Call me a woman or a PhD, why a woman PhD? An exploration of gender-biased and gender-inclusive language in Chinese.

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Statement of Authorship

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The candidate acknowledges the contributions of Dr. Laurel Lawyer as co-author of Studies 1 and 2, and certifies the authorship and publication status of the studies included in this thesis as follows:

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Abstract

This PhD thesis reviews asymmetrical representations of women in Chinese. It uses quantitative methods to investigate attitudes toward sexist and nonsexist language in Chinese, and explores perceptions of gender-neutral and gender-marked representations of social roles. Focusing on the default versus female-marked representation of women, the research focuses on younger adults born after China's Reform and Opening-up (1980 - 2004) and living in mainland China.

Study 1 presents the first empirical data on attitudes toward sexist and inclusive language in Mainland China. Using an adapted Chinese version of the Inventory of Attitudes Toward Sexist/Nonsexist Language - General (IASNL-G), it measures abstract beliefs about language reform, recognition of sexist language, and willingness to use inclusive language. This study also examines how individuals' age, sex, and beliefs on gender equality influence these attitudes. Findings show evolving language attitudes, with younger individuals favouring language reform and gender-inclusive language more strongly. Women generally hold more positive attitudes than men, likely driven by different motivations in adopting or resisting gender-inclusive language.

Study 2 systematically examines perceptions of redundant gender-marked nouns when the referent's sex is explicitly shown. A sentence-rating experiment tested acceptability of gender-neutral and gender-marked nouns across different conditions, analysing their relationship with nouns' gender stereotypes and participants' attitudes toward gender equality and language inclusivity. Findings show that female-marked nouns were generally more acceptable than male-marked counterparts, with only male-marked nouns influenced by gender stereotypes. Participants with stronger egalitarian beliefs showed lower

acceptance of gender-marked forms and higher acceptance of gender-neutral forms. It provides empirical evidence linking asymmetrical acceptance of gender-neutral and redundantly gender-marked nouns to both gender stereotypes and broader social attitudes.

Study 3 examines how gender-neutral default and female-marked forms influence perceptions of women in male-dominated professions. Using a between-participant experiment, it measures recall accuracy, achievement evaluations, and expectations for women and the participants themselves based on exposure to different linguistic representations. Findings highlight the advantages of female-marked forms in enhancing women's visibility and raising expectations for their success while revealing the complex effects of short-term and long-term exposure to counter-stereotypical women, participants' sex, and gender beliefs on perceptions of gender representations.

Collectively, this thesis bridges the theoretical and methodological gaps between sociolinguistics and psycholinguistics, pioneering research into perceptions of sexist and gender-inclusive language in Chinese. It offers foundational insights into the relationships between gender and social beliefs on linguistic perceptions, contributing to the study of Chinese and other grammatically genderless languages. This work lays the groundwork for advancing interdisciplinary research across linguistics, gender studies, and social psychology while inspiring future exploration of gender-inclusive language in Chinese and beyond.

Acknowledgements

In the past few years of my both melancholy and agreeable PhD journey, I must have been imagined a thousand times what I would write in the acknowledgements. I even listed a few places, songs, and films to thank during my daydreaming, often when I was struggling my with my writings. However, all the memories and emotions flooded me that I am suddenly not sure about how to express them right now, so i will just keep this very simple.

I would like to thank every single person who supported me in pursuing this PhD project, especially my primary supervisor, Laurie, and my family. I also wish to express my gratitude to Amanda, Charlie, and Tracey. Without their support and assistance, the final stage of my PhD study would not have been so smooth. Finally, I believe I deserve to thank myself for making the decision to pursue a PhD and for persevering to fulfill it.

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Chapter 1 General introduction

The Paris 2024 Summer Olympic Games represented a landmark for women's inclusion, making history by achieving numerical gender equality. In addition, the games reinvented the Olympic and Paralympic pictograms, replacing human figures with abstract symbols to represent sports. From a sociolinguistic perspective - where communication extends beyond language to symbols and visual design, this redesign exemplifies inclusive language practices: blurring distinctions between women and men, Olympic and Paralympic athletes, athletes and supporters, with the aim of making these symbols related to everyone. However, a closer look at language of the opening ceremony reveals the long-lasting linguistic discrimination encoded in the world's languages. During the opening ceremony, 10 golden statues honouring exemplary women were unveiled to celebrate their contributions to history. Comparisons of these exemplars' roles in French and their translations into English and Chinese, as shown in the examples of Alice Milliat (1a), Jeanne Barret (1b), and Louise Michel (1c), illustrate varying degrees of correlation between references to sex and grammatical structures across languages[1]

In French, reference to sex is coded in language structure through grammatical gender (i.e. feminine or masculine, or sometimes neuter), as a result gender marking of nouns is almost inevitable when referring to person. Accordingly, we can observe the feminine form of nouns such as "sportive" in (1a), "exploratrice" in (1b), and "institutrice" in (1c). In English where grammatical marking of sex is less prevalent, most personal nouns can refer to both females and males. Therefore, though "sportswoman" in (1a) may serve as a symmetrical counterpart to "sportsman", no such gender marking is observed in the

[1] See Stahlberg, Bruan, Irmen, & Sczesny (2007) for an overview of representations of the sexes in languages. Also see the literature review of Chapter 3 for more explanations and examples of language types based on the degree of grammatical gender marking.

corresponding English translations of roles such as “explorer” in (1b) and “teacher" in (1c)[2].

(1a) Alice Milliat

French: sportive de haut niveau

lit. ‘sportswoman of high level’

English: world-class sportswoman

Chinese: 顶级 女 运动员

lit. ‘top-level female sportsperson’

(1b) Jeanne Barret

French: exploratrice et botaniste

lit. ‘explorer(fem.) and botanist(fem.)’

English: explorer and botanist

Chinese: 女 探险家 和 植物学家

lit. ‘female exploration-expert and botany-expert’

(1c) Louise Michel

French: institutrice, écrivaine, militante anarchiste et féministe

lit. ‘teacher(fem.), writer(fem.), activist(fem.) anarchist and feminist(fem.)

English: teacher, writer, anarchist, and feminist activist

Chinese: 教师， 作家，无 政府 主义者 和 女权 主义 斗士

lit. ‘teacher, writer, no-government-ist and woman right-ism[3] fighter’

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[2] Also see Chapter 3 and Chapter 5 for different strategies of gender-inclusive language.

[3] There are two translations for the western concept of “feminism” in Chinese: 女权主义 ‘woman rightism’ and 女性主义 ‘womanism’. See more on this in Chapter 2.

Similar to the case in English, most of the Chinese nouns are gender undifferentiated, especially professional roles as shown in the examples. However, it is somewhat surprising to find the use of 女 /nǚ/ ‘female’ as a lexical means of gender marker in 女运动员 ‘female-sportsperson’ in (1a) and 女探险家和植物学家 ‘female-explorer and botanist’ in (1b). One may propose the female-marker in the Chinese translations is used to correspond the grammatically feminine forms of the French nouns, but this would fail to explain the inconsistency in (1c) in which there is no female-marker for any roles, namely 教师 ‘teacher’, 作家 ‘writer', 无政府主义者 ‘anarchist', and 女[4]权主义斗士 ‘feminist activist’.

According to the observations in the examples (1a), (1b), and (1c), critical questions can be put forward regarding the use of female-marker in Chinese nouns: Why is a female-marker sometimes added to the roles when it is neither grammatically nor referentially necessary? How does the choice of gender markers relate to gender stereotypes, and could their use reinforce linguistic sexism by perpetuating implicit gender biases in roles? Do individuals hold different attitudes toward the additional gender-markers? How might the presence and absence of gender-markers influence perceptions of the individuals being represented?

This PhD project addresses these questions by investigating attitudes toward sexist and nonsexist language in Chinese and by exploring perceptions of gender-neutral and gender-marked representations of women and men, with the female marker as a key focus.

[4] This 女 in the compound 女权-主义-斗士 is marking the feminist part of being a feminist activist, rather than a female activist.

1.1 Chinese as a standard language

The target language of this PhD project is Chinese, but it is often unclear in research papers what Chinese means as a standard language spoken and written by people living in People's Republic of China (henceforth China).

Chinese (中文 /zhōng wén/) is a broad term referring to the language and script of China. In a political sense, it specifically refers to the spoken and written language of 汉族 /hàn zú/ 'Han ethnic group', namely 汉语 /hàn yǔ/ 'Han language' - the shared spoken language of several major dialects of Han ethnic group, and 汉字 /hàn zì/ 'Chinese characters'.

However, the English term *Mandarin Chinese* is not a direct equivalence to Han language. *Mandarin Chinese* can refer to both 普通话 /pǔ tōng huà/ 'common language' and 国语 /guó yǔ/ 'national language'. 普通话 'common language' is the standardised national common language officially adopted in Mainland China in 1995 and legitimated through the promulgation of the *Law of the People's Republic of China on the Standard Spoken and Written Chinese Language* in 2001. On the other hand, 国语 'national language' is used in regions such as Taiwan, where it refers to a similar standard language but with subtle differences in pronunciation, vocabulary, and certain usages influenced by historical and regional factors. My PhD project focuses on individuals who were born and raised in Mainland China. Therefore, 普通话 'common language', as the official spoken language in Mainland China, is the target language of this project.

As for writing systems, currently two standard systems of Chinese characters are being used: simplified and traditional. Simplified characters have been the standard in mainland China since the the Script Reform in 1964, while traditional characters are still commonly used in regions of Greater China such as Hong Kong, Macau and Taiwan (Chen, 2015). This PhD project focuses on simplified Chinese characters.

1.2 Basic features of Chinese characters and words

Early Chinese characters were commonly pictographic, but such form is not productive in representing abstract concepts. Gradually, the writing system has developed to include both ideographic and logographic features mainly through compound graphs consisting of 部首 /bù shǒu/ ‘radical’ and 声部 /shēng bù/ ‘phonetic element’ to correspond to the speaking system (Wang & Tsai, 2015; Li, 2020).

