ‘person’ have been found to more commonly lead to associations with men than with women (Engelberg, 2011; Lindqvist et al., 2020).

Gender-neutral pronouns are intended to be free of this androcentric bias. However, singular *they* has been found to have a masculine bias (Lindqvist et al., 2019). It is possible that neopronouns do have the potential to be free of a masculine bias. This thesis found some evidence for *hen* to function “as intended”, that is, without a tendency to be interpreted as masculine or feminine. In Study II, the main aim was to investigate the effect of different types of gender information on the processing of *hen*. An interaction between binary gender associated with a role noun and *hen* (e.g., a difference in processing cost between ‘the hairdresser... *hen*’ and ‘the carpenter... *hen*’) could have

indicated a gender bias in *hen*. For example, if ‘the carpenter... hen’ had less of a processing cost than ‘the hairdresser... hen’, this could indicate that *hen* is more closely associated to masculinity than femininity. Such a difference was not found. This finding seems to indicate that *hen* does not have a masculine bias, which is in line with previous research that has found that *hen* leads to equal associations to women and men (Lindqvist et al., 2019). However, the question whether *hen* increases the visibility of nonbinary gender identities in language remains unanswered.

More research is needed to establish whether *hen* is free from a masculine bias, gender-neutral, increases the mental representation of nonbinary individuals, and whether this association changes over time as it gradually replaces other generic forms. In addition to this, it is important that future research distinguishes between *hen*’s generic and specific form, about which more below.

Limitations and future directions

In addition to the suggestions made above, this thesis has opened up further opportunities for research on the attitudinal and cognitive effects of gender-neutral pronouns.

Individual differences in the processing of *hen*

In Study II, the effect of personal attitudes on the processing cost of *hen* were explored. The expectation was that personal attitudes, such as strongly identifying as a feminist, would affect the processing cost of *hen*. Unexpectedly, I found evidence for personal attitudes, such as strongly identifying as a feminist, not interacting with type of pronoun, but leading to a smaller processing cost in general. As the stimuli contained varying levels of gendered information (e.g., queen, carpenter, colleague), this could indicate that personal attitudes affect how gendered information is processed in general. For example, previous research has established that occupational titles can evoke associations with gender due to stereotypes (e.g., Irmen & Roßberg, 2004; Kennison & Trofe, 2003), which lead to interruptions in reading when encountering information incongruent with this stereotype (e.g., the carpenter... she). It is possible that such interruptions are less severe or absent for individuals who resist gender stereotypes. In addition to this, individuals who resist gender stereotypes may be interrupted by stereotypical gender information, for example referring to a carpenter of unknown gender as ‘he’. The relationship between personal factors and attitudes and their relationship to processing gender in language remains to be investigated further, especially considering the limitations of our sample, which had a relatively positive opinion of *hen*. This to further test the hypothesis that representing nonbinarity cognitively involves

an ‘intellectual commitment’, i.e., that an openness to gender identities not being limited to women and men is needed to cognitively represent gender as nonbinary, as suggested by Prasad et al. (2018).

The complexities of face categorization

Further evidence for individual differences in the processing of *hen* were found in Study III, where *hen* led to more participants reporting that they had not categorized the gender-ambiguous face, and these participants spending a similar amount of time looking at feminine and masculine faces. However, other participants did categorize the faces as a woman or a man. In addition to the evidence for the effect of pronouns on gender categorization, this study also indicates the different ways in which gender information is or is not integrated in gender categorization. In previous research, gender categorization has been measured either through explicit measures or implicit measures. By having access to both, I have found that linguistic cues affect gender categorization on a group level, but that there are individual differences in the categorization that is made. In addition to this, I found a relation between age and the gender of the distractor faces. Because both are results from exploratory analyses the study was not adequately powered for, further study is needed to investigate the interaction between gendered linguistic information and personal factors.

Methodological considerations

This thesis includes a variety of methods investigating the effect of the pronoun *hen*. The combination of qualitative and experimental methods provide a broad insight in the variety of psychological processes that take place in the processing of gender-neutral pronouns. In these studies, I employed a variety of methods, such as eye tracking and face recognition tasks. The studies have been based on paradigms used in previous research on the stereotypical content of role nouns and on the gender categorization of faces. The use of such paradigms has brought to light some conceptual and practical issues that are important to address in this thesis, as well as in future research studying gender-neutral pronouns and their mental representations.

The multiple uses of *hen*

Gender-neutral pronouns can be used generically and specifically (Renström et al., n.d.). *Hen* too can be used generically to refer to people of any gender, or specifically as a pronoun for nonbinary identities (Svenska Akademien, 2015). A limitation of the studies included in this thesis is that they have not

distinguished between these interpretations. Based on Study I, I cannot be certain that criticism of *hen* is identical for the generic use and the specific use, because participants were not asked to specify this. Some participants voluntarily offered this information in their arguments, sometimes expressing support for the generic use of *hen*, but being critical of its specific use, or the other way around. However, this was relatively rare. Renström et al. (n.d.) found that when participants were asked to give their opinion on the generic and the specific use of *hen*, their opinion was the same for both. However, when being asked to judge text with *hen* being used specifically or generically, there was a difference, such that specific *hen* was evaluated more negatively than generic *hen*. The same has been found for other gender-neutral pronouns, such as the English singular *they* (Bradley, Schmid, et al., 2019). Attitudes thus seem to differ for the specific and the generic use of *hen*, which requires further investigation.

In Study II and III, the intention was to use *hen* specifically, by having *hen* refer to a specific person, e.g., ‘the teacher’ in the sentences in Study II, or a specific face in Study III. However, participants were not asked whether they interpreted *hen* as a person with a binary gender identity whose gender was obscured, whether they interpreted *hen* as a person with a nonbinary identity, or whether they interpreted it as a misspelled *hon* or *han*. In a study in which the spontaneous use of *hen* was studied, participants more frequently used *hen* in a generic way than in a specific way (Renström et al., n.d.). Therefore, it is possible that in Study II and III, *hen* was mostly interpreted generically. In future research, it is important to ascertain what interpretation of *hen* is evoked in different contexts. The multiple meanings of *hen* differentiate in association with nonbinarity, and are related to personal attitudes in different ways. Strahan (2008) found that participants did not associate singular *they* in Australian English with political correctness when it was used in a context unrelated to a minority group, such as ‘toddlers’. Renström et al. (n.d.) found that traditionalism is related to attitudes towards and use of generic *hen*, and that binary gender beliefs are related to attitudes towards and use of specific *hen*. Because I have suggested the interaction between personal variables and the effect of *hen* is of interest, it is important to distinguish between these interpretations, as they may lead to different patterns of results.

Operationalizing gender-neutrality, nonbinarity and androgyny

In this thesis, the concept of gender-neutrality was explored from a semantic point of view; *hen* is considered gender-neutral because it does not contain binary gender information. However, as of yet, little is known about whether and how gender-neutrality is represented mentally when processing social information. Much has been written about social categorization being a ‘cognitive monster’ (Bargh, 1999), whose desire to structure the world is impossible

to suppress. It is currently unknown whether it is possible to postpone the binary gender categorization of others, and whether nonbinary can be its own category in gender categorization.

To develop this knowledge, it is important to carefully define and distinguish between terms such as ‘gender-neutral’, ‘nonbinary’ and ‘androgynous’. Some of these definitions have changed over time. The paired binary gender form *he or she* has been called ‘gender-neutral’ (Paterson, 2020), while with the rise of pronouns like singular *they* and *hen*, this term has become reserved for pronouns without binary gendered distinctions. However, while writing this thesis, a substantial amount of time has been spent considering whether to call *hen* a *gender-neutral* pronoun, because it touches upon the same question as defining gender identities; do we multi-gender by adding another gender category, or de-gender, and challenge the importance of gender altogether (Morgenroth & Ryan, 2018)?

Distinct definitions are important for testing the effect of gender-neutrality on cognition, for example in face perception paradigms employing gender-indistinct faces. Currently, neutral faces are operationalized in many different ways. Typically, the faces created are called androgynous, a term which implies the presence of both distinctive feminine and masculine characteristics. This term has been avoided in this thesis, as I would argue that the methods used to create “androgynous” faces rather lead to faces free from any distinctive feminine and masculine traits. I have therefore called these faces ‘neutral’ throughout this thesis.

To create neutral faces, some studies use real faces (e.g., Baudouin & Tiberghien, 2002; Walker & Vetter, 2016; Webster, Kaping, Mizokami, & Duhamel, 2004), while others use computer-generated faces (e.g., Todorov & Oosterhof, 2011). To create neutral faces, some morph feminine faces with masculine faces, and either use the middle point (50% feminine face, 50% masculine face) as the gender-indistinct face, or select morphs that are rated to be in the middle of a femininity/masculinity continuum by participants, often without disclosing proportions (e.g., Webster et al., 2004; Baudouin & Tiberghien, 2002; Huart et al., 2005). In other studies, femininity and masculinity vectors are developed and are applied to face spaces (e.g., Komori, Kawamura, & Ishihara, 2011). Some studies use real faces for their stimulus material (e.g., Baudouin & Tiberghien, 2002; Walker & Vetter, 2016; Webster et al., 2004), while others use computer-generated faces (e.g., Todorov & Oosterhof, 2011). In sum, there are many different ways in which stimulus materials are created, of which the implications for gender categorization are rarely discussed.

In Study III, the faces that were created with the intention of being gender indistinct, often were categorized as a woman. Multiple studies have documented that faces created to be gender-indistinct are not rated in the middle of a feminine-masculine continuum (e.g., Hoss, Ramsey, Griffin, & Langlois, 2005; Storrs & Arnold, 2012; Webster et al., 2004). It is possible that binary

gender categorization is unavoidable, but the way gender ambiguous faces have been operationalized may also play a role. The variety of these different approaches may also reveal a disconnect between the stimulus faces used in studies and how faces look in real life. In sum, clearer (and perhaps several distinct) definitions are needed for the concepts of gender-neutrality, gender-nonbinarity, and androgynity to be able to test the mental representation of these concepts.