It is worth noting that there are different English translations for 部首, this PhD thesis follows the practice of most Chinese English dictionaries and research papers to use ‘radical’ but the other translations such as ‘signific’ (Ettner, 2002, p32) or ‘semantic stem’ (Fan, 1996) refer to the same element. A radical is the basic component of a character contributing an overall semantic category to which a character belongs such as *human being*, *animal*, *water*, *metal*, and so on. The phonetic element generally indicates the pronunciation of a character. This element usually takes the medial and sometimes final segments of the character. For example, the generic third-person singular pronoun 他 /tā/ consists of the radical “亻” - a variant of the character 人 /rén/ ‘person’ - indicating this character is related to people and the phonetic element “也” - a variant of 它 /tā/ - indicating the pronunciation. In addition, Chinese characters feature a large number of

homophones. This means that different characters conveying distinct meanings can share identical pronunciations. This feature is particularly interesting if we continue to take third-person singular pronouns as examples, namely 他 ‘generic *he*’, 她 ‘she’, and 它 ‘it’. While all the three pronouns are pronounced the same as /tā/, clearly the radicals of 他 and 她 are different. The radical 女 /nǚ/ ‘female’ of the character 她 indicates that this is a female-specific pronoun. 它, without any radicals related to human beings and gender, is used for non-human references such as animals, objects, or abstract concepts[5].

In Chinese, a character (字 /zì/) is different from the common concept of a word (词 /cí/) as in English. A single character can be a monosyllabic word, but a common Chinese word usually consists of two or more characters, in most cases a compound, so it can be disyllabic or even multisyllabic. For example, 女 /nǚ/ can be a monosyllabic word meaning ‘woman’ or ‘daughter’ as a noun or ‘female’ as an adjective, this character can also form common words with other characters or words such as 女权 /nǚ quán/ ‘woman’s rights’, 女王 /nǚ wáng/ ‘female king’ meaning ‘queen’ or 女朋友 /nǚ péng yǒu/ ‘girlfriend’.

[5] See more discussions on the pronouns and the history of introducing a female-specific pronoun into Chinese in Chapter 4.

1.3 The use of term *sex* and *gender* in this thesis

In social psychology, sex and gender cannot be cleanly and clearly separated, but generally sex refers to a person's biological femaleness and maleness, and gender refers to the culturally constructed norms and expectations for femininity and masculinity (Stoller, 1968; Unger, 1979).

In Chinese, 性别 /xìng bíe/ 'sex/gender distinction' is a broad term referring to both sex and gender. However, the concept of gender is relatively new as it had not been officially introduced to China until the Fourth World Conference on Women in Beijing in 1995 through the slogan of 'gender mainstreaming' (Xu, 2009). Gender mainstreaming is a key strategy for empowering women, aiming to achieve gender equality by systematically integrating a gender perspective into all stages of policy-making, planning and implementation, rather than treating gender as a separate issue. Therefore, disputes are still found in the translation of the English term to Chinese (Yu, 2015). Some supported to add 社会 /shè huì/ 'social' to form 社会性别 'social gender' as a distinction from (biological) sex to stress the socially constructed nature of gender roles as an analytical weapon to fight patriarchy in China. On the other hand, the extra 'social' disregards physical differences between women and men, echoing Maoist ideas[6] of identical gender roles. Under Maoist ideology, gender equality was framed through the lens of sameness: women were encouraged to "hold up half the sky" and contribute equally to production, often by adopting the same roles, clothing, and behaviours associated with men. This approach promoted formal equality but downplayed gender-specific needs and experiences. Accordingly, those who oppose the translation of the English term *gender* as 社会性别

[6] Mao Zedong (1893–1976) was the founding father of the People's Republic of China and the leader of the Chinese Communist Party from 1949 until his death. Maoist ideas refer to the political and ideological framework developed under his leadership, emphasising class struggle, collectivism, and revolutionary egalitarianism.

‘social gender’ see 性别 ‘sex/gender’ as a culturally particular concept that reflects the uniqueness of Chinese feminism[7].

Despite the disputes, in this thesis it is worth to clarify the use of sex/gender related terms for functional purposes. We use “sex” for the classification of participants in this PhD project based on their Resident Identity Card - this information of sex is based on individual’s birth certificate. In data collection, both categories of 生理性别 ‘biological sex’ and 社会性别 ‘social gender’ were given for participants to choose for potentially different classifications in data analysis. In study 1 (chapter 3) and 2 (chapter 4), participants were given four choices, namely 女 “female”, 男 “male”, 非二元性别 “non-binary”, and 不愿透露 “unwilling to tell”. In order to classify biological sex and social gender more clearly, in study 3 (chapter 5), participants were first asked to report their sex based on their Resident Identity Card - 女 “female” or 男 “male”. Then, they were asked to indicate their self-identified gender through choices including 女 “female”, 男 “male”, 非二元性别 “non-binary”, and 不愿透露 “unwilling to tell”. However, due to the very small number of participants who identified as non-binary: 1 in Study 1, 1 in Study 2, and 2 in Study 3, we were unable to conduct separate statistical comparisons between the non-binary group and the cisgender female and male groups. As a result, in our final data analysis, participants were categorised based on the sex listed on their Resident Identity Card. Nevertheless, we value and have retained the data from non-binary participants, and we hope to conduct further research focusing specifically on this group in the future.

[7] Translating the western concept of “feminism” into Chinese is another troublesome issue. See more on this in Chapter 2.

We use “gender” for the linguistic sense of grammatical or semantic gender such as “feminine or masculine gender” or “gender marking”; for differences between women and men shaped by both culture and biology such as “gender equality” or “gender gap” observed in surveys and behaviour studies; and for representing social expectations of feminine and masculine roles such as “gender stereotypes”.

1.4 The use of term *woman* and *man* in this thesis

Following a similar approach to the use of *sex*, we use “female/male” when there is a focus on the sex of a person. For example, though we use the term “gender marker” instead of “sex marker” in relation to the broad linguistic structure both grammatical and semantic, the marker 女 /nǚ/ ‘female’ in 女运动员 ‘female sportsperson' as exemplified earlier emphasises more on the biological distinction of females and males. Accordingly, we term the gender markers in this thesis as *female-maker* and *male-marker* and the corresponding translations of the marked words such as 女科学家 and 男科学家 are ‘female-scientist’ and ‘male-scientist’. When sex as a variable is relevant to the research outcome, we use “female/male participants” to report specific findings.

Following the use of *gender*, we use “woman/man” as broader collective reference to capture both the biological features and the social roles when we discuss topics such as gender equality and gender stereotypes. Particularly, we use “woman” as a direct translation of 妇女[8] /fù nǚ/ when there is an emphasis on the socio-political role of the gender such as “women’s liberation” or “women’s rights”.

Finally, this thesis consistently places women before men in general writing as a deliberate effort to counterbalance the linguistic sexism in word order.

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[8] 妇女 /fù nǚ/ ‘woman’ is the term officially used in formal legal texts. It serves as a collective term for all women. Examples include 三八国际妇女节 'International Women’s Day on March 8th' and 中华全国妇女联合会 'All-China Women's Federation’.

1.5 General introduction to the thesis structure

This PhD thesis is a journal-article-based project comprises 7 chapters, including three independent research papers presented in Chapter 3, 4, and 5.

Chapter 1 provides an overview of the PhD project and outlines the structure of the thesis. It also introduces the basic features of the target language - Chinese, and clarifies relevant terms. Chapter 2 examines the linguistic representations of women in Chinese, focusing on the lesser-known or rarely published histories of gender-related terms that evolved alongside key political milestones in women's liberation in China. Examples include the gendered interpretations of the concepts democracy, science, and morality, the controversial evolution of the term 先生 /xiān sheng/ (originally meaning 'master, teacher', later used generically as 'mister'), and 女书 /nǚ shū/ 'women's writing' - the world's only script exclusively created and used by women as recognised by UNESCO (Chen, 2018). Separate literature reviews for the independent studies are presented in Chapter 3, 4, and 5.

Chapter 3 reviews the practice of sexist and gender-inclusive language in Chinese and conducts a survey on attitudes toward sexist and nonsexist language in Chinese, and the impacts of age and gender beliefs on the attitudes. The findings from this study also laid the groundwork for our follow-up research on how gender-marked and gender-neutral (unmarked) nouns are perceived, informing both the design and analysis phrases. Chapter 4 reviews the phenomenon of asymmetrical gender marking in languages and the gender stereotypes encoded in grammatically gender-neutral nouns. This study investigates the acceptability of redundant use of gender markers 女- 'female- ' and 男- 'male- ' as in 女消

防员 ‘female-firefighter’ or 男护士 ‘male-nurse’ when a referent’s sex is explicitly informed through kinship terms. The study was carried out using a sentence acceptability judgment task, where participants rated the naturalness of the sentences. It also examined the influence of gender stereotypes encoded in the nouns and participants’ gender beliefs . The data on gender stereotypes of nouns and the acceptability of redundant female-marked professional terms provided empirical support for the design of Study 3. Additionally, the rating results offer a basis for selecting and developing stimuli in related research. Findings from Chapter 3 and 4, which examined sex, gender beliefs, and attitudes toward sexist and inclusive language, informed the focus of Chapter 5 on how these factors interact to shape perceptions of gendered representations. Chapter 5 reviews literature on the impacts of exposure to counter-stereotypical women and gender-fair language strategies. A between-participant experiment was conducted to explore how different linguistic representations (i.e. gender-neutral default vs. female-marked professional terms) of woman exemplars working in male-dominated fields influence perceptions of their achievements, and how this effect interacts with individuals’ sex, gender beliefs, and acquaintance with successful women.

Chapter 6 is a general discussion including four main sections. First, I discuss the overall roles of “female marker” and its intercorrelations with gender differences, gender stereotypes, and gender beliefs throughout the project. Then, I share valuable comments from participants that were not included in the Chapter 3, 4, and 5, as well as my experiences and observations during the data collection process. Finally, I highlight the impacts of this PhD project and propose directions for future research. Chapter 7 is a general conclusion, summarising the whole PhD thesis.

Chapter 2 Linguistic representation of women in Chinese: a cultural evolution perspective

According to Hellinger & Bußmann (2001, 2002, 2003, 2013), asymmetrical linguistic representations of women and men are consistently found to be fundamental in dozens of languages including Chinese. Reviews of these asymmetries in Chinese observe several key patterns as listed in the following (Moser, 1997; Farris, 1988; Ettner, 2002; Chan & Lin, 2019; Li, 2020). First, many characters containing the radical 女 /nǚ/ 'female' convey negative connotations. Second, male generics are observed in nouns and the third-person pronouns, with explicit gender markers often applied only to females. Third, terms of address for women often emphasise their age or marital status, while those for men remain generic. Fourth, word order in dyads of women and men typically place men first, reflecting men's higher societal importance. Fifth, Chinese proverbs disproportionately critique women's behaviours, roles, and the supposed necessity for male control, while rarely stereotyping men (see Zhang, 2002 for a review). Specific examples of these asymmetrical uses can be found in Chapter 3.

This PhD project examines attitudes toward and perceptions of sexist and nonsexist language in Chinese, with particularly focus on perceptions of gender markers. A comprehensive review of sexist and gender-inclusive language in Chinese, as well as the asymmetrical gender marking of nouns, is not included in Chapter 2 but is deferred to later chapters presenting the independent studies. However, within the broader context of asymmetrical linguistic representation of women and men, it is worth reviewing lesser known and rarely discussed women related representations. These will be introduced and discussed here in consideration of the historical and political context from a culture

evolution perspective, serving as supplementary background to the review of sexist language in Chapter 3 and the overall literature review of this research project.

This chapter discusses the asymmetrical representation of women and men in Chinese through five topics. In section 2.1, we review Li's (2020) updated analysis of characters containing the radical 女 /nǚ/ 'female', reflecting that even non-pejorative characters can indicate the unequal status of women compared to men. Section 2.2 examines the personification of "democracy", "science" and "morality" during the Republic of China period (1912 - 1949) and discusses traditional perceptions of gendered roles. Section 2.3 focuses on the semantic shifts of the address term 先生 /xiān shēng/ (originally meaning 'master', later used generically as 'mister'), a topic rarely-addressed in international journals but igniting heated debates in contemporary China, shedding light on asymmetrical use in forms of address. In section 2.4, we shifts our focus from asymmetrical representation of women and men to the imbalanced use of a specific term - feminism. This section explores the asymmetrical translations of feminism into Chinese as a western concept and discusses the stigmatisation of this term in online discourse. Finally, section 2.5 introduces the script exclusively created and used by women - 女书 /nǚ shū/ 'women's writing', which illustrates how female specificity, often as a disadvantage, can be leveraged to counter patriarchal language hegemony in traditional Chinese literature.

2.1 The character and the radical 女

The earliest forms of the character 人 /rén/ ‘person’, 女 /nǚ/ ‘female’, and 男 /nán/ ‘male’ can be traced back to Shang Dynasty (c. 1600 - c. 1046 B.C.) in oracle bone scripts and bronze scripts (Li, 2013). According to Li (2013), as pictographs, the ancient shape of 人 ‘person’ resembles a person standing in profile and the shape of 男 ‘male’ is a combination of field and a plough. However, the ancient shape of 女 ‘female’ resembles a person kneeling with arms crossed in front of the chest, reflecting the historical realities of women’ subservience and inequality.

Tang classified Chinese characters containing the radical 女 ‘female’ into four semantic categories (1988, p. 62): “(1) words[9] relating to marriage or giving birth, (2) kinship terms and terms regarding family relationships, (3) words referring to beauty, and (4) derogatory words or words with negative connotations[10]”. Building on this, Li (2020) examined all the 236 characters containing the radical 女 ‘female’ in the 7th edition of Modern Chinese Dictionary (2016), providing up-to-date corpus data to the construction of gender identity reflected in these characters containing the radical 女 ‘female’[11]. She found action verbs with the radical 女 ‘female’ are related to marriage, entertainment, sexual acts and pejorative emotions. The marriage-related verbs reflect traditional unequal gender roles in

[9] “Words” here in the original text of Tang (1988) refer to what we define as characters - the monosyllabic words - in this thesis.

[10] Also see examples of derogatory characters in Chapter 3 1.1 Sexist language in Chinese.

[11] The original examples include many uncommon characters, as the goal was to compare the characters in *Modern Chinese Dictionary* with the *Kangxi Dictionary*. I selected commonly used characters from Li (2020) as representatives. Additionally, some translations and pronunciations in the original text were inaccurate, such as 娜 as an adjective being mispronounced as it alternative pronunciation /nà/ (Li, 2020, p. 113) and 妖 /yāo/ mistranslated as “goblin” (Li, 2020, p. 113) . We provided what we believe are more accurate pronunciations and English translations.

China. The verb 嫁 /jià/ ‘to marry’ - a combination 女 ‘female’ and 家 /jiā/ ‘home’ - is for a woman marrying to a man, symbolising the woman being “offered a home”; while for men, 娶 /qǔ/ ‘to marry’ merges 取 /qǔ/ “to take” and 女 ‘female’, implying the man "takes" the woman. The entertainment-related verbs such as 嬉 /xì/ ‘to amuse’ or 耍 /shuǎ/ ‘to play, to fool around’ indicate women play a vital role in entertainment but not men. Finally, most verbs related to emotions in this group carry negative connotations (e.g., 嫉妒 /jì dù/ ‘to envy’, 嫌 /xían/ ‘to dislike’). These verbs are often associated with traits traditionally attributed to women, reflecting societal concept of women's behaviour in historical Chinese culture. However, in modern Chinese, although the derogative verb 嫌 /xían/ ‘to dislike’ still contains the female radical 女, which is a fixed part of the character’s written structure, its semantic use has become less gender-specific. A random sample of 100 concordance lines from the mega-corpus Chinese Web shows women being agents of 嫌 /xían/ ‘to dislike’ accounts for 25% of cases, with men, institutions, and even countries appearing as agents in the rest. This indicates that, despite its orthographic inclusion of the female radical, the verb **嫌** is no longer limited to female-associated contexts in actual language use. The female radical remains present in all instances, but its symbolic association with women seems to have weakened over time.

In addition, Li (2020) found adjectives containing the radical 女 ‘female’ tend to polarised into either commendatory or derogatory categories. Positive terms dominate with approximately 75% of the adjectives, focusing on women’s beauty (e.g., 妍 /yán/ ‘beauty', 娜 /nuó/ describing ‘a graceful and delicate posture’) or virtue (e.g., 娴 /xián/ ‘quiet and

gentle, skillful'). However, while these words may seem flattering without pejorative meaning, their female-specific focus reinforces the notion that women are "entirely constituted by the gaze of man" (Williamson, 1985, p80), reflecting how Chinese character formation contributes to gender bias (Xia and Miller, 2013). Conversely, negative adjectives such as 媸 /chī/ 'ugly' (in contrast to 妍 /yán/ 'beauty'), 妖 /yāo/ 'dazzling but evil' and 奸 /jiān/ 'deceitful and cunning') describe women's ugliness or perceived misbehaviour, further perpetuating traditional stereotypes about female conduct.

2.2 Mr. Democracy, Mr. Science and Miss Moral[12]

In October 1911, 辛亥革命 'the 1911 Revolution' broke out, marking a historic effort to overthrow the autocratic monarchy of Qing Dynasty and to establish a democratic republic. This revolution successfully ended over two millennia of imperial rule in China and lead to the founding of the Republic of China. In September 1915, 陈独秀 Chen Duxiu[13], a leading figure of the democratic revolution, founded 《青年杂志》 'Youth Magazine', also known by its French title *La Jeunesse*, which was later renamed as 《新青年》 'New Youth' in Chinese. This marked the beginning of the New Culture Movement, an intellectual campaign advocating against feudalism and promoting democracy and science. Equipped with evolutionary theory and ideas of individual liberation, the movement fiercely criticised Confucianism and traditional morality, while championing new ethical standards, modern literature, and opposing classical Chinese writing[14]. Within this broader historical context, the personification of democracy and science is particularly worth noting. In Chen Duxiu's 《"新青年"罪案之答辩书》[15] 'Defendant's Statement for 'New Youth's' Alleged Crimes', he propose to support 德先生 'Mr. Democracy' and 赛先生 'Mr. Science'. 德 /dé/ and 赛 /sài/ are the initial character for the transliteration of the English words democracy (德莫克拉西 /dé mò kè lā xī/) and science (赛因斯 /sài yīn sī/).

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[12] Given the context, "moral" should be "morality", but we respect the original text when this term "Miss Moral" was first introduced.

[13] In this thesis, the romanised Chinese name is introduced in the original order with the surname appearing first.

[14] Here "classic Chinese writing" refers to 文言文 - the written language used in ancient China from the Zhou Dynasty to the early 20th century. This classic writing features in conciseness, formality, and often ambiguity, with minimal use of particles and a reliance on context to convey meaning.

[15] This article was published in January 1919, Le Jeunesse 'New Youth' Volume 6 Number 1. The original text can be checked in https://www.marxists.org/chinese/chenduxiu/marxist.org-chinese-chen-19190115.htm.

What is even more intriguing is that, following the same approach, Wu Zhihui, in his lecture 《一个新信仰的宇宙观及人生观》‘A New Cosmology and View of Life’, introduced the concept of 穆姑娘 'Miss Moral’ for the first time to correspond with Mr. Democracy and Mr. Science (1924, 1977, p. 411):

“我国已迎受到两位先生， — “赛先生”“台先生”[16] —- 迎之固极是矣。但现在清清楚楚，还少私德的迎受。（只零星的拣些较可作恶者，或胜奇，或细小者，偷偷摸摸，大家拉点扯点，未曾正式的鼓乐迎娶。） … 就是可以迎他来，做我们孔圣人续弦的周婆的，叫做“穆勒儿”（Moral） 姑娘的便是。请她来住中馈，亦且无妨牝鸡司晨。”

Our country has already welcomed two misters - Mr. Science and Mr. Democracy - which is certainly the right course. However, it is clear that we still lack the reception of personal morality. (We only selectively adopt some peculiar or minor moral principles, in a furtive and fragmented manner, instead of formally welcoming the bride with drums and music[17].) We can introduce a ‘second wife’ for Confucius. Simply call her Miss. Moral. We invite her to be the core value of family and society. It would not hurt to have her to take on this leading role[18].