Conclusion

In this thesis, I documented several aspects of the implementation of the gender-neutral pronoun *hen* in the Swedish language. I was especially interested in investigating the resistance against *hen*, and to investigate the effect of *hen* on social cognition. I found that arguments against gender-fair language are mostly universal, regardless of strategy, and that four underlying motivations can be distinguished. Furthermore, some of the arguments used against gender-fair language were tested experimentally. The argument given by opponents, that *hen* leads to a greater processing cost than its gendered counterparts *hon* and *han*, was not supported by the findings in this thesis. These findings add to the previously documented assets of gender-fair language. The argument given by proponents, that *hen* can reduce binary gender categorization was partly supported in a face recognition study. There are many more critical arguments towards gender-fair language that remain to be substantiated by empirical research.

Finally, I want to point out that while this empirical approach can establish whether gender-fair language is effective, unbiased and able to reduce gender categorization, it cannot answer the question that discussions on gender-fair language invariably lead to: Should we use *hen*? With the experiments conducted in Study II and III, I found evidence for *hen* not taking much of an effort to read, and that it may reduce the effect of gender categorization in face perception. Previous research has established the importance of pronouns for identity and inclusivity. But as established in Study I, there is much more to *hen* than simply establishing its efficacy and potential. Such evidence may not sway the participants who were critical of *hen* in Study I, because *hen* is not merely a question of maintaining an efficient language. It touches on how we believe language should look, the importance of gender in our social interactions, whether people believe language is a tool for achieving gender equality (if they desire to live in an egalitarian society at all), who decides who gets to be represented in language, and who ultimately gets represented in language. In the end, the future of a word is in the language users' hands and mouths. And despite the initial resistance, the use of gender-neutral pronouns continues increasing, and *hen* seems here to stay.

Acknowledgements

First of all, I would like to thank my supervisor Marie Gustafsson Sendén, who has been my academic mentor. We first met in 2015 during one of your lectures, where you made a great impression on me. After the lecture, I approached you to ask if I (please, please, please!) could become your research assistant. I am proud of all the work we have done together. You have been eternally patient with my long windy sentences, stubbornness, Swenglish and Dunglish. You have always been empathic, and have always come from one of these rare places in which kindness and competence co-exist.

My second word of thanks goes to Håkan Fischer, for creating this opportunity and being there throughout the whole journey with a great amount of good energy.

My third word of thanks goes to my third supervisor, Philip Pärnamets, for your *Karate Kid* style of teaching me R, eye-tracking, and multilevel modelling. There is still a lot left to learn, but you have definitely made R a lot less scary.

Thanks to Anna Lindqvist, Emma Renström, Amanda Klysing, Elli van Berlekom, Lotta Stille, Nazli Ceren Koç and Sofia Bracco for being a great research group that truly tries to ‘walk the talk’. I could not have asked for a better academic nest to grow up in. Marie, Anna and Emma—thanks for creating this hub in the academic desert around a brief, three-letter word.

Amanda, for your wisdom, support, and exactly the right GIFs when they were needed most. I’ll never forget the month we spent in a daze of statistics and sangria in Ann Arbor. Looking forward to getting your autograph on your first critical article.

Elli, for all the Zoom calls the last 1.5 years. They have helped a lot with pretending I’m not writing my dissertation in the middle of a pandemic.

John Axelsson, Bianka Karshikoff and Tina Sundelin—thank you for being the first research group I got to be part of. Thank you for planting the first seed of the journey to my PhD.

Thekla Morgenroth for the collaboration on a wonderfully nerdy social psychology project, and the time I got to spend in Exeter.

Torun Lindholm and Una Tellhed, many thanks for the valuable comments for improvements and encouraging words on an earlier version of this thesis.

Thanks to all colleagues at the Department of Psychology, in particular my PhD student siblings¹⁷, for the chats, lunches, walks, conferences, heart-to-hearts, discussions, games, badminton, climbing and fun during our collective academic growing pains. Special thanks to Miriam, for being there through thick and thin (and getting me on the climbing wall), Marta, for combining two of the best things in life: chats and climbing (well, technically not chatting *while* climbing), Lichen, for being a plain ol' lovable GIF-slinging nerd (correction: highly respected leader), Lillian, for your wisdom on the Roslagsbana (and wine), Diana, for your warmth and honesty (and wine), Anna, for your contagious 'let's do this!' attitude (and wine), Sophia, for OU, Freja, for being generous with your kindness, Andreas, for being a rock in the stormy seas (even if your feet were also pedaling wildly beneath the surface), Louise, for your openness and our shared love of cats and plants, Joanna, for all your straight-shooting a Dutch person needs, Philip, for that time you covered my office in pictures of my face together with Lichen, Carlos, for showing me MMA on YouTube, Joel for co-parenting me with Diana during my first conference in Vienna, and Nichel and Sebastian for being my weird (I mean wise) PhD uncles in the corridor on the Frescati Hagväg.

Thanks to all my family and 'real life' friends (as academia is *definitely* a medieval time simulation) for being there. Harry, for one of those mythical friendships that somehow persist, even on long distance and with intermissions. Maritta and Mats, for the space to start and finish writing on this dissertation next to a window with a view of wonderful Vemdalen. Thanks to all my beloved climbing, cycling, gaming and book club buddies for the much-needed distraction!

Thanks to *mam* and *pap* for the privilege of studying being self-evident and encouraged, and for providing me with the love to see me through this journey, all the way to my PhD. *Ich haaj van uch*. Tim, my most beloved (and perhaps only) sibling, for being my very first rival in life, and nowadays a dear life companion always encouraging me to keep the thinking noodle (and biking legs) well-oiled. Markus, for being there a big part of the way. And lastly, my dearest Joakim for seeing me through to the end of my PhD and hopefully far beyond.

¹⁷ Including to-be PhD students and PhD's

References

- Allport, G. W. (1954). *The nature of prejudice*. Addison-Wesley.
- Ambjörnsson, F. (2010). Att ta plats – motståndsstrategier [Taking space - resistance strategies]. In Ungdomsstyrelsen (Ed.), *Hon, hen, han: En analys av hälsosituationen för homosexuella och bisexuella ungdomar samt för unga transpersoner* (pp. 53–78).
- American Psychological Association. (2009). *Publication manual of the American Psychological Association, 6th ed.* American Psychological Association.
- Andersen, S. M., Klatzky, R. L., & Murray, J. (1990). Traits and social stereotypes: Efficiency differences in social information processing. *Journal of Personality and Social Psychology, 59*(2), 192–201. <https://doi.org/10.1037/0022-3514.59.2.192>
- Andersson, L. (2020). *Att hitta hen: Ickebinära personers upplevelser av ett könsneutralt pronomen [Finding hen: Nonbinary persons experiences of a gender-neutral pronoun]*. Stockholm University.
- Ansara, Y. G. (2016). *Making the count: Addressing data integrity gaps in Australian standards for collecting sex and gender information* (Issue March). National LGBTI Health Alliance. www.lgbtihealth.org.au
- Ansara, Y. G., & Hegarty, P. (2012). Cisgenderism in psychology: Pathologising and misgendering children from 1999 to 2008. *Psychology and Sexuality, 3*(2), 137–160. <https://doi.org/10.1080/19419899.2011.576696>
- Ansara, Y. G., & Hegarty, P. (2014). Methodologies of misgendering: Recommendations for reducing cisgenderism in psychological research. *Feminism and Psychology, 24*(2), 259–270. <https://doi.org/10.1177/0959353514526217>
- Ansara, Y. G., & Hegarty, P. (2016). Misgendering in English language contexts: Applying non-cisgenderist methods to feminist research. *International Journal of Multiple Research Approaches, 7*(2), 160–177. <https://doi.org/10.5172/mra.2013.7.2.160>
- Arnold, J. E. (2010). How speakers refer: The role of accessibility. *Linguistics and Language Compass, 4*(4), 187–203. <https://doi.org/10.1111/j.1749-818X.2010.00193.x>
- Asarina, A. (2009). Gender and adjective agreement in Russian. *The 4th Annual Meeting of the Slavic Linguistics Society, 1*.
- Bäck, E. A., Lindqvist, A., & Gustafsson Sendén, M. (2018). *Hen. Bakgrund, attityder och användande [Hen: Background, attitudes and use]* (Vol. 8, Issue 1). https://www.psy.lu.se/sites/psy.lu.se/files/plr_1801.pdf
- Bäck, E., Lindqvist, A., & Gustafsson Sendén, M. (2015). Hen can do it!

Effects of using a gender-neutral pronoun in recruitment. In J. Magnusson, K. Milles, & Z. Nikolaidou (Eds.), *Könskonstruktioner och Språkförändringar: En rapport från den åttonde nordiska konferensen om språk och kön [Gender constructions and language change: Report from the 8th Nordic Conference on Language and Gender]* (pp. 71–90). Södertörn University.

- Bailey, A. H., Dovidio, J. F., & LaFrance, M. (2021). “Master” of none: Institutional language change linked to reduced gender bias. *Journal of Experimental Psychology: Applied*, Advance online publication. <https://doi.org/https://doi.org/10.1037/xap0000326>
- Banaji, M. R., & Hardin, C. D. (1996). Automatic stereotyping. *Psychological Science*, 7(3), 136–141. <https://doi.org/10.1111/j.1467-9280.1996.tb00346.x>
- Bargh, J. A. (1999). The cognitive monster: The case against the controllability of automatic stereotype effects. In S. Chaiken & Y. Trope (Eds.), *Dual-process theories in social psychology* (pp. 361–382). The Guilford Press.
- Barker, M.-J., & Richards, C. (2015). Further genders. In C. Richards & M.-J. Barker (Eds.), *Handbook of the psychology of sexuality and gender* (pp. 166–182). Palgrave Macmillan.
- Bates, E., Devescovi, A., Hernandez, A., & Pizzamiglio, L. (1996). Gender priming in Italian. *Perception and Psychophysics*, 58(7), 992–1004. <https://doi.org/10.3758/BF03206827>
- Baudouin, J. Y., & Tiberghien, G. (2002). Gender is a dimension of face recognition. *Journal of Experimental Psychology: Learning Memory and Cognition*, 28(2), 362–365. <https://doi.org/10.1037/0278-7393.28.2.362>
- Bem, S. L. (1993). *The lenses of gender: Transforming the debate on sexual inequality*. Yale University Press.
- Bem, S. L., & Bem, D. J. (1973). Does sex-biased job advertising “aid and abet” sex discrimination? *Journal of Applied Social Psychology*, 3(1), 6–18. <https://doi.org/10.1111/j.1559-1816.1973.tb01290.x>
- Bengoechea, M. (2011). Non-sexist Spanish policies: An attempt bound to fail? *Current Issues in Language Planning*, 12(1), 35–53. <https://doi.org/10.1080/14664208.2010.541389>
- Beukeboom, C. J., & Burgers, C. (2019). How stereotypes are shared through language: A review and introduction of the Social Categories and Stereotypes Communication (SCSC) framework. *Review of Communication Research*, 7, 1–37. <https://doi.org/10.12840/issn.2255-4165.017>
- Beukeboom, C. J., Finkenauer, C., & Wigboldus, D. H. J. (2010). The negation bias: When negations signal stereotypic expectancies. *Journal of Personality and Social Psychology*, 99(6), 978–992. <https://doi.org/10.1037/a0020861>
- Bigler, R. S., & Leaper, C. (2015). Gendered language: Psychological principles, evolving practices, and inclusive policies. *Policy Insights from the Behavioral and Brain Sciences*, 2(1), 187–194.

- <https://doi.org/10.1177/2372732215600452>
- Bivens, R. (2017). The gender binary will not be deprogrammed: Ten years of coding gender on Facebook. *New Media and Society*, 19(6), 880–898. <https://doi.org/10.1177/1461444815621527>
- Black, K. N., & Stevenson, M. R. (1984). The relationship of self-reported sex-role characteristics and attitudes toward homosexuality. *Journal of Homosexuality*, 10(1–2), 83–93. https://doi.org/10.1300/J082v10n01_06
- Blaubergs, M. S. (1978). Changing the sexist language: The theory behind the practice. *Psychology of Women Quarterly*, 2(3), 244–261. <https://doi.org/10.1111/j.1471-6402.1978.tb00506.x>
- Blaubergs, M. S. (1980). An analysis of classic arguments against changing sexist language. *Women's Studies International Quarterly*, 3, 135–147. [https://doi.org/10.1016/S0148-0685\(80\)92071-0](https://doi.org/10.1016/S0148-0685(80)92071-0)
- Bodenhausen, G. V., & Gawronski, B. (2012). Attitude change. In D. Reisberg (Ed.), *The Oxford handbook of cognitive psychology* (pp. 957–969). Oxford University Press. <https://doi.org/10.1016/B978-0-12-375000-6.00040-9>
- Bodenhausen, G. V., Kang, S. K., & Peery, D. (2012). Social categorization and the perception of social groups. In S. T. Fiske & C. N. Macrae (Eds.), *Sage handbook of social cognition* (pp. 311–329). SAGE.
- Bodine, A. (1975). Androcentrism in prescriptive grammar: Singular “they”, sex-indefinite “he”, and “he or she.” *Language in Society*, 4(2), 129–146. <https://doi.org/10.1017/S0047404500004607>
- Bojarska, K. (2011). Influence of androcentric and gender-inclusive lexical constructions on gender-associated responses. *Studia Psychologiczne*, 49(2), 53–68.
- Bojarska, K. (2013). Responding to lexical stimuli with gender associations: A cognitive-cultural model. *Journal of Language and Social Psychology*, 32(1), 46–61. <https://doi.org/10.1177/0261927X12463008>
- Boroditsky, L., Fuhrman, O., & McCormick, K. (2011). Do English and Mandarin speakers think about time differently? *Cognition*, 118(1), 123–129. <https://doi.org/10.1016/j.cognition.2010.09.010>
- Boskey, E. R. (2014). Understanding transgender identity development in childhood and adolescence. *American Journal of Sexuality Education*, 9(4), 445–463. <https://doi.org/10.1080/15546128.2014.973131>
- Boutonnet, B., Athanasopoulos, P., & Thierry, G. (2012). Unconscious effects of grammatical gender during object categorisation. *Brain Research*, 1479, 72–79. <https://doi.org/10.1016/j.brainres.2012.08.044>
- Bradley, E. D., Salkind, J., Moore, A., & Teitsort, S. (2019). Singular ‘they’ and novel pronouns: gender-neutral, nonbinary, or both? *Proceedings of the Linguistic Society of America*, 4(1), 36. <https://doi.org/10.3765/plsa.v4i1.4542>
- Bradley, E. D., Schmid, M., & Lombardo, H. (2019). Personality, prescriptivism, and pronouns. *English Today*, 35(4), 41–52. <https://doi.org/10.1017/S0266078419000063>
- Braun, F., Sczesny, S., & Stahlberg, D. (2005). Cognitive effects of masculine

- generics in German: An overview of empirical findings. *Communications*, 30(1), 1–21. <https://doi.org/10.1515/comm.2005.30.1.1>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(3), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Brewer, M. B., & Gardner, W. (1996). Who is this “we”? Levels of collective identity and self representations. *Journal of Personality and Social Psychology*, 71(1), 83–93. [https://doi.org/10.1016/0032-3861\(83\)90219-7](https://doi.org/10.1016/0032-3861(83)90219-7)
- Briere, J., & Lanktree, C. (1983). Sex-role related effects of sex bias in language. *Sex Roles*, 9(5), 625–632. <https://doi.org/10.1007/BF00290069>
- Broussard, K. A., & Warner, R. H. (2018). Gender nonconformity is perceived differently for cisgender and transgender targets. *Sex Roles*. <https://doi.org/10.1007/s11199-018-0947-z>
- Budziszewska, M., Hansen, K., & Bilewicz, M. (2014). Backlash over gender-fair language: The impact of feminine job titles on men’s and women’s perception of women. *Journal of Language and Social Psychology*, 33(6), 681–691. <https://doi.org/10.1177/0261927X14544371>
- Bybee, J. (2015). *Language change*. Cambridge University Press.
- Cacciari, C., Carreiras, M., & Cionini, C. B. (1997). When words have two genders: Anaphor resolution for Italian functionally ambiguous words. *Journal of Memory and Language*, 37(4), 517–532. <https://doi.org/10.1006/jmla.1997.2528>
- Carreiras, M., Garnham, A., Oakhill, J., & Cain, K. (1996). The use of stereotypical gender information in constructing a mental model: Evidence from English and Spanish. *The Quarterly Journal of Experimental Psychology*, 49A(3), 639–663.
- Chen, J. Y., & Su, J. J. (2011). Differential sensitivity to the gender of a person by English and Chinese speakers. *Journal of Psycholinguistic Research*, 40(3), 195–203. <https://doi.org/10.1007/s10936-010-9164-9>
- Claeson, E., & Salemark, N. (2012, March 8). Chatduell om svenskans tredje pronomen [Chat duel about Swedish’s third pronoun]. *Svenska Dagbladet*. <https://www.svd.se/chatt-om-ordet-hen>
- Clements-Nolle, K., Marx, R., & Katz, M. (2008). Attempted suicide among transgender persons: The influence of gender-based discrimination and victimization. *Journal of Homosexuality*, 8369(3), 53–69. https://doi.org/10.1300/J082v51n03_04
- Clyne, M., Norrby, C., & Warren, J. (2009). *Language and human relations: Styles of address in contemporary language*. Cambridge University Press.
- Corbett, G. G. (1991). *Gender*. Cambridge University Press.
- Corbett, G. G. (2013a). Number of genders. In M. S. Dryer & M. Haspelmath (Eds.), *The world atlas of language structures online*. Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/30>
- Corbett, G. G. (2013b). Sex-based and non-sex based gender systems. In *The*

- World Atlas of Language Structures Online*. Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/31>
- Cunnings, I., Patterson, C., & Felsler, C. (2014). Variable binding and coreference in sentence comprehension: Evidence from eye movements. *Journal of Memory and Language*, 71(1), 39–56. <https://doi.org/10.1016/j.jml.2013.10.001>
- Darr, B., Kibbey, T., & Huth, T. (2016). Pronouns and thoughts on neutrality: Gender concerns in modern grammar. *Article*, 7(1), 71–84. <http://trace.tennessee.edu/pursuit/vol7/iss1/10>
- Darwin, H. (2020). Challenging the cisgender/transgender binary: Nonbinary people and the transgender label. *Gender and Society*, 34(3), 357–380. <https://doi.org/10.1177/0891243220912256>
- Davis, J. L., Zimman, L., & Raclaw, J. (2014). Opposites attract: Retheorizing binaries in language, gender, and sexuality. In L. Zimman, J. Davis, & J. Raclaw (Eds.), *Queer Excursions: Retheorizing Binaries in Language, Gender, and Sexuality* (pp. 1–10). Oxford University Press.
- de Lemus, S., & Estevan-Reina, L. (2021). Influence of sexist language on motivation and feelings of ostracism. *International Journal of Social Psychology*, 36(1), 61–97.
- DeFranza, D., Mishra, H., & Mishra, A. (2020). How language shapes prejudice against women: An examination across 45 world languages. *Journal of Personality and Social Psychology*, 119(1), 7–22. <https://doi.org/10.1037/pspa0000188>
- del Caño, M. (2019). *Language, queerly phrased: A sociolinguistic examination of nonbinary gender identity in French*. State University of New York at New Paltz.
- Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, 56(1), 5–18. <https://doi.org/10.1037//0022-3514.56.1.5>
- Dijksterhuis, A., & Van Knippenberg, A. (1996). The knife that cuts both ways: Facilitated and inhibited access to traits as a result of stereotype activation. *Journal of Experimental Social Psychology*, 32(3), 271–288. <https://doi.org/10.1006/jesp.1996.0013>
- Doğançay-Aktuna, S. (1997). Language planning. In N. H. Hornberger & D. Corson (Eds.), *Encyclopedia of Language and Education: Research Methods in Language and Education* (pp. 15–24). Springer Netherlands. https://doi.org/10.1007/978-94-011-4535-0_2
- Douglas, K. M., & Sutton, R. M. (2014). "A giant leap for mankind", but what about women? The role of system-justifying ideologies in predicting attitudes toward sexist language. *Journal of Language and Social Psychology*, 33, 667–680. <https://doi.org/10.1177/0261927X14538638>
- Dovidio, J. F., Hewstone, M., Glick, P., & Esses, V. M. (2010). *The SAGE handbook of prejudice, stereotyping and discrimination*. SAGE.
- Duffy, S. A., & Keir, J. a. (2004). Violating stereotypes: eye movements and comprehension processes when text conflicts with world knowledge. *Memory & Cognition*, 32(4), 551–559. <https://doi.org/10.3758/BF03195846>