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[16] Both 德先生 /dé xiān shēng/ ‘Mr. De’ and 台先生 /tái xiān shēng/ ‘Mr. Tai’ are different transliterations of Mr. Democracy, with 德先生 being the mainstream one.

[17] In the original text, Wu used the verb 迎娶 ‘to welcome and to marry’ emphasising the meaning that a man marries a woman and welcomes her with his family.

[18] In the original text, Wu used a Chinese idiom 牝鸡司晨 /pìn jī sī chén/ literally meaning ‘a hen crowing at dawn’ as a metaphoric expression of women taking the leading role.

He continued to propose (p.412) that “穆姑娘” 治内，“赛先生”请他兴学理财，“台先生”请他经国惠民 ‘Miss Moral governs the domestic (overseeing domestic morality), Mr. Science promotes education and manages economics, and Mr. Democracy manages the country and benefits the people’.

By the time Wu made the above statements, it had been five years since the May Fourth Movement, an era marked by an unprecedented surge in calls for women’s liberation and gender equality. However, it is evident that his metaphors for democracy, science, and morality, along with his proposals on the duties of these personified roles, reflected the deeply rooted beliefs about women and men and the different expectations placed upon them. Assigning democracy and science as men but morality as women reflects established gender stereotypes during the Republic of China period. This division reinforces traditional gender expectations: Miss Moral governs the domestic sphere, while Mr. Democracy and Mr. Science dominates the public sphere, mirroring the Chinese proverb 男主外，女主内 ‘men manage external affairs, women manage the home’. Although the action of associating women with morality itself appears positive, it tends to embody benevolent sexism by idealising women’s moral superiority (Glick & Fiske, 2001) while restricting them to the private sphere. Finally, Wu’s metaphors further highlight traditional gender hierarchies. Miss Moral was portrayed as a bride that could be brought into the household and a ‘second wife’ for Confucius[19], reflecting women's dependence on and subordinate role to men in traditional marriage.

[19] Confucius (551–479 BCE) is the English name for 孔子 (kǒng zǐ). He was one of the most influential philosophers in ancient China. He emphasised morality, respect for elders, and social harmony. His teachings, recorded in the Analects, shaped Chinese culture, government, and ethics, influencing East Asia for centuries.

2.3 先生，generic or male’s privileged address term?

As introduced in the previous section, during the Republic of China period，the concepts of 德先生 ‘Mr. Democracy’, 赛先生 ‘Mr. Science’ and 穆姑娘 ‘Miss Moral’ were introduced from English. Within the discourse context, it is evident that the term 先生 /xiān shēng/ in 德先生 and 赛先生 here refers to males, thus “Mr.” in English translation. On the other hand, 姑娘 /gū niāng/ literally ‘aunt and mother’ as in 穆姑娘 is a generic term to address young and unmarried women, thus “Miss” in English translation. However, 先生 was not originally a direct equivalent of “mister”. With its literally meaning as ‘earlier born’, records of 先生 being an honorific can be traced back to pre-Qin period (221 B.C.), with its early meanings centred around 'father or elder brother,' 'senior scholar,' and 'elderly teacher.’ Interestingly, during the same period of the introduction of Mr. Democracy, Mr. Science and Miss Moral, 先生 as an address term was once popular among young, intellectual women.

This use has gradually lost the popularity in the past 50 years, today the primary use of 先生 in Chinese is generally a polite address term for men, aligning with “mister” in English. In rare cases, high-profile women are still addressed as 先生 in media: born during the Republic of China period, all of them were distinguished in their fields with high social prestige such as 杨绛[20] Yang Jiang and 叶嘉莹 Ye Jiangying[21]. Disparities between these two uses of 先生 ignited heated debates. The younger generation of women oppose

[20] Yang Jiang (1911 - 2016) was a renowned Chinese writer, translator, and playwright. She was known for translating *Don Quixote* into Chinese and celebrated for her essays and memoirs.

[21] Ye Jiaying (1924 - 2024) was a distinguished Chinese scholar and poet. She was renowned for her expertise in classical Chinese literature, particularly poetry.

addressing distinguished women as 先生, arguing that its modern association with “mister” obscures female identity and renders women invisible in contributions. Supporters counter that 先生 as an honorific meaning ‘teacher’[22] is the original use in Chinese which has existed for centuries. Since many cases of addressing women as 先生 can be found throughout the history, they see no reason why it cannot be used for exemplary women today. Xing (2005) and Pan (2024) investigated the semantic shifts of 先生 and found these shifts were related to changes in political policies, the development of women’s status, and increased Sino-British political and economic interactions. Building on Pan’s (2024) organisation of historical records and related literature, this section critically evaluates the validity of supporters’ claims and examines whether addressing women as 先生 is appropriate in modern contexts.

According to Pan (2024), examples of women being addressed as 先生 can be found in historical contexts such as in Biography of Sun the Virtuous Widow[23], referring to ‘teacher’; in Yan Zi Jian[24], referring to ‘doctor’; in Journey to the West[25], referring to 占卜先生 ‘fortune-tellers’; in Dream of the Red Chamber[26] referring to 说书先生 ‘storytellers’. As can

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[22] This use of 先生, pronounced as *sensei*, is still used in modern Japanese to refer to teachers and doctors.

[23] The Qing dynasty essay《孙贞节妇传》: “余少时见里中有一老妇, …, 人皆呼之女先生” ‘When I was young, I saw an elderly woman in the village, …, everyone called her female xiansheng (teacher)’.

[24] The legendary Ming dynasty play《燕子笺》: “是一位女先生，奴家请来看霍郎病的” ‘(She) is a female xiansheng (doctor) whom I invited to see young master Huo’s illness’.

[25] One of the the Four Great Classical Novels in Qing dynasty《西游记》: “周易文王，孔子圣人，桃花女先生” 'King Wen of Zhou from the *Book of Changes*, Confucius the Sage, Madam Peach Blossom xiansheng (fortuneteller)’.

[26] One of the the Four Great Classical Novels in Qing dynasty《红楼梦》: “女先儿回说：倒有一段新书，是残唐五代的故事” ‘The female xianer’ (storyteller) replied: there is indeed a new tale, a story from the late Tang and Five Dynasties period’. Here 先儿 is a variant of 先生.

be seen from these examples, first 先生 was not always used as an honorific to teacher, but also to less prestige professions such as fortune-tellers or story-tellers. More importantly, although 先生 was occasionally observed to address women, the usage was typically qualified with a female-marker (see examples of the original texts in footnotes 14 - 18), reflecting an asymmetric use of 先生 to women and men. This is a phenomenon of "male generics" where many nouns appear to be gender-neutral, but covertly refer to men as default (Hellinger & Bußmann, 2002). Therefore, the historical use of 先生 for women in ancient China, which was often conditional and not always honorific, does not support the modern applications as a title for distinguished women.

Addressing women as 先生 generally gained popularity after the 1911 Revolution when the then Nanjing Provisional Government ordered the elimination of all the hierarchical and class-based addressing titles such as 老爷 'master', 大人 'your highness' and to use politically neutral terms such as 先生 for mutual address[27]. The New Culture Movement, along with the resulting social trend toward gender equality, further promoted the widespread use of addressing women as 先生 (Pan, 2024). As Shi (1948, as cited in Pan, 2024) noted before the Republic of China, 先生 as a honorific was privileged held by men, while during the Republic of China some women gained the equal rights with men, these women also earned the privilege to share the title. This highlights two key points: first, it was acknowledged that before the Republic of China period, 先生 was rarely used for women. More importantly, even when 先生 was more often used for addressing women, it

[27] The order was《临时大总统令内政部通知各官署革除前清宫厅称呼文》'*Provisional presidential order: Notice to all departments from the Ministry of Internal Affairs to abolish titles from the Qing Court*'.

was never truly a generic honorific as this use was restricted to two specific contexts. First, addressing single women, either unmarried or divorced (Qian, 1940, Queji, 1949 as cited in Pan, 2024). Second, addressing female intellectuals[28] and new-style women[29] (Xing, 2005). Some female intellectuals were inclined to be addressed as 先生 because of the original meaning of 先生 'first born, earlier born' highlighting the age or experience difference rather than the gender difference (Bao, 1931, as cited in Pan, 2024). The most famous example of this use was Chairman Mao's[30] letter to 宋庆龄[31] Soong Ching-ling addressing her as 庆龄先生 /Ching-ling xiān shēng/. It was regarded that the current use of 先生 to address distinguished women with great contributions to education and culture may come from the practice of Mao (Xing, 2005).

However, oppositions to addressing women as 先生 persisted due to concerns on the potential confusion over women and men, as 先生 after all was a honorific historically referring to men (Huang, 1916, as cited in Pan, 2024). Critics also questioned the necessity of an extra addressing term as 先生 for women, given the existing terms such as 小姐 'Miss', 太太 'Madam', 夫人 'Lady' were already established (Wu, 1949, as cited in

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[28] These intellectuals usually received western higher education in the early twentieth century.

[29] Within the context of the New Culture Movement, we interpret this "new-style women" as those who embraced modern ideas of gender equality and challenged traditional roles of women who were confined to domestic duties.

[30] Mao Zedong (1893 - 1976), the first chair of the People's Republic of China.

[31] Soong Ching-ling (1893 - 1981), known as "mother of modern China", Honorary President of the People Republic of China and admitted to the Chinese Communist Party in 1981. Her husband was Sun Yat-sen, the provisional first president of the Republic of China and the first leader of the Kuomintang.

Pan, 2024). On the other hand, surprising to us, 先生 was used as slang for prostitutes[32] during the Republic of China period in Shanghai - the hub of the New Culture Movement (Hershatte, 2012), raising strong concerns about disrespect to other women addressed as 先生. Meanwhile when disputes were found in whether it was appropriate to address women as 先生, semantic space of 先生 also subtly changed with the introduction of the English addressing title “mister” because of closer Sino-British political and economic interactions (Pan, 2024). At first, different transliterations were used to translate 先生 with no standard one. By the late 18th century, 先生 started to be preferred as the translation to “mister” among Western sinologists in English-Chinese dictionaries. This mutual translation was later adopted in dictionaries by Chinese scholars. Gradually, the semantic spaces of 先生 and “mister” overlapped, with 先生 returning back to a male-specific honorific. As the renowned Chinese writer 鲁迅 Lu Xun observed in a 1933 letter, the addressing title 先生 has lost it original meaning, and now it is merely a translation of the English ‘mister’[33] (The Complete Works of Lu Xun, 1995).