- Dunås, R. (1966, November 30). Han eller hon [He or she]. *Uppsala Nya Tidning*.
- Eagly, A. H. (1987). *Sex differences in social behavior: A social-role interpretation*. Lawrence Erlbaum.
<https://doi.org/10.4324/9780203781906>
- Eagly, A. H., & Steffen, V. J. (1984). Gender stereotypes stem from the distribution of women and men into social roles. *Journal of Personality and Social Psychology*, 46(4), 735–754. <https://doi.org/10.1037/0022-3514.46.4.735>
- Eddy, M., & Bennett, J. (2017, November 8). Germany must allow third gender category, court rules. *The New York Times*.
<https://www.nytimes.com/2017/11/08/world/europe/germany-third-gender-category-vanja.html>
- Edlund, A. (2004). Kan män vara sjuksköterskor och kvinnor brandmän? Om sambandet mellan yrkesbeteckningar och kön [Can men be nurses and women firefighters? On the relation between job titles and gender]. In *Den könsuppdelade arbetsmarknaden : Betänkande av utredningen om den könssegregerade svenska arbetsmarknaden* (pp. 263–280). Fritzes.
<http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-25410%0A>
- Ehrlich, S., & King, R. (1992). Gender-based language reform and the social construction of meaning. *Discourse & Society*, 3(2), 151–166.
- Engelberg, M. (2011). “Hän” – Kuinka sukupuolineutraali? [Genderless third person singular pronoun “hän” in the Finnish language - how genderless is it?]. *Kvinnoforskning*, 3, 21–32.
- Esaulova, Y., Reali, C., & von Stockhausen, L. (2013). Influences of grammatical and stereotypical gender during reading: Eye movements in pronominal and noun phrase anaphor resolution. *Language, Cognition and Neuroscience*, 29(7), 1–23.
<https://doi.org/10.1080/01690965.2013.794295>
- European Commission. (2007). *Treaty of Lisbon*.
<https://www.europarl.europa.eu/about-parliament/en/in-the-past/the-parliament-and-the-treaties/treaty-of-lisbon>
- Fausto-sterling, A. (2005). The bare bones of sex: Sex and gender. *Signs: Journal of Women in Culture & Society*, 30(2), 1491–1527.
<https://doi.org/10.4324/9780203895658-25>
- Fiedler, K. (2008). A toolbox for sharing and influencing social reality. *Psychological Science*, 3(1), 38–47. <https://doi.org/10.1111/j.1745-6916.2008.00060.x>
- Fiske, S. T. (2004). Intent and ordinary bias: Unintended thought and social motivation create casual prejudice. *Social Justice Research*, 17(2), 117–127. <https://doi.org/10.1023/B:SORE.0000027405.94966.23>
- Fiske, S. T., & Neuberg, S. L. (1990). A continuum of impression formation, from category-based to individuating processes: Influences of information and motivation on attention and interpretation. *Advances in Experimental Social Psychology*, 23, 1–74.
[https://doi.org/10.1016/S0065-2601\(08\)60317-2](https://doi.org/10.1016/S0065-2601(08)60317-2)
- Fiske, S. T., & Taylor, S. E. (2008). *Social cognition: From brains to culture*

(2nd Editio). Sage Publications.

- Fodor, I. (1959). The origin of grammatical gender. *Lingua*, 8(1959), 186–214. [https://doi.org/10.1016/0024-3841\(59\)90020-8](https://doi.org/10.1016/0024-3841(59)90020-8)
- Foertsch, J., & Gernsbacher, M. A. (1997). In search of gender neutrality: Is singular they a cognitively efficient substitute for generic he? *Psychological Science*, 8(2), 106–111. <https://doi.org/10.1111/j.1467-9280.1997.tb00691.x>
- Formanowicz, M. M., Bedynska, S., Cislak, A., Braun, F., & Sczesny, S. (2013). Side effects of gender-fair language: How feminine job titles influence the evaluation of female applicants. *European Journal of Social Psychology*, 43(1), 62–71. <https://doi.org/10.1002/ejsp.1924>
- Formanowicz, M., Roessel, J., Suitner, C., & Maass, A. (2017). Verbs as linguistic markers of agency: The social side of grammar. *European Journal of Social Psychology*, 47(5), 566–579. <https://doi.org/10.1002/ejsp.2231>
- Frank, M. C., Everett, D. L., Fedorenko, E., & Gibson, E. (2008). Number as a cognitive technology: Evidence from Pirahã language and cognition. *Cognition*, 108(3), 819–824. <https://doi.org/10.1016/j.cognition.2008.04.007>
- Fremer, M. (2018). *Tilltal i reklamfilm: Du-reformen i ett historiskt perspektiv*. University of Helsinki.
- Gabriel, U., & Gygax, P. M. (2008). Can societal language amendments change gender representation? The case of Norway. *Scandinavian Journal of Psychology*, 49(5), 451–457. <https://doi.org/10.1111/j.1467-9450.2008.00650.x>
- Gabriel, U., Gygax, P. M., & Kuhn, E. A. (2018). Neutralising linguistic sexism: Promising but cumbersome? *Group Processes and Intergroup Relations*, 21(5), 844–858. <https://doi.org/10.1177/1368430218771742>
- Gabriel, U., Gygax, P. M., Sarrasin, O., Garnham, A., & Oakhill, J. (2008). Au pairs are rarely male: Norms on the gender perception of role names across English, French, and German. *Behavior Research Methods*, 40(1), 206–212. <https://doi.org/10.3758/BRM.40.1.206>
- Garnham, A., Doehren, S., & Gygax, P. M. (2015). True gender ratios and stereotype rating norms. *Frontiers in Psychology*, 6, 1–7. <https://doi.org/10.3389/fpsyg.2015.01023>
- Garnham, A., Oakhill, J., & Reynolds, D. J. (2002). Are inferences from stereotyped role names to characters' gender made elaboratively? *Memory & Cognition*, 30(3), 439–446. <https://doi.org/10.3758/BF03194944>
- Garnham, A., Oakhill, J., von Stockhausen, L., & Sczesny, S. (2016). Language, cognition, and gender. *Frontiers in Psychology*, 7, 772. <https://doi.org/10.3389/fpsyg.2016.00772>
- Gastil, J. (1990). Generic pronouns and sexist language: The oxymoronic character of masculine generics. *Sex Roles*, 23(11–12), 629–643. <https://doi.org/10.1007/BF00289252>
- Gates, G. J. (2011). *How many people are lesbian, gay, bisexual, and transgender?* UCLA Williams Institute.

<https://williamsinstitute.law.ucla.edu/publications/how-many-people-lgbt/>

- Gaucher, D., Friesen, J., & Kay, A. C. (2011). Evidence that gendered wording in job advertisements exists and sustains gender inequality. *Journal of Personality and Social Psychology*, *101*(1), 109–128. <https://doi.org/10.1037/a0022530>
- Gerritsen, M. (2002). Language and gender in Netherlands Dutch: Towards a more gender-fair usage. In M. Hellinger & H. Bußmann (Eds.), *Gender across languages: The linguistic representation of women, Volume 3* (Issue May, pp. 81–108). John Benjamins Publishing Company. <https://doi.org/10.1075/impact.10.10ger>
- Glen, F., & Hurrell, K. (2012). *Technical note: Measuring gender identity*. Equality & Human Rights Commission.
- GLOBE 2020. (2021). <https://globeproject.com/>
- Graesser, A. C., Singer, M., & Trabasso, T. (1994). Constructing inferences during narrative text comprehension. *Psychological Review*, *101*(3), 371–395. <https://doi.org/10.1037/0033-295x.101.3.371>
- Grahn, I.-L. (2006). *Vem är den? En enkätstudie om känslan för pronomenet den med animat generisk syftning [Who is “den”? A questionnaire study on the attitudes towards the pronoun “den” with animated generic purpose]*. Gothenburg University.
- Grönblad, F. (2007). Hen kan fylla en språklig lucka [Hen can fill a linguistic gap]. *Språktidningen*, 26–29. <https://spraktidningen.se/artiklar/2007/11/hen-kan-fylla-spraklig-lucka>
- Gustafsson Sendén, M., Bäck, E. A., & Lindqvist, A. (2015). Introducing a gender-neutral pronoun in a natural gender language: the influence of time on attitudes and behavior. *Frontiers in Psychology*, *6*, 1–12. <https://doi.org/10.3389/fpsyg.2015.00893>
- Gustafsson Sendén, M., Renström, E. A., & Lindqvist, A. (2021). Pronouns beyond the binary: The change of attitudes and use over time. *Gender & Society*, *XX*(X), 1–28. <https://doi.org/10.1177/08912432211029226>
- Gygax, P. M., Elmiger, D., Zufferey, S., Garnham, A., Sczesny, S., von Stockhausen, L., Braun, F., & Oakhill, J. (2019). A language index of grammatical gender dimensions to study the impact of grammatical gender on the way we perceive women and men. *Frontiers in Psychology*, *10*, 1–6. <https://doi.org/10.3389/fpsyg.2019.01604>
- Gygax, P. M., Gabriel, U., Sarrasin, O., Oakhill, J., & Garnham, A. (2008). Generically intended, but specifically interpreted: When beauticians, musicians, and mechanics are all men. *Language and Cognitive Processes*, *23*(3), 464–485. <https://doi.org/10.1080/01690960701702035>
- Gygax, P. M., Gabriel, U., & Zufferey, S. (2019). Le masculin et ses multiples sens : Un problème pour notre cerveau... et notre société [The masculine and its multiple meanings: A problem for our brain... and our society]. *Savoirs En Prisme*, *10*, e-publication.
- Gygax, P. M., Sato, S., Öttl, A., & Gabriel, U. (2021). The masculine form in grammatically gendered languages and its multiple interpretations: a

- challenge for our cognitive system. *Language Sciences*, 83, 101328. <https://doi.org/10.1016/j.langsci.2020.101328>
- Gygax, P. M., Schoenhals, L., Lévy, A., Luethold, P., & Gabriel, U. (2019). Exploring the onset of a male-biased interpretation of masculine generics among french speaking kindergarten children. *Frontiers in Psychology*, 10, 1225. <https://doi.org/10.3389/fpsyg.2019.01225>
- Haertlé, I. (2017). Does grammatical gender influence perception? A study of Polish and French speakers. *Psychology of Language and Communication*, 21(1), 386–407. <https://doi.org/10.1515/plc-2017-0019>
- Hamilton, M. C., Hunter, B., & Stuart-Smith, S. (1992). Jury instructions worded in the masculine generic: Can a woman claim self-defence when “he” is threatened? In J. C. Christer & D. Howard (Eds.), *New directions in feminist psychology: Practice, theory and research* (pp. 169–178). Springer.
- Hegarty, P. (2017). *A recent history of lesbian and gay psychology: From homophobia to LGBT*. Routledge.
- Hegarty, P., Ansara, Y. G., & Barker, M.-J. (2018). Nonbinary gender identities. In N. K. Dess, J. Marecek, & L. C. Bell (Eds.), *Gender, sex, and sexualities: Psychological perspectives*. Oxford University Press.
- Hegarty, P., & Buechel, C. (2006). Androcentric reporting of gender differences in APA Journals: 1965-2004. *Review of General Psychology*, 10(4), 377–389. <https://doi.org/10.1037/1089-2680.10.4.377>
- Hegarty, P., Watson, N., Fletcher, L., & McQueen, G. (2011). When gentlemen are first and ladies are last: effects of gender stereotypes on the order of romantic partners’ names. *British Journal of Social Psychology*, 50, 21–35. <https://doi.org/10.1348/014466610X486347>
- Hekanaho, L. (2020). *Generic and nonbinary pronouns: Usage, acceptability and attitudes*. University of Helsinki.
- Hellinger, M. (2001). English - Gender in a global language. In M. Hellinger & H. Bußmann (Eds.), *Gender across languages: The linguistic representation of women, Volume 1* (pp. 105–113). John Benjamin’s Publishing Company.
- Hens uppgång har nått hovrätten [The rise of hen has reached the Court of Appeal]. (2012, December 14). *Språktidningen*. <https://spraktidningen.se/blogg/hens-uppgang-har-natt-hovratten>
- Hicks, D. L., Santacreu-Vasut, E., & Shoham, A. (2015). Does mother tongue make for women’s work? Linguistics, household labor, and gender identity. *Journal of Economic Behavior and Organization*, 110, 19–44. <https://doi.org/10.1016/j.jebo.2014.11.010>
- Higgins, E. T., & Rholes, W. S. (1978). “Saying is believing”: memory and liking for the person described. *Journal of Experimental Social Psychology*, 14, 363–378. [https://doi.org/10.1016/0022-1031\(78\)90032-X](https://doi.org/10.1016/0022-1031(78)90032-X)
- Himanen, R. (1990). *Kvinnliga ombudsmän och manliga sjuksköterskor: Titlar och yrkesbeteckningar i nusvensk dagspress [Female ombudsmen and male nurses: Titles and occupational titles in the modern Swedish daily press]*. Hallgren & Fallgren Studieförlag.

- Hornscheidt, A. (2003). Linguistic and public attitudes towards gender in Swedish. In M. Hellinger & H. Bussman (Eds.), *Gender across Languages: The Linguistic Representation of Women and Men* (pp. 339–368). J. Benjamins.
- Horvath, L. K., Merkel, E. F., Maass, A., & Sczesny, S. (2016). Does gender-fair language pay off? The social perception of professions from a cross-linguistic perspective. *Frontiers in Psychology, 6*, 1–12. <https://doi.org/10.3389/fpsyg.2015.02018>
- Horvath, L. K., & Sczesny, S. (2015). Reducing women's lack of fit with leadership positions? Effects of the wording of job advertisements. *European Journal of Work and Organizational Psychology, 25:2*, 316–328. <https://doi.org/10.1080/1359432X.2015.1067611>
- Hoss, R. A., Ramsey, J. L., Griffin, A. M., & Langlois, J. H. (2005). The role of facial attractiveness and facial masculinity/femininity in sex classification of faces. *Perception, 34*(12), 1459–1474. <https://doi.org/10.1068/p5154>
- House, R. J., Hanges, P. J., Javidan, M., & Dorfman, P. W. (2004). *Culture Leadership and Organizations: The GLOBE Study of 62 Societies*. Sage.
- Huart, J., Corneille, O., & Becquart, E. (2005). Face-based categorization, context-based categorization, and distortions in the recollection of gender ambiguous faces. *Journal of Experimental Social Psychology, 41*(6), 598–608. <https://doi.org/10.1016/j.jesp.2004.10.007>
- Hugenberg, K., & Sacco, D. F. (2008). Social categorization and stereotyping: How social categorization biases person perception and face memory. *Social and Personality Psychology Compass, 2*(2), 1052–1072. <https://doi.org/10.1111/j.1751-9004.2008.00090.x>
- Hyde, J. S., Bigler, R. S., Joel, D., Tate, C. C., & van Anders, S. M. (2019). The future of sex and gender in psychology: Five challenges to the gender binary. *American Psychologist, 74*(2), 171–193. <https://doi.org/10.1037/amp0000307>
- Irmen, L., & Kurovskaja, J. (2010). On the semantic content of grammatical gender and its impact on the representation of human referents. *Experimental Psychology, 57*(5), 367–375. <https://doi.org/10.1027/1618-3169/a000044>
- Irmen, L., & Roßberg, N. (2004). Gender markedness of language: The impact of grammatical and nonlinguistic information on the mental representation of person information. *Journal of Language and Social Psychology, 23*(3), 272–307. <https://doi.org/10.1177/0261927X04266810>
- Jakobson, R. (1966). On linguistic aspects of translation. In R. A. Bower (Ed.), *On translation* (pp. 232–239). Oxford University Press.
- Johnson, K. C., LeBlanc, A. J., Dearthoff, J., & Bockting, W. O. (2020). Invalidation experiences among non-binary adolescents. *Journal of Sex Research, 57*(2), 222–233. <https://doi.org/10.1080/00224499.2019.1608422>
- Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A decade of system justification theory: Accumulated evidence of conscious and

- unconscious bolstering of the status quo. *Political Psychology*, 25(6), 881–919. <https://doi.org/10.1111/j.1467-9221.2004.00402.x>
- Karraker, K. H., Vogel, D. A., & Lake, M. A. (1995). Parents' gender-stereotyped perceptions of newborns: The eye of the beholder revisited. *Sex Roles*, 33(9–10), 687–701. <https://doi.org/10.1007/BF01547725>
- Katz-Wise, S. L., & Hyde, J. S. (2012). Victimization experiences of lesbian, gay, and bisexual individuals: A meta-analysis. *Journal of Sex Research*, 49(2–3), 142–167. <https://doi.org/10.1080/00224499.2011.637247>
- Kennison, S. M., & Trofe, J. L. (2003). Comprehending pronouns: A role for word-specific gender stereotype information. *Journal of Psycholinguistic Research*, 32(3), 355–378. <https://doi.org/10.1023/A:1023599719948>
- Kesebir, S. (2017). Word order denotes relevance differences: The case of conjoined phrases with lexical gender. *Journal of Personality and Social Psychology*, 113(2), 262–279. <https://doi.org/10.1037/pspi0000094>
- Khan, M., & Daneman, M. (2011). How readers spontaneously interpret man-suffix words: Evidence from eye movements. *Journal of Psycholinguistic Research*, 40(5), 351–366. <https://doi.org/10.1007/s10936-011-9173-3>
- Koeser, S., Kuhn, E. A., & Sczesny, S. (2015). Just reading? How gender-fair language triggers readers' use of gender-fair forms. *Journal of Language and Social Psychology*, 34(3), 343–357. <https://doi.org/10.1177/0261927X14561119>
- Koeser, S., & Sczesny, S. (2014). Promoting gender-fair language: The impact of arguments on language use, attitudes, and cognitions. *Journal of Language and Social Psychology*, 33(5), 548–560. <https://doi.org/10.1177/0261927X14541280>
- Kollmayer, M., Pfaffel, A., Schober, B., & Brandt, L. (2018). Breaking away from the male stereotype of a specialist: Gendered language affects performance in a thinking task. *Frontiers in Psychology*, 9:985. <https://doi.org/10.3389/fpsyg.2018.00985>
- Komori, M., Kawamura, S., & Ishihara, S. (2011). Multiple mechanisms in the perception of face gender: Effect of sex-irrelevant features. *Journal of Experimental Psychology: Human Perception and Performance*, 37(3), 626–633. <https://doi.org/10.1037/a0020369>
- Kraft, Å. M. (2012). *Självpornografi. Akt 1: Pastoral prosa [Self-pornography. Act 1: Pastoral prose]*. Albert Bonniers förlag.
- Krauss, R. M., Chiu, C.-Y., Deaux, K., Fussell, S., Hochberg, J., Hong, Y., Putnam Yihsiu Chen, L., Tory Higgins, E., Remez, R., & Semin, G. (2010). Language and Social Behavior. In D. Gilbert, S. T. Fiske, & G. Lindsey (Eds.), *Handbook of social psychology, Vol. 2* (Vol. 2, pp. 41–88). McGraw-Hill.
- Kreiner, H., Sturt, P., & Garrod, S. (2008). Processing definitional and stereotypical gender in reference resolution: Evidence from eye-movements. *Journal of Memory and Language*, 58(2), 239–261. <https://doi.org/10.1016/j.jml.2007.09.003>
- Labov, W. (1994). *Principles of linguistic change. Volume 1: Internal factors*.