After the establishment of the People’s Republic of China in 1949, the Chinese Communist Party (CCP) regarded 先生 as a reminiscent of Kuomingtang of China indicating old societal customs. Therefore, CCP emphasised the elimination of a range of titles including 先生 even in private correspondence. The use of job titles and particularly 同志 /tóng zhì/

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[32] Referring to prostitutes as 先生 seems a euphemistic way of saying which have originated from professions related to ballad singers and storytellers as such individuals were also addressed as 先生 (Pan, 2024).

[33] The original text used 密斯偷 /mì sī tōu/ as a transliteration of “mister”. The inclusion of the character 偷 /tōu/ meaning ‘to steal’ reflects Lu Xun’s interpretations of 先生 losing its original meaning snd being stolen to serve merely as a translation of “mister”.

literally ‘same goal/will’ meaning ‘comrade’ were encouraged to replace them (documents of CCP party organisation, 1946 to 1949, as cited in Pan, 2024). Henceforth, 先生 as a honorific was generally used for respected non-CCP figures (Ge, 2018), 同志[34] gradually became the mainstream of the addressing term with its politically-equal, gender-neutral feature. After that, 先生 was rarely used until China’s Reform and Opening-up after 1979 when the concept of 先生 as a translation of mister began to flow back into mainland China from regions of Hong Kong, Macau, and Taiwan (Bao, 1986).

Through the brief historical review of the use of 先生, we could conclude that the adoption of it as a title for women during the early 20th century and the contemporary resistance to this use 先生 do not contradict to each other but are tied to the semantic shifts of 先生. Both actions reflect women’s fight for greater recognition and rights. Consistent with the new wave of ideas on women’s liberation and gender equality, the earlier adoption represents a deliberate effort to challenge gendered linguistic boundaries(Gong, 1921, as cited in Pan, 2024). However, oppositions at the time highlighted societal reluctance to fully accept women into the traditionally male-dominated semantic domain of 先生, compounded by the term's ironic slang association with prostitutes. Today, with the reinforced association of 先生 and “mister” as a polite addressing term to men in general, addressing distinguished women particularly with this title is increasingly seen as inappropriate (Zhou, 2003; Chen & Chen, 2015). The inappropriateness lies not only in potential gender confusions. More importantly, this issue lies in the asymmetrical 先生’s

[34] The use of 同志 to some extent reached an ideal inclusivity as a generic addressing term between the early years of the establishment of People’s Republic of China and China’s Reform and Opening-up (around 1949 - 1980). However, 同志 was gradually used as a slang for male homosexuals increasingly visible since 1990s (see Ho et al., 2018 for an overview).

application as an honorific (Zhou, 2003). If 先生 had been used symmetrically as an honorific for both men and women who made significant contributions to culture and education, the resistance to addressing women as 先生 would not be so strong and widespread. However, while men are recognised by gender-neutral titles reflecting their contributions and professions such as 泰斗 ‘doyen’, 院士 ‘member of Chinese Academy of Sciences or Engineering’, 教授 ‘professor’, women earning the same prestige being addressed a title as 先生 seems reductive, even sarcastic within the contemporary context. What raises the greater concern is the underlining motive for the persistent use of 先生 as a title for distinguished women, despite the public and scholars’ arguments that this practice raises significant risks of obscuring women’s achievements and diminishing their visibility.

2.4 Feminism, feminist, femin-fist[35]?

As we introduced earlier in the General Introduction, disputes were found in translations when the concept of gender first entered Chinese context. The translation of feminism met similar issues. The western concept of feminism was introduced to China at the beginning of the 20th century from Japan, so adapting the Japanese translation, the Chinese translation for feminism was 女权主义 ‘ women’s power/rights + ism’ during this period. The character 权 in 女权主义 can mean ‘rights’ as well as ’power, privilege’ in Chinese. Therefore, this translation reflected strong associations with women’s political activism and demands of equality. According to Xia (2016), the term 女权 ‘women’s power/rights’ first appeared in China as a translation of Western feminism in 1900, when the *Qingyi Newspaper* (清议报) published a translated article by Japanese thinker Ishikawa Hansan on the rise of women’s power and rights. Shortly thereafter, Wu Mengban[36], a progressive Chinese woman intellectual, used the term in her proposal for the Shanghai Women’s Society. She emphasised that women’s power and rights were a defining issue of nineteenth-century global progress, attributing this to advances in women’s education, and predicted that women’s power and rights and learning would rapidly develop in twentieth-century China. Wu’s essay is considered a foundational text in modern Chinese women’s history and one of the earliest discussions of the idea of a “women’s century” in Chinese discourse. However, after the founding of the People’s Republic of China in 1949, feminism as an independent discourse was suppressed under official Marxist frameworks. The All-China Women’s Federation (ACWF), the state-sponsored women’s organisation, promoted a version of gender equality tightly aligned with the Party ideology, rejecting

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[35] Feminist + fist = femin-fist. The English compound *femin-fist* is a coined term created by the author to translate the original Chinese expression 女拳 (nǚ quán).

[36] In Chinese: 吴孟班

terms like 女权主义 ‘women’s power/rights + ism’ as “bourgeois” and politically problematic (Min, 2008).

According to Min (2008), by the 1980s and 1990s, with the re-emergence of women’s studies and increasing contact with Western feminist theory, Chinese scholars began revisiting the concept of feminism. However, the political weight of 女权主义 ‘women’s power/rights + ism’ led many to adopt a new translation: 女性主义, often rendered ‘femininity + ism’ or ‘woman + ism’. Scholars such as Dai (1999) and Zhang (1992) used 女性主义 ‘femininity + ism’ strategically, not only to soften feminism’s perceived militancy but also to broaden its scope by incorporating poststructuralist ideas of gender and sexual difference.

The 1993 Tianjin workshop marked a key moment in Chinese feminist discourse, where scholars and activists debated the translation of the term feminism (Min, 2005). Most participants favoured 女性主义 ‘femininity + ism’ over 女权主义 ‘women’s power/rights + ism’, viewing the former as better aligned with China’s cultural and historical context. While 女权主义 ‘women’s power/rights + ism’ was associated with Western political struggles for equality, 女性主义 ‘femininity + ism’ emphasised difference, subjectivity, and cultural expression. This shift reflected a broader “cultural turn” in Chinese women’s studies, distancing the movement from overt political rhetoric and reimagining women as independent subjects. The softer, more culturally rooted term was seen as more empowering and socially acceptable in post-socialist China.

When the character 权 in 女权 is interpreted as ‘power, privilege’, feminism as 女权主义 is often distorted into a derisive term to stigmatise feminists as being hungry for money and privilege over men. This framing, driven largely by anti-feminist voices, particularly male netizens on forums and social media, portrays feminists as demanding special treatment rather than equality (Ko & Wang, 2006; Wu & Dong, 2019). Even worse, the stigmatisation continues with the term 中华田园女权[37] ‘Chinese rural feminism’ emerging in online discourse. Yang, Guo, Arteel (2023) analysed 2014 Zhihu[38] texts related to “rural feminism” and identified a rhetorical strategy used by antifeminists to misrepresent feminism. These individuals defined “rural feminism” as pseudo-feminism to punish the alleged inappropriate and unfair feminist demands such as increasing men’s share of household chores or granting women greater financial control in marriages[39]. In contrast, they promoted the “authentic" or “mild” feminism aligned with their own interests, requiring absolute equality obligations between women and men in marriage such as advocating for women to give up 彩礼[40] /cǎi lǐ/ ‘bride price’ or to shoulder more housing expenses.

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[37] The term 中华田园女权 ‘Chinese rural feminism’ came from 中华田园犬/猫 ‘Chinese rural dog/cat’ which are local mongrel dogs and cats different from the western concept of purebreds. This term itself is filled with discrimination and antagonism.

[38] Zhihu, in Chinese 知乎 meaning ‘do you know’, is one of China’s largest question-and-answer forums.

[39] This is not about taking the husband’s income for the wife’s own interests, but because women usually take on the role of managing life expenses, caring for children and elderly family members, and handling household shopping.

[40] 彩礼 is a traditional custom in Chinese culture where the groom’s family provides gifts and usually monetary offerings to the bride’s family in marriage negotiations. The original purpose of this is to show the groom’s respect, goodwill, sincerity and capabilities to the bride’s family. However, in some cases this custom has been turned into a means of excessive competition driven by monetary desires. This is particularly evident in families favouring sons over daughters in which unreasonably high bride price becomes a symbol of objectifying and commodifying daughters.

Similarly to Chinese rural feminism, another term to stigmatise feminist is 女拳. The character 拳 /quán/ ‘fist, boxing’ is a homophone to 权 /quán/ ‘right, power, privilege’, Therefore, 女权 /nǚ quán/ is satirically transformed to 女拳 /nǚ quán/ by antifeminists. The actions of unequivocally identifying and criticising sexist behaviours and promoting equal and fair rights for women are maliciously labelled as 打拳 ‘punching, boxing’ - swinging the fists on social media. 女拳 ‘*femin-fist’* was even endorsed by China Communist Youth League (CCYL) in their official Weibo post on 12th April, 2022[41]. The post was a response to feminist’s backlash against a previous CCYL post comparing the fight against Covid-19 to the Long March (1934 - 1936) with six pictures in which women were almost entirely invisible, despite their significant contributions in both contexts. This marginalisation of women sparked criticism and anger from female users of Weibo. Rather than actively addressing and mediating this issue, in the 12th April post those who advocated for women’s visibility were alleged as extreme feminists being 网络毒瘤 “network cancer”. They were entitled as “femin-fists” and were accused of creating 性别对立 “gender antagonism” for internet exposure and profits rather than genuinely advocating for women’s rights.