Blackwell.

Labov, W. (2001). *Principles of linguistic change. Volume 2: Social factors*. Blackwell.

Labov, W. (2010). *Principles of linguistic change. Volume 3: Cognitive and cultural factors*. Wiley-Blackwell.

Ladegaard, H. J. (2000). Language attitudes and sociolinguistic behaviour: Exploring attitude-behaviour relations in language. *Journal of Sociolinguistics*, 4(2), 214–233. <https://doi.org/10.1111/1467-9481.00112>

Lagerwall, K. (2012, February 14). “Hen” gör barn förvirrade [‘Hen’ confuses children]. *Dagens Nyheter*. <http://www.dn.se/nyheter/sverige/kritiker-hen-gor-barn-forvirrade/>

Landquist, H. (2001). Han, hon, han eller hon och hon eller han. Generiska pronomen i svenskt författningsspråk [He, she, he or she and she or he. Generic pronouns in Swedish constitutional language]. In K. Nordenstam & K. Norén (Eds.), *Språk, kön och kultur: Rapport från fjärde nordiska konferensen om språk och kön* (pp. 150–162). Institutionen för svenska språket.

Ledin, P., & Lyngfelt, B. (2013). Olika hen-syn: Om bruket av hen i bloggar, tidningstexter och student-uppsatser [Different perspectives on hen: On the use of hen in blogs, newspapers and student essays]. *Språk Och Stil*, 23(1), 141–174.

Lemm, K. M., Dabady, M., & Banaji, M. R. (2005). Gender picture priming: It works with denotative and connotative primes. *Social Cognition*, 23(3), 218–241. <https://doi.org/10.1521/soco.2005.23.3.218>

Lenton, A. P., Sedikides, C., & Bruder, M. (2009). A latent semantic analysis of gender stereotype-consistency and narrowness in american english. *Sex Roles*, 60(3–4), 269–278. <https://doi.org/10.1007/s11199-008-9534-z>

Liddicoat, A. J. (2011). Feminist language planning. *Current Issues in Language Planning*, 12:1, 1–7. <https://doi.org/10.1080/14664208.2011.541388>

Lindqvist, A., Gustafsson Sendén, M., Klysing, A., & Renström, E. A. (n.d.). *Identifying a gender normative bias in language: Can gender-inclusive pronouns counter gender normativity*.

Lindqvist, A., Gustafsson Sendén, M., & Renström, E. A. (2020). What is gender, anyway: A review of the options for operationalising gender. *Psychology & Sexuality*, 1–13. <https://doi.org/10.1080/19419899.2020.1729844>

Lindqvist, A., Renström, E. A., & Gustafsson Sendén, M. (2019). Reducing a male bias in language? Establishing the efficiency of three different gender-fair language strategies. *Sex Roles*. <https://doi.org/doi.org/10.1007/s11199-018-0974-9>

Lindqvist, A., Sendén, M. G., & Bäck, E. (2016). Vem tycker om hen? [Who likes hen?]. *Språk Och Stil*, 26, 101–129.

Liu, A. H., Shair-Rosenfield, S., Vance, L. R., & Csata, Z. (2018). Linguistic origins of gender equality and women’s rights. *Gender and Society*,

- 32(1), 82–108. <https://doi.org/10.1177/0891243217741428>
- Lombardi, E. L., & Malouf, D. (2008). *Gender violence: Transgender experiences with violence and discrimination*. 8369(1), 89–101. https://doi.org/10.1300/J082v42n01_05
- Lorber, J. (2006). Shifting paradigms and challenging categories. *Social Problems*, 53(4), 448–453. <https://doi.org/10.1525/sp.2006.53.4.448>
- Lundbäck, L. (2009). *Han, denne och han eller hon: Om generiska pronomen i juridisk myndighetstext*. Södertörn University.
- Lundqvist, J., & Johansson, B. (2012). *Kivi och monsterhund [Kivi and monster dog]*. Olika Förlag.
- Mackay, D. G. (1980). On the goals, principles, and procedures for prescriptive grammar: Singular they. *Language in Society*, 9(3), 349–367. <https://doi.org/10.1017/S0047404500008253>
- Mackie, D. M., Hamilton, D. L., Susskind, J., & Roselli, F. (1996). Social psychological foundations of stereotype formation. In C. N. Macrae, C. Stangor, & M. Hewstone (Eds.), *Stereotypes and stereotyping* (pp. 41–78).
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social cognition: Thinking categorically about others. *Annual Review of Psychology*, 51(1), 93–120. <https://doi.org/10.1146/annurev.psych.51.1.93>
- Macrae, C. N., Milne, A. B., & Bodenhausen, G. V. (1994). Stereotypes as energy-saving devices: A peek inside the cognitive toolbox. *Journal of Personality and Social Psychology*, 66(1), 37–47. <https://doi.org/10.1037/0022-3514.66.1.37>
- Macrae, C. N., & Quadflieg, S. (2010). Perceiving people. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of Social Psychology* (p. 428). John Wiley & Sons. <https://doi.org/10.4324/9781315228990-ch3>
- Majid, A., Bowerman, M., Kita, S., Haun, D. B. M., & Levinson, S. C. (2004). Can language restructure cognition? The case for space. *Trends in Cognitive Sciences*, 8(3), 108–114. <https://doi.org/10.1016/j.tics.2004.01.003>
- Majid, A., Burenhult, N., Stensmyr, M., De Valk, J., & Hansson, B. S. (2018). Olfactory language and abstraction across cultures. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 373(1752). <https://doi.org/10.1098/rstb.2017.0139>
- Marsh, E. J. (2007). Retelling is not the same as recalling: Implications for memory. *Current Directions in Psychological Science*, 16(1), 16–20. <https://doi.org/10.1111/j.1467-8721.2007.00467.x>
- Martin, L. (1986). “Eskimo words for snow”: A case study in the genesis and decay of an anthropological example. *American Anthropologist*, 88(2), 418–423. <https://doi.org/10.1525/aa.1986.88.2.02a00080>
- Mazzuca, C., Majid, A., Lugli, L., Nicoletti, R., & Borghi, A. (2020). Gender is a multifaceted concept: Evidence that specific life experiences differentially shape the concept of gender. *Language and Cognition*, 12(4), 649–678. <https://doi.org/10.1017/langcog.2020.15>
- McConnell-Ginet, S. (2014). Gender and its relation to sex: The myth of “natural” gender. In G. G. Corbett (Ed.), *The expression of gender* (pp.

- 3–38). De Gruyter.
- McConnell, A. R., & Fazio, R. H. (1996). Women as men and people. *Personality and Social Psychology Bulletin*, 22(10), 1004–1013. <https://doi.org/10.1177/01461672962210003>
- McGarty, C., Haslam, S. A., Hutchinson, K. J., & Grace, D. M. (1995). Determinants of perceived consistency: The relationship between group entitativity and the meaningfulness of categories. *British Journal of Social Psychology*, 34(3), 237–256. <https://doi.org/10.1111/j.2044-8309.1995.tb01061.x>
- McKoon, G., & Ratcliff, R. (1992). Inference during reading. *Psychological Review*, 99(3), 440–466. <https://doi.org/10.1037/0033-295X.99.3.440>
- Merkel, E., Maass, A., & Frommelt, L. (2012). Shielding women against status loss: The masculine form and its alternatives in the Italian language. *Journal of Language and Social Psychology*, 31(3), 311–320. <https://doi.org/10.1177/0261927X12446599>
- Milan, T. (2016, April 21). *First came the trans tipping point—Now we’ve got the backlash.* The Guardian. <https://www.theguardian.com/commentisfree/2016/apr/21/transgender-rights-backlash-anti-lgbt-legislation>
- Miller, M. M., & James, L. E. (2009). Is the generic pronoun he still comprehended as excluding women? *The American Journal of Psychology*, 122(4), 483–496.
- Milles, K. (2006). En jämställd kroppsdel? Om lanseringen av ett neutralt ord för flickors könsorgan [A gender equal part of the body? The introduction of a neutral word for girls’ genitals]. *Språk Och Stil*, 16, 149–177.
- Milles, K. (2011a). Feminist language planning in Sweden. *Current Issues in Language Planning*, 12(1), 21–33. <https://doi.org/10.1080/14664208.2011.541388>
- Milles, K. (2011b). Snippa: A success story of feminist language planning. *Gender and Language*, 5(1), 89–110. <https://doi.org/10.1558/genl.v5i1.89>
- Milles, K. (2013). En öppning i en sluten ordklass? Den nya användningen av pronomenet hen [An opening in a closed word class? The new use of the pronoun hen]. *Språk Och Stil*, 23(1), 107–140.
- Milles, K. (2017). Från maninnor till cyborger: Hur feminister har skaffat sig språklig makt [From “manninor” to cyborgs: How feminists have acquired linguistic power]. *HumaNetten*, 38, 26–39. <https://doi.org/10.15626/hn.20173804>
- Milles, K., Salmson, K., & Tominic, M. (2012, January 20). Det behövs ett nytt ord i svenska språket [The Swedish language needs a new word]. *Svenska Dagbladet*. <https://www.svd.se/det-behovs-ett-nytt-ord-i-svenska-spraket>
- Miltersen, E. H. (2016). Nounself pronouns: 3rd person personal pronouns as identity expression. *Journal of Language*, 1(1).
- Morgenroth, T., & Ryan, M. (2020). The effects of gender trouble: An integrative theoretical framework of the perpetuation and disruption of

- the gender/sex binary. *Perspectives on Psychological Science*, Advance online publication. <https://doi.org/10.1177/1745691620902442>
- Morgenroth, T., & Ryan, M. K. (2018). Gender trouble in social psychology: How can Butler's work inform experimental social psychologists' conceptualization of gender? *Frontiers in Psychology*, *9*, 1320. <https://doi.org/10.3389/fpsyg.2018.01320>
- Morgenroth, T., Sendén, M. G., Lindqvist, A., Renström, E. A., Ryan, M. K., & Morton, T. A. (2020). Defending the sex/gender binary: The role of gender identification and need for closure. *Social Psychological and Personality Science*, *12*(5), 1–10. <https://doi.org/10.1177/1948550620937188>
- Moss-Racusin, C. A., Phelan, J. E., & Rudman, L. A. (2010). When men break the gender rules: Status incongruity and backlash against modest men. *Psychology of Men & Masculinity*, *11*(2), 140–151. <https://doi.org/10.1037/a0018093>
- Moulton, J., Robinson, G. M., & Elias, C. (1978). Sex bias in language use: "Neutral" pronouns that aren't. *American Psychologist*, *33*(11), 1032–1036. <https://doi.org/10.1037/0003-066X.33.11.1032>
- Ng, S. H. (1990). Androcentric coding of man and his in memory by language users. *Journal of Experimental Social Psychology*, *26*(5), 455–464. [https://doi.org/10.1016/0022-1031\(90\)90069-X](https://doi.org/10.1016/0022-1031(90)90069-X)
- Nöjesguiden*. (2012).
- Öhberg, P., & Wängnerud, L. (2014). Testing the impact of political generations: The class of '94 and pro-feminist ideas in the Swedish Riksdag. *Scandinavian Political Studies*, *37*(1), 61–81. <https://doi.org/10.1111/1467-9477.12014>
- Parks, B., Parks, J. B., & Robertson, M. A. (1998). Contemporary arguments against nonsexist language: Blaubergs (1980) revisited. *Sex Roles*, *39*, 445–461. <https://doi.org/10.1023/A:1018827227128>
- Paterson, L. L. (2020). Non-sexist language policy and the rise (and fall?) of combined pronouns in British and American written English. *Journal of English Linguistics*, *48*(3), 258–281. <https://doi.org/10.1177/0075424220938949>
- Pauwels, A. (1998). *Women changing language*. Longman.
- Pérez, E. O., & Tavits, M. (2019). Language influences public attitudes toward gender equality. *Journal of Politics*, *81*(1), 81–93. <https://doi.org/10.1086/700004>
- Petty, R. E., Fazio, R. H., & Brinol, P. (2009). The new implicit measures: An overview. In P. Petty, R. E., Fazio, R. H., & Brinol (Ed.), *Attitudes: Insights from the new implicit measures* (pp. 3–18). Psychology Press.
- Prasad, G., Morris, J., & Feinstein, M. (2018). The P600 for singular 'they': How the brain reacts when John decides to treat themselves to sushi. *The 31st CUNY Conference on Human Sentence Processing*. <https://osf.io/2vjyp/>
- Prewitt-Freilino, J. L., Caswell, T. A., & Laakso, E. K. (2012). The gendering of language: A comparison of gender equality in countries with gendered, natural gender, and genderless languages. *Sex Roles*, *66*, 268–

281. <https://doi.org/10.1007/s11199-011-0083-5>
- Rankin, S., & Beemyn, G. (2012). Beyond a binary: The lives of gender-nonconforming youth. *About Campus*, 17(4), 2–10. <https://doi.org/10.1002/abc.21086>
- Redl, T. (2020). *Masculine generic pronouns: Investigating the processing of an unintended gender cue*. Radboud Universiteit Nijmegen.
- Redl, T., Eerland, A., & Sanders, T. J. M. (2018). The processing of the Dutch masculine generic zijn ‘his’ across stereotype contexts: An eye-tracking study. *PLoS ONE*, 13(10), 1–22. <https://doi.org/10.1371/journal.pone.0205903>
- Redl, T., Frank, S., de Swart, P., & de Hoop, H. (2021). The male bias of a masculine generic pronoun: Evidence from eye-tracking and sentence evaluation. *PLoS ONE*, 16(4), 1–30. <https://doi.org/10.1371/journal.pone.0249309>
- Regier, T., & Kay, P. (2009). Language, thought, and color: Whorf was half right. *Trends in Cognitive Sciences*, 13(10), 439–446. <https://doi.org/10.1016/j.tics.2009.07.001>
- Reinhart, T. (1981). Definite NP Anaphora and C-Command Domains. *Linguistic Inquiry*, 12(4), 605–635.
- Renström, E. A., Lindqvist, A., & Gustafsson Sendén, M. (n.d.). *The multiple meanings of hen*.
- Richards, Z., & Hewstone, M. (2001). Subtyping and subgrouping: Processes for the prevention and promotion of stereotype change. *Personality and Social Psychology Review*, 5(1), 52–73. https://doi.org/10.1207/S15327957PSPR0501_4
- Rindfleisch, A., & Inman, J. J. (1998). Explaining the familiarity-liking relationship: Mere exposure, information availability, or social desirability? *Marketing Letters*, 9(1), 5–19. <https://doi.org/10.1023/A:1007958302123>
- Rochon, E., Saffran, E. M., Berndt, R. S., & Schwartz, M. F. (2000). Quantitative analysis of aphasic sentence production: Further development and new data. *Brain and Language*, 72(3), 193–218. <https://doi.org/10.1006/brln.1999.2285>
- Rudman, L. A., Moss-Racusin, C. A., Phelan, J. E., & Nauts, S. (2012). Status incongruity and backlash effects: Defending the gender hierarchy motivates prejudice against female leaders. *Journal of Experimental Social Psychology*, 48(1), 165–179. <https://doi.org/10.1016/j.jesp.2011.10.008>
- Ruscher, J. B. (2017). Prejudiced communication. In *Oxford Research Encyclopedia of Communication*. <https://doi.org/10.1093/acrefore/9780190228613.013.419>
- Sanford, A. J. (1985). Aspects of pronoun interpretation: Evaluation of search formulations of inference. In G. Rickheit & H. Strohner (Eds.), *Inferences in text processing* (pp. 183–204). Elsevier Science Publishers.
- Sanford, A. J., & Filik, R. (2007). “They” as a gender-unspecified singular pronoun: Eye tracking reveals a processing cost. *The Quarterly Journal of Experimental Psychology*, 60(2), 171–178.

- <https://doi.org/10.1080/17470210600973390>
- Santacreu-Vasut, E., Shenkar, O., & Shoham, A. (2014). Linguistic gender marking and its international business ramifications. *Journal of International Business Studies*, 45(9), 1170–1178. <https://doi.org/10.1057/jibs.2014.5>
- Santacreu-Vasut, E., Shoham, A., & Gay, V. (2013). Do female/male distinctions in language matter? Evidence from gender political quotas. *Applied Economics Letters*, 20(5), 495–498. <https://doi.org/10.1080/13504851.2012.714062>
- Sarrasin, O., Gabriel, U., & Gygax, P. M. (2012). Sexism and attitudes toward gender-neutral language the case of English, French, and German. *Swiss Journal of Psychology*, 71(3), 113–124. <https://doi.org/10.1024/1421-0185/a000078>
- Scott, K. (2011). *Linguistic variation and change*. Edinburgh University Press.
- Szczesny, S., Formanowicz, M. M., & Moser, F. (2016). Can gender-fair language reduce gender stereotyping and discrimination? *Frontiers in Psychology*, 7, 25. <https://doi.org/10.3389/fpsyg.2016.00025>
- Szczesny, S., Moser, F., & Wood, W. (2015). Beyond sexist beliefs: How do people decide to use gender-inclusive language? *Personality and Social Psychology Bulletin*, 41(7), 943–954. <https://doi.org/10.1177/0146167215585727>
- Sera, M. D., Elieff, C., Burch, M. C., Forbes, J., Rodríguez, W., & Dubois, D. P. (2002). When language affects cognition and when it does not: An analysis of grammatical gender and classification. *Journal of Experimental Psychology: General*, 131(3), 377–397. <https://doi.org/10.1037/0096-3445.131.3.377>
- Sherman, J. W., Macrae, C. N., & Bodenhausen, G. V. (2000). Attention and stereotyping: Cognitive constraints on the construction of meaningful social impressions. *European Review of Social Psychology*, 11(1), 145–175. <https://doi.org/10.1080/14792772043000022>
- Shields, J. P., Cohen, R., Glassman, J. R., Whitaker, K., Franks, H., & Bertolini, I. (2013). Estimating population size and demographic characteristics of lesbian, gay, bisexual, and transgender youth in middle school. *Journal of Adolescent Health*, 52(2), 248–250. <https://doi.org/10.1016/j.jadohealth.2012.06.016>
- Shoham, A., & Lee, S. M. (2018). The causal impact of grammatical gender marking on gender wage inequality and country income inequality. *Business and Society*, 57(6), 1216–1251. <https://doi.org/10.1177/0007650317696231>
- Siemund, P. (2013). Modern standard English. In *Pronominal gender in English: A study of English varieties from a cross-linguistic perspective* (pp. 152–179). Routledge.
- Siewierska, A. (2013). Gender distinctions in independent personal pronouns. In M. S. Dryer & M. Haspelmath (Eds.), *The World Atlas of Language Structures Online*. Max Planck Institute for Evolutionary Anthropology. <http://wals.info/chapter/44>