While unreasonable and radical remarks do exist among advocates for women’s rights, overgeneralising these extreme actions to all feminists shows how feminism can be misunderstood or manipulated in online discourse. In summary, these strategic redefinitions of feminism and feminists as "rural feminism’ and “femin-fists” seek to

[41] The original post can be check through this link: https://weibo.com/3937348351/Lo9zyhPn5?from=page_1001063937348351_profile&wvr=6&mod=weibotime&type=comment

minimise the perceived threat of feminism, thereby safeguarding men’s collective interests and maintaining the patriarchal status quo (Yang, Guo, Arteel, 2023).

2.5 女书 - the world only female-specific writing

Sometimes, female specificity is not merely a disadvantage. In a patriarchal world, it can serve as a strategic detour and a source of empowerment. In the dystopian novel *Native Tongue* (1984), linguist Suzette Haden Elgin created a language Láadan for the characters in the book to express the worldview from women's perspective only. This unique communication system challenged and overthrew the patriarchy and liberated the characters from oppression.

The ground-breaking discovery of 女书 /nǚ shū/ "women's writing" (henceforth Nüshu) reveals that a language expressing women's perspectives does not only exist in scientific fiction. Nüshu is considered to be "the world's only script designed and used exclusively by women" (Chen, 2018, p.47). Nüshu was developed and circulated among the rural women of the Xiao River basin of Jiangyong County, Hunan Province, China[42]. This area is special as it is located at the geographic border where three provinces - Hunan, Guangdong, and Guangxi[43] - and three counties - Jiangyong, Daoxian, and Jianghua Yao Autonomous County[44] - meet. Therefore, Nüshu is a unique fusion of Han Chinese traditions and Yao ethnic customs. Derived from the logographic Chinese characters, characters of Nüshu are phonetic and syllabary: generally each character representing one spoken syllable of the local dialect[45]. The characters consist of only four types of strokes: dots, vertical lines, diagonal lines, and arcs, featuring elongated diamond-shaped italic forms, so characters of Nüshu are also called 蚊形字 "mosquito-shape character". The earliest found artefact with

[42] In Chinese: 中国湖南省江永县潇水流域

[43] In Chinese: 湖南省、广东省、广西省

[44] In Chinese: 江永县，道县、江华瑶族自治县

[45] In Chinese: 城关土话

the Nüshu script is a bronze coin minted during the time of 太平天国 ‘the Taiping Heavenly Kingdom’ (1851 - 1864). Social reforms and several policies regarding gender equality were introduced in this rebel kingdom in ancient China from 1851 to 1864. In Chinese (as the Han language), the eight Nüshu characters on the coin mean 天下妇女, 姊妹一家 ‘all the women in the world are sisters of the same family’.

During the feudal era of China, women had very limited opportunities to receive formal education. Nüshu, as a written communication form created by women during the era, are passed down through mothers teaching daughters, mutual learning and practising for fun among sisters and friends. The most comprehensive researching materials of Nüshu are the five volumes of China Nüshu Collection[46] edited by Zhao and her team in 2005, containing over 95% of all the existing original documents written in Nüshu. In addition, Liu (e.g. 2001, 2015, 2017) explore Nüshu's historical, emotional, and cultural significance as a unique female writing system in rural China. More recently, Xie (2011) conducted a critical study of over seventy Nüshu texts from Gao Yinxian 高银仙[47], with transcriptions, translations, and annotations across all major genres, offering direct insight into Nüshu’s original form, sound, and meaning.

Nüshu was generally used for autobiographies, letters between sworn sisters[48], documentary narrative of social and family events, and rewriting traditional folktales narrated in Chinese. Particularly, the Nüshu versions of historic events and traditional

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[46] In Chinese:《中国女书合集》.

[47] Gao Yinxian 高银仙 was the first scholar-identified practitioner of Nüshu, and one of the two major informants of Nüshu in the 1980s. The other one was Yi Nianhua 义年华 born in 1907 in Tangxia Village.

[48] The sworn sisters are called 老同 /lǎo tóng/ literally ‘old same’, the supportive relationship bond two women together for life.

folktales empower women with their own voices to challenge patriarchal norms (Chan, 1997; Chen, 2018).

Having analysed classic Nüshu adaptions of folktales, Chan (1997) argued that these rewritings serve as both political and collective enunciation for women. One example of political enunciation is the Nüshu version of the folktale *The Flower Seller* adapted from the Chinese story *Judge Bao Furiously Executes Imperial Clansman Cao*[49]. While the original Chinese version highlights Judge Bao's intelligence and impartiality, Nüshu's retelling focuses on Lady Zhang and shifts her from a passive victim to a proactive figure. Lady Zhang defies social expectations as she supports her family through her own efforts and bravely resists Clansman Cao's forceful attempts to make her his consort. Although still brutally murdered by Cao, this time Lady Zhang found her own voice, even as a ghost. She reported the crime to Judge Bao who eventually sentences Cao to death despite pressure from the empress. This reconstruction of the story contrasts sharply with the traditional Chinese version where Lady Zhang is only a victim of male brutality and silenced by patriarchal storytelling. Even beyond this, through such adaptations, Nüshu not only reclaims women's perspectives from the traditional passive or invisible roles but also protest against the marginalisation and suppression of women in folktales.

Furthermore, Nüshu also challenges the moralistic Confucian patriarchy through explicit depictions of women's emotional and sexual desires. Chan (1997) analysed two examples to illustrate this transformation. The first one is the Nüshu retelling of *The Butterfly Lovers*[50]. Unlike traditional Chinese versions of the story which avoid any mention of the

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[49] In Chinese: 《包公怒斩曹国舅》.

[50] In Chinese: 梁山伯与祝英台.

female body, the Nüshu version contains descriptions of the female protagonist Zhu Yingtai's body and sexual identity. Similarly, the Nüshu retelling of *The Maiden* Meng Jiang[51] diverges from the traditional Chinese narrative as this version indicates Meng Jiang's sexual and love desire when she decided to marry the male protagonist Fan Qiling and adds a vivid descriptions of the their happy married life. In contrast, neither female desires nor happiness of married life was mentioned in the Chinese versions, all of them emphasise Meng Jiang's virtue and grief over her husband's death from a male-centric perspective. Therefore, these adaptations of folktales highlight Nüshu as a tool that resists the erasure of women's bodies, desires, and autonomy imposed by Confucian patriarchy.

Unfortunately, today there is no longer any natural inheritors[52] of Nüshu - women who grew up immersed in Nüshu culture and used it for daily communication throughout their life, as the last natural inheritor, Yang Huanyi 阳焕宜, passed away in 2004. As for the preservation of Nüshu, in the 1980s, while scholars showed great enthusiasm for preserving Nüshu, local authorities in Jiangyong did not pay as much attention, prioritising economic development of the region (Liu, 2017). It was not until two decades later that the government began formal preservation efforts. As part of the initiative to seek UNESCO intangible cultural heritage recognition, the Jiangyong Nüshu Museum was established in 2002. Since 2003, six women were officially qualified as Nüshu appointed transmitters[53] including Gao Yinxian's granddaughter Hu Meiyue 胡美月 and granddaughter-in-law Yi Yunjuan 义运娟, Pu Lijuan 蒲丽娟, Hu Xin 胡欣, He Yanxin 何艳新, and 何静华 He

[51] In Chinese: 孟姜女.

[52] A natural inheritor of Nüshu means she acquired and practiced Nüshu through traditional, community-based transmission rather than formal education or government-sponsored initiatives.

[53] Compared to natural inheritors (自然传人), appointed transmitters (命名传人) often acquire Nüshu through institutional training and perform it as part of heritage conservation programs.

Jinghua. These appointed transmitters were tasked with teaching Nüshu to local girls, composing biographical texts in Nüshu, and serving as guides of the Jiangyong Nüshu Museum.

Women, long positioned as "the weak of society" wield Nüshu as "the weapon of the weak" to empower and de-silence themselves (Liu, 1997). Nüshu practitioners are proud of their unique female-exclusive communication system, as one said “Men have their script, books and texts; they are men of honour. We have our own script, books and texts; we are women of honour” (Chen, 2018, p.48).

Chapter 3 - Study 1: Attitudes toward sexist/nonsexist language in Chinese

3.1 Abstract

In this chapter, Fan and Lawyer provide the first empirical data on attitudes toward sexist and inclusive language in speakers born between 1980 and 2004 and living in Mainland China. To achieve this, they created a Chinese Mandarin (simplified) adaptation of the Inventory of Attitudes toward Sexist/Nonsexist Language - General (IASNL-G, Parks & Roberton, 2000). The adapted inventory measures attitudes in three specific aspects: abstract beliefs about sexist language, recognition of sexist language, and willingness to use gender inclusive language.

Using the adapted Chinese version of IASNL-G, Fan & Lawyer explore specific attitudes toward language reform and inclusive language in Chinese among Mainland China's younger individuals born between 1980 and 2004. In addition, they examine which factors may contribute to individual differences in these attitudes toward sexist and inclusive language, including an individual's sex, age, and gender beliefs (measured by the Modern Sexism Scale (Swim et al., 1995) and the Neosexism Scale (Tougas et al., 1995)).

Data from 303 participants (153 women, 150 men) were collected from three decade cohorts (92 in 1980s, 108 in 1990s, and 103 in 2000s) across main cities of Mainland China. A multiple linear regression model showed an evolving trend with younger individuals in this study demonstrating a stronger preference for language reform and inclusive language. In general, most women (62%) indicated a supportive language attitude, while most men showed a neutral (53%), or even negative attitude (30%). Results

of the multiple linear regression model reflected that even after controlling for other variables including gender beliefs, women generally hold more favourable attitudes toward language reform and inclusive language than men.

Interestingly, this gender gap appears to be driven in part by differing degrees of acknowledgement of continuing sexism in society, as women's greater acknowledgement significantly predicts their more favourable general attitudes towards inclusive language, while the effect was not similarly observed for men. This leads to significantly more positive attitudes in women compared to men, even when both groups have equally high levels of acknowledgement. These findings underscore the importance of considering the potentially different motivations among men and women for supporting or avoiding gender inclusive language in Mainland China.