- Silveira, J. (1980). Generic masculine words and thinking. *Women's Studies International Quarterly*, 3, 165–178. [https://doi.org/10.1016/S0148-0685\(80\)92113-2](https://doi.org/10.1016/S0148-0685(80)92113-2)
- Speyer, L. G., & Schleef, E. (2018). Processing ‘gender-neutral’ pronouns: A self-paced reading study of learners of English. *Applied Linguistics*, 1–24. <https://doi.org/10.1093/applin/amy022>
- Spiro, R. J., Coulson, R. L., Feltovich, P. J., & Anderson, D. K. (2004). Theoretical models and processes of reading. In *Cognitive flexibility theory: Advanced knowledge acquisition in ill-structured domains*.
- Språkrådet. (2013). *Kan man använda pronomenet hen? [Can one use the pronoun hen?]*. <http://www.sprakradet.se/16474>
- Stahlberg, D., Braun, F., Irmen, L., & Sczesny, S. (2007). Representations of the sexes in language. In *Social communication* (Issue February, pp. 163–187). <https://doi.org/10.4324/9780203837702>
- Stahlberg, D., & Sczesny, S. (2001). Effekte des generischen Maskulinums und alternativer Sprachformen auf den gedanklichen Einbezug von Frauen [Effects of the generic masculine and alternative forms of language on the mental inclusion of women]. *Psychologische Rundschau*, 53(3), 131–140. <https://doi.org/10.1026//0033-3042.52.3.131>
- Stahlberg, D., Sczesny, S., & Braun, F. (2001). Name your favorite musician: Effects of masculine generics and of their alternatives in German. *Journal of Language and Social Psychology*, 20(4), 464–469. <https://doi.org/10.1177/0261927X01020004004>
- Stangor, C., & Lange, J. E. (1994). Mental representations of social groups: Advances in understanding stereotypes and stereotyping. *Advances in Experimental Social Psychology*, 26(C), 357–416. [https://doi.org/10.1016/S0065-2601\(08\)60157-4](https://doi.org/10.1016/S0065-2601(08)60157-4)
- Stangor, C., Lynch, L., Duan, C., & Glass, B. (1992). Categorization of individuals on the basis of multiple social features. *Journal of Personality and Social Psychology*, 62(2), 207–218. <https://doi.org/10.1037/0022-3514.62.2.207>
- Stern, M., & Karraker, K. H. (1989). Sex stereotyping of infants: A review of gender labeling studies. *Sex Roles*, 20(9–10), 501–522. <https://doi.org/10.1007/BF00288198>
- Storrs, K. R., & Arnold, D. H. (2012). Not all face aftereffects are equal. *Vision Research*, 64, 7–16. <https://doi.org/10.1016/j.visres.2012.04.020>
- Stout, J. G., & Dasgupta, N. (2011). When he doesn't mean you: Gender-exclusive language as ostracism. *Personality and Social Psychology Bulletin*, 36(6), 767–769. <https://doi.org/10.1177/0146167211406434>
- Strahan, T. E. (2008). ‘They’ in Australian English: Non-gender-specific or specifically non-gendered? *Australian Journal of Linguistics*, 28(1), 17–29. <https://doi.org/10.1080/07268600701877473>
- Stroumsa, D., & Wu, J. P. (2018). Welcoming transgender and nonbinary patients: expanding the language of “women’s health.” *American Journal of Obstetrics and Gynecology*, 219(6), 585.e1-585.e5. <https://doi.org/10.1016/j.ajog.2018.09.018>

- Svenska Akademien. (2005). *Svenska Akademiens ordlista över svenska språket*.
- Svenska Akademien. (2015). *Svenska Akademiens ordlista över svenska språket* (14th ed.). Norstedt.
- Swedish Code of Statutes. (1975). *Aktiebolagslag [Limited liability company law]*. https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/aktiebolagslag-19751385_sfs-1975-1385
- Tate, C. C., Youssef, C. P., & Bettergarcia, J. N. (2014). Integrating the study of transgender spectrum and cisgender experiences of self-categorization from a personality perspective. *Review of General Psychology, 18*(4), 302–312. <https://doi.org/10.1037/gpr0000019>
- Tavits, M., & Pérez, E. O. (2019). *Language influences mass opinion toward gender and LGBT equality*. *26*, 1–6. <https://doi.org/10.1073/pnas.1908156116>
- Tebbe, E. N. (2011). *Anti-transgender prejudice: A structural equation model of associated constructs*. University of Florida.
- Thompson, M. S., Judd, C. M., & Park, B. (2000). The consequences of communicating social stereotypes. *Journal of Experimental Social Psychology, 36*(6), 567–599. <https://doi.org/10.1006/jesp.1999.1419>
- Thomsen, D. (2012, September 10). *Herlitz inför hen-förbud [Herlitz introduces hen ban]*. *Dagens Media*. <https://www.dagensmedia.se/medier/dagspress/herlitz-infor-hen-forbud-6131831>
- Thorne, N., Yip, A. K. T., Bouman, W. P., Marshall, E., & Arcelus, J. (2019). The terminology of identities between, outside and beyond the gender binary—A systematic review. *International Journal of Transgenderism, 20*(2–3), 138–154. <https://doi.org/10.1080/15532739.2019.1640654>
- Todorov, A., & Oosterhof, N. N. (2011). Modeling social perception of faces. *Signal Processing Magazine, IEEE, 117*, 117–122.
- UNESCO. (2011). *Priority gender equality guidelines*. http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/BSP/GENER/GE_Guidelines_December_2_FINAL.pdf
- United Nations. (2020). *Human development report 2020*. <http://www.hdr.undp.org/sites/default/files/hdr2020.pdf>
- van den Broek, P., Young, M., Tzeng, Y., & Linderholm, T. (1999). The landscape model of reading: Inferences and the online construction of a memory representation. In H. van Oostendorp & S. R. Goldman (Eds.), *The construction of mental representations during reading* (pp. 71–98). Lawrence Erlbaum Associates Publishers.
- Vergoossen, H. P. (2018). *Preregistration for processing gender-neutral pronouns during anaphor resolution: Evidence from Swedish*. <https://doi.org/https://doi.org/10.17605/OSF.IO/EXKDX>
- Vergoossen, H. P., Gustafsson Sendén, M., & Renström, E. A. (2020). *Preregistration for personal pronouns and their effect on the gender categorization of faces*. <https://doi.org/10.17605/OSF.IO/FVU9M>
- Vergoossen, H. P., Pärnamets, P., Renström, E. A., & Gustafsson Sendén, M. (2020). Are new gender-neutral pronouns difficult to process in reading?

- The case of hen in Swedish. *Frontiers in Psychology*, *11*, 2967. <https://doi.org/10.3389/fpsyg.2020.574356>
- Vergoossen, H. P., Renström, E. A., Lindqvist, A., & Gustafsson Sendén, M. (2020). Four dimensions of criticism against gender-fair language. *Sex Roles*, *83*, 328–337. <https://doi.org/10.1007/s11199-019-01108-x>
- Vervecken, D., Gygax, P. M., Gabriel, U., Guillod, M., & Hannover, B. (2015). Warm-hearted businessmen, competitive housewives? Effects of gender-fair language on adolescents' perceptions of occupations. *Frontiers in Psychology*, *6*, 1437. <https://doi.org/10.3389/fpsyg.2015.01437>
- Walker, M., & Vetter, T. (2016). Changing the personality of a face: Perceived big two and big five personality factors modeled in real photographs. *Journal of Personality and Social Psychology*, *110*(4), 609–624. <https://doi.org/10.1037/pspp0000064>
- Walker, M., & Wänke, M. (2017). Caring or daring? Exploring the impact of facial masculinity/femininity and gender category information on first impressions. *PLoS ONE*, *12*(10), 1–19. <https://doi.org/10.1371/journal.pone.0181306>
- Wasserman, B. D., & Weseley, A. J. (2009). ¿Qué? Quoi? Do languages with grammatical gender promote sexist attitudes? *Sex Roles*, *61*(9–10), 634–643. <https://doi.org/10.1007/s11199-009-9696-3>
- Webster, M. A., Kaping, D., Mizokami, Y., & Duhamel, P. (2004). Adaptation to natural facial categories. *Nature*, *428*, 357–360. <https://doi.org/10.1038/nature02361.1>
- Westbrook, L., & Saperstein, A. (2015). New categories are not enough: Rethinking the measurement of sex and gender in social surveys. *Gender and Society*, *29*(4), 534–560. <https://doi.org/10.1177/0891243215584758>
- White, A. E., Moeller, J., Ivcevic, Z., & Brackett, M. A. (2018). Gender identity and sexual identity labels used by U.S. high school students: A co-occurrence network analysis. *Psychology of Sexual Orientation and Gender Diversity*, *5*(2), 243–252. <https://doi.org/10.1037/sgd0000266>
- Willis, M., & Jozkowski, K. N. (2017). Ladies first? Not so fast: Linguistic sexism in peer-reviewed research. *Journal of Sex Research*, *55*(2), 137–145. <https://doi.org/10.1080/00224499.2017.1346058>
- Winawer, J., Witthoft, N., Frank, M. C., Wu, L., Wade, A. R., & Boroditsky, L. (2007). Russian blues reveal effects of language on color discrimination. *PNAS*, *104*(19), 7780–7785.
- Winter, S., Diamond, M., Green, J., Karasic, D., Reed, T., Whittle, S., & Wylie, K. (2016). Transgender people: health at the margins of society. *The Lancet*, *388*(10042), 390–400. [https://doi.org/10.1016/S0140-6736\(16\)00683-8](https://doi.org/10.1016/S0140-6736(16)00683-8)
- Wittlin, N. M., Dovidio, J. F., LaFrance, M., & Burke, S. E. (2018). About face: Memory for transgender versus cisgender targets' facial appearance. *Journal of Experimental Social Psychology*, *78*, 77–92. <https://doi.org/10.1016/j.jesp.2018.04.009>
- Wojahn, D. (2015). *Språkaktivism: Diskussioner om feministiska*

språkförändringar i Sverige från 1960-talet till 2015 [Language activism: Discussions about feminist language changes in Sweden from the 1960s to 2015]. Uppsala University.

- Wojahn, D. (2013). De personliga pronomenens makt: En studie av hur pronomen styr våra föreställningar om personer [The power of personal pronouns: A study of how pronouns control our perceptions of people]. In B. Bihl, P. Andersson, & L. Lötmarker (Eds.), *Svenskans Beskrivning* (Vol. 32, pp. 356–367). Karlstads universitet.
- Zeluf, G., Dhejne, C., Orre, C., Nilunger Mannheimer, L., Deogan, C., Höjjer, J., & Ekéus Thorson, A. (2016). Health, disability and quality of life among trans people in Sweden—a web-based survey. *BMC Public Health*, *16*(1), 1–16. <https://doi.org/10.1186/s12889-016-3560-5>