3.2 Introduction and literature review

Chinese is categorised as a grammatically genderless language because most nouns in Chinese are grammatically, semantically, and referentially gender neutral (Stahlberg et al., 2007). This includes the system of pronouns, where in spoken Mandarin pronouns are not differentiated by gender, although a gender distinction in the third person does exist in written simplified Chinese. It has been pointed out that despite the lack of gender marking in Chinese, this does not necessarily indicate that Chinese is a gender-inclusive language without gender biases and linguistic sexism (Ettner, 2002; Moser, 1997; Farris, 1988). While attitudes toward linguistic sexism and the use of gender inclusive language have been investigated in English for more than two decades (cf. Sczesny, Moser & Wood, 2015; Douglas & Sutton, 2014; Parks & Roberton, 2000, 2004, 2008), the authors are not aware of any studies addressing this issue in Chinese. The current study adapts Parks and Roberton's (2000) Inventory of Attitudes Toward Sexist/Nonsexist Language to explore attitudes toward sexist and inclusive language in speakers of Mandarin simplified Chinese (henceforth Chinese) born between 1980 and 2004. Although this study acknowledges non-binary gender identities, it is based on a binary gender framework due to the very limited number of non-binary participants. Furthermore, the questionnaire used in this thesis does not include any linguistic tools or items specifically designed to address non-binary gender representation.

3.2.1 Sexist language in Chinese

Gender bias and sexist language is found in a number of areas in Chinese, particularly related to terms of reference and personal nouns, as well as in descriptive adjectives semantically tied to women. An example of the latter is the inclusion of the semantic radical 女 ‘woman/female’ in other characters with negative connotations not specifically related to women, including 婪 ‘greedy’, 妒 ‘jealous’, or 奸 ‘treacherous’ (Sun, 2010; Moser, 1997; Farris, 1988). This visually apparent connection between the representation of women and the pejorative meanings in Chinese writing system indicates attitudes toward women derived from ancient Chinese society (Ettner, 2002). Proposals for replacing this radical with other gender neutral radicals such as 歹 ‘evil’ or 人‘person’ have been put forth but have not been adopted (Ettner, 2002). In terms of pronouns, 她 ‘she’ was created as a specific feminine third person singular pronoun in 1920s including the semantic radical 女 ‘woman’ and the same phonological radical 也 /tā/ as is found with 他 ‘he’ (Ling, 1989). However, prior to the differentiation between genders in the third person written forms, 他 ‘he’ was believed to be a gender neutral pronoun, structured with the semantic radical 人 ‘person’ (Huang, 2015) and therefore not specifically male. The pronoun 他 ‘he’ currently enjoys status as a male/generic pronoun, similar to the (now dispreferred) use of English generic ‘he’ (Sluchinski, 2021; Zhong, 2015; Moser, 1997).

In terms of reference, men are generally addressed as 先生 ‘sir/gentleman’ (archaically meaning ‘master’ or ‘teacher’), while women are addressed according to their age, marital status, or even social contributions. There are exceptions to this, such as women in academia who may be respectfully addressed as 先生 ‘master/ teacher’ when they have

made extraordinary contributions to their field. However, it is noted that this particular usage is not found in the Dictionary of Modern Chinese (Zhang, 2007; Zhou, 2003). More commonly, lexical gender markers are unnecessarily added to gender neutral nouns to emphasise the sex of the referent when there is an inconsistency between the gender stereotype of a noun and the referent's sex. While this is more typically observed for terms referring to women (e.g. 女博士 'female PhD' in Peng et al., 2021, p.4); 女司机 'female driver' in Li & Luo, 2020, p.781), it is also occasionally used for terms referring to men (e.g. 男护士 'male nurse' in Chan & Lin, 2019, p.166).

Finally, in some common phrases we also find terms used exclusively for women with no male counterpart. An example of this is 女强人 'female strong person', used to describe a woman with a successful career, whereas there is no equivalent term available which emphasises the male identity with the same status (the United Nations; Moser, 1997). In other cases, femininity is degraded through the use of demeaning phrases such as 娘炮 'feminine cannon' (meaning 'sissy'; Li, 2020) or 事儿妈 'issues mother' (meaning 'fastidious person'; Wu, 1991). Meanwhile generic masculine terms such as 哥们儿 'bros' (meaning 'true loyal friend') are used to convey respect for masculinity (Wu, 1991). This same privileging of male status is also seen in dyads which include gender pairs, where the female element is always listed last (e.g. 夫妻 'husband and wife', meaning 'married couple' and 男女平等 'men and women are equal', meaning 'gender equality' in Ettner 2002, p.38).

3.2.2 Inclusive language in Chinese

It has been suggested that language inclusivity can be improved by processes of feminisation (i.e. symmetric use of feminine and masculine words pairs), neutralisation (i.e. use of gender indefinite nouns and pronouns), or a combination of the two (Sczesny, Formanowicz & Moser 2016). As we review below, in the Chinese context, inclusiveness practices show a trend from increasing visibility of women to not making gender visible, thus from feminisation to neutralisation.

3.2.2.1 Feminisation practices

Symmetrical address terms are considered to be an indication of fundamental changes in women and men's social relationships (Hellinger & Bußmann, 2001). Indeed, with the improvement in equality of status for women in China, it is also increasingly more common to refer to women as 女士 'lady/madam', a symmetrical term to 先生 'gentleman/sir' (Hao, 2005). In more casual settings and computer mediated communication, individuals between 18 and 45 tend to use pairs such as 美女/帅哥 'beautiful woman/handsome brother" or 小姐姐/小哥哥 'little older sister/brother' when addressing strangers of a similar age (Wang, 2022). In relationships, we also find a change towards neutral pairs such as 妻子/丈夫 'wife/ husband', or 女朋友/男朋友 'girlfriend/boyfriend' (Chen, 2019), where previously derogatory terms such as 贱内 'cheap inside' or 粗妇 'rough woman' (both meaning 'wife') were once in more common usage.

On the other hand, with women increasingly participating in traditionally male-dominated social roles, expressions such as 女强人 'female strong person' (meaning 'woman with a successful career') and other unnecessarily female marked nouns have also emerged.

These terms are misleadingly suggested to highlight the increasing status of women, while actually perpetuating gender stereotypes (Moser, 1997; Farris, 1988). For reasons such as these, the guidelines for gender inclusive language in Chinese developed by the United Nations suggest using gender differentiated word pairs only when popular prejudice may neglect the inclusion of either gender. For example, in the context of educational policy in China, explicitly highlighting 无论女童或男童 'whether girls or boys' is suggested to be more inclusive than merely mentioning 每个儿童 'every child',as as it draws deliberate attention to gender equality and helps counter the historical neglect of girls' access to education in certain regions. Research in grammatically gendered languages such as German and Dutch also shows that occupational terms in paired forms reduce gender stereotypical perceptions of occupations and promote children's interests in counter-stereotypical fields (Vervecken, Hannover & Wolter, 2013; Vervecken & Hannover, 2015).

An area where feminisation has resulted in considerable controversy is in the introduction of the female specific third person singular pronoun 她 'she'. The original intention of introducing 她 'she' was to increase visibility of women in written works during a period of educational reforms undertaken in response to women's suffrage in 1920s (Huang, 2015). As a part of this reform, a male specific pronoun *男也, structured with the semantic radical 男 'man/male' and the same phonological radical 也 /tā/ had been proposed and used in a few published articles in the 1920s (Ling, 1989). Had this proposal been implemented successfully, a symmetric pair of gender-specific pronouns could have been achieved without sacrificing the gender unspecific nature of 他 'he'. However, *男也 never gained popularity and was later abandoned (Moser, 1997), leaving 他 'he' to act both as a

gender unspecific and as a male specific pronoun. In modern Chinese, the practice of using 他 ‘he’ and 她 ‘she’ together is not uncommon for increasing women’s visibility (Wang, 2010), although this practice is also criticised as superfluous because 他 ‘he’ is considered to be sufficient to refer to both women and men (Jiang, 1996).

3.2.2.2 Neutralisation practices

The lack of grammatical gender in Chinese leads to a natural ability to avoid gendered language when gender is not relevant for communication (Sczesny, Formanowicz & Moser, 2016). Occupational terms such as 老师 ‘teacher’ and 医生 ‘doctor’ or positions such as 局长 ‘director’ can be used as polite forms of address for people of any gender (Zhang, 2007). In particular, 老师 ‘teacher’ is appropriate when the addressee’s role or position is unknown or when a specific address term is absent as a way of showing respect (Zhang, 2007; Zhou, 2003). Gender neutral kinship terms such as 家人 ‘family member’ or 宝宝 ‘babe’, initially used in computer mediated communication, may now also be used to address acquaintances and strangers in everyday conversation (Wang, 2022). In relationships, inclusivity is promoted by using gender neutral terms such as 爱人 ‘beloved person’, 伴侣 ‘partner’, or 另一半 ‘the other half’ (Chen, 2019; Chan & Lin, 2019). In fact, since these terms do not designate the gender of the referent or the speaker, they are especially appreciated by homosexual couples (Chen, 2019).

In relation to the issues mentioned below surrounding the system of third person pronouns, in formal documents the gender neutral pronoun 其 ‘singular and plural they/ them/their’ is suggested because of the character’s conciseness and inclusiveness (the

United Nations). However, in mass media, especially computer mediated communication, it is increasingly popular to use TA, a romanised form of the pronunciation of the third person pronouns, which is not gender differentiated (Zhong, 2015; Zhan, 2013). The form is considered to be an efficient way of including all potential genders compared to the feminisation practice of the pronoun pair 他/她 ‘generic he/she’ (Zhan, 2013). Despite its popularity, relatively little research has been undertaken on the usage of TA, with the exception of a few corpus-based critical discourse analysis studies revealing that TA is also emerging as a covert reference to LGBTQIA+ groups (Sluchinski, 2021).

3.2.3 The current study

Little is known about the degree to which Chinese speakers recognise sexist language usage, and whether they might be more willing to use more inclusive language if there were practical alternatives. To the best of our knowledge, there is no published measure of attitudes toward sexist/nonsexist language in China. Therefore, this study introduces a simplified Chinese Mandarin adaptation of the Inventory of Attitudes toward Sexist/ Nonsexist Language – General (IASNL-G, Parks & Roberton, 2000) with the goal of investigating Chinese speaker's general attitudes toward sexist and inclusive language, including the recognition of subtle sexist language, their willingness to use inclusive language, and their opinions on the necessity of reforming Chinese. We also specifically explore whether differences are found in attitudes relating to the gender of the speakers themselves, and whether younger speakers in the participants of our study are more accepting of inclusive language than older speakers.

3.2.3.1 Sex, gender beliefs, and attitudes toward sexist/nonsexist language

Early studies in inclusive language use generally found that women not only had more favourable attitudes toward inclusive language but also used more inclusive language than men (Cronin & Jreisat, 1995; Rubin, Greene & Schneider, 1994; Rubin & Greene, 1991; Jacobson & Insko, 1985). These studies together with others examining opinions about sexist/nonsexist language (e.g. Blaubergs, 1980), recognition of sexist language (e.g. McMinn et al., 1994), and use and willingness to use sexist language (e.g. Nilsen, 1984) were later adapted to create the IASNL-G (Parks & Roberton, 2000) to measure individuals' language attitudes in a more comprehensive way. Individuals' total scores of this inventory were used as a quantitative indicator of general attitudes toward language reform, sexist language, and inclusive language.

However, more recent studies conducted with native English speakers have added nuance to these findings. Measured by Parks and Roberton's IASNL-G (2000), women were found to score highly, holding more favourable general attitudes toward inclusive language than men (Douglas & Sutton, 2014; Park & Roberton, 2004, 2008). On the other hand, no differences were found in women and men's intention and actual use of inclusive language (Sczesny, Moser & Wood, 2015). Further examinations of participants' gender beliefs indicated that the potential gender gap in sexist language detection and inclusive language use was likely to be mediated by individuals' level of sexism (Sczesny, Moser & Wood, 2015; Sarrasin, Gabriel & Gygax, 2012; Parks & Roberton, 2004). Well researched measures employed in related studies included the Modern Sexism Scale (MSS, Swim et al., 1995), the Neosexism Scale (NS, Tougas et al., 1995), the Attitudes toward Women Scale (AWS, Spence & Hahn, 1997), and the Ambivalent Sexism Inventory (ASI, Glick & Fiske, 1996). Interestingly, Douglas and Sutton (2014) found that individuals' attitudes toward system justification were more stronger mediators on the gender difference in scores of IASNL-G than AWS and ASI, suggesting that this gender difference in attitudes toward sexist and inclusive language might be essentially driven by more comprehensive ideologies in social gender hierarchy. NeoSexism and Modern Sexism seem to concur with these overarching approvals to keep people "in their place". Neosexism emphasises the conflict between egalitarian values and remnant negative feelings toward women (Tougas et al., 1995). Individuals harbouring Neosexism reckon on the symbolic importance of sexist language to maintain the current balance of male and female 'normal' roles thus disapproves affirmative actions for women because they believe the group they belong to would lose more than they gain if this balance is shifted (Parks & Roberton, 2004; Tougas et al., 1995). Modern sexists believe that it is the biological differences between men and women rather than socialisation and discrimination that lead to job segregation (Swim et

al., 1995). Particularly, individuals harbouring higher levels of Neosexism and Modern Sexism were found to predict lower scores on the IASNL-G, indicating less favourable attitudes toward gender-inclusive language (Sczesny Moser & Wood, 2015; Parks & Roberton, 2004, 2008). However, some studies have also highlighted discrepancies between participants' own abilities to recognise sexist behaviour, and their ability and intention to avoid sexist language, even in individuals with low levels of Modern Sexism (Sarrasin, Gabriel & Gygax, 2012; Swim, Mallett & Stangor, 2004), suggesting individuals are not necessarily sensitive to sexism in the linguistic domain.

Taking this into account, the current study examines the interrelations between individuals' sex, gender beliefs, and both general and specific attitudes toward sexist/nonsexist language based on one comprehensive Chinese version of IASNL-G.

3.2.3.2 Effects of age and education on attitudes toward sexist/nonsexist language

The other major variables that were found to influence IASNL-G scores were edu- cation and age (Parks & Roberton, 2008). Specifically, a greater number of years spent in formal education was found to significantly predict higher scores in the IASNL-G, indicating more positive general attitudes toward inclusive language. In terms of age, the youngest group (18–22 year old) was surprisingly found to have significantly less positive attitudes toward inclusive language compared to their older cohorts (30–49, 51–69, and 70–87 years old), challenging the notion that older people are less open to change than younger people. One possible explanation for this discrepancy is that attitudes toward inclusiveness may be formed during significant social events which shape ongoing political attitudes later in

life (Meredith, Schewe & Karlovich, 2002), such as coming of age during the civil rights era and second wave feminism.

With this in mind, our study focused on language attitudes across three decade-of-birth groups (i.e. participants born in the 1980s, 1990s, and 2000s). In contemporary China, individuals are commonly labelled based on the decade of their birth such as 80后 'post-80s', 90后 'post-90s', or 00后 'post-00s', because same decade-of-birth cohorts are believed to share salient collective identities (Qian & Li, 2020). Accordingly, youth research tends to focus on different birth decades rather than traditional generations because of the rapid development of Chinese society (Feng, 2011). In addition, these three cohorts correspond to individuals who were born after China's reform and opening-up (December 1978). Individuals born after 1980 will have come of age in a relatively stable political and economic environment, which may help shed light on how age itself influences attitudes toward sexist/non-sexist language.

3.3 Methodology

3.3.1 Participants

Data was collected from 303 respondents (153 women, 150 men) via wenjuan.com, an online survey platform in China. All participants were born in Mainland China after China's reform and opening-up, had received education in Mainland China for at least 12 years, and confirmed they spoke and read in Mandarin/Simplified Chinese every day. Participants' ages reflected those born into the three decades of interest (92 born in 1980s, 108 born in 1990s, and 103 born in 2000s). A majority of the participants came from economically and culturally developed regions across China (25% from Shanghai, 8.6% from Zhejiang, 7.6% from Guangdong, 7.3% from Beijing, and 7.0% from Sichuan). The remaining 45% of participants came from a broad range of locations. Approximately 37% were from more than 20 provinces across China, such as Sichuan, Hunan, Hubei, Jiangsu, and Shandong, representing a diverse cross-section of regional backgrounds. Around 3% were from overseas locations, including Singapore, Malaysia, the United Kingdom, and Canada. An additional 5% of participants did not report their location. Most participants (87.5%) reported having obtained at least a bachelor's degree. Specifically, 21 participants had no academic degree, 185 participants with undergraduate-level education (ongoing or completed), 81 participants were at the postgraduate level or held a master's degree, and 16 participants were at the doctoral level or had completed a PhD. It is worth mentioning that a choice of 'non-binary genders' in addition to choices of female or male was given, how- ever, due to an extremely low number of participants who identified as non-binary (2), it was not feasible to form a non-binary group separate from the female and male groups in the following analysis.

3.3.2 Design of the IASNL-G Chinese

This study adapted the Inventory of Attitudes toward Sexist/Nonsexist Language – General (IASNL-G, Parks & Roberton, 2000) to create a measure of individual attitudes toward sexist/nonsexist language in Chinese (IASNL-G Chinese). The Chinese adaptation followed the definition of sexist language used in the original inventory: “Words, phrases, and expressions that unnecessarily differentiate between females and males or exclude, trivialize, or diminish either gender” (Parks & Roberton, 1998a, p.455). Alterations were made to the original inventory (see below for details) to better fit the context of Chinese language use, and were piloted in 9 participants (5 female, 4 male) before inclusion in the final version of the scale. IASNL-G Chinese therefore consisted of three sections with 24 items in total (8 items per each section). All items were rated based on a 11-point Likert scale. For analysis reasons, the score range for each item was 0 to 10, resulting total scores ranging from 0 to 80 for each section and 0 to 240 for the total inventory. Higher scores reflect a more supportive attitude toward language reform, better sexist language detection, and greater willingness to use inclusive language. According to the cutting points of the original IASNL-G, individuals scoring between 168 and 240 were considered to have supportive attitudes, those scoring between 120 and 167 were neutral or undecided, and those scoring lower than 120 indicated negative attitudes. As shown in Table 3.1**,** IASNL-G Chinese showed good reliability across gender and generation, with Cronbach’s alpha being above .86 for all groups

Table 3.1: Cronbach's coefficients alpha based on the scores of 303 participants completing IASNL-G Chinese

Section	Sample (n = 303)	Women (n = 153)	Men (n = 150)	80s (n = 92)	90s (n = 108)	00s (n = 103)
Beliefs about sexist language	.79	.74	.77	.74	.85	.76
Recognition of sexist language	.86	.85	.82	.85	.87	.85
Willingness to use gender inclusive language	.80	.70	.80	.81	.84	.76
Total inventory	.90	.87	.86	.87	.92	.88

In the beliefs about sexist language section, the new inventory selected items 2, 3, 5, 7, 8, 9, 10, and 12 from the original inventory because these items were judged by the researchers to be appropriate to the Chinese context: item 2 asked opinions on changing traditions with language use; items 3, 7, 8, 9, and 12 measured more abstract beliefs on the importance of eliminating sexist language; item 5 asked for opinions on unintentional use of sexist language; and item 10 focused on changing male generic expressions to female inclusive ones (Parks & Roberton, 2000, p. 434). While most items could be translated directly into Chinese, items 5 and 10 were specifically changed into more culturally suitable examples. For item 5, the original English expression "man and wife" reflects a traditional, patriarchal view of marriage where the man is prioritised as the default identity. As there is no direct Chinese equivalent, our study substituted it with the commonly used expression 别这么娘炮 'do not be a sissy', which similarly reinforces gender stereotypes, in this case, by discouraging behaviours deemed too "feminine" for men, sometimes even for women. Both expressions carry implicit sexist attitudes: "man and wife" naturalises gender hierarchy in relationships, while 娘炮 'sissy' literally meaning "effeminate cannon" enforces rigid masculinity norms and stigmatises femininity. Although

the literal meanings differ, both function as unintentionally sexist everyday phrases, aligning with the item's intent to assess sensitivity to casual or normalised sexist language in the respective cultural context. In item 10, the English phrase "our forefathers" was changed into 炎黄子孙 'Sons and grandsons of Yan-Huang'. Table 3.2 shows the eight Chinese adapted items in this section with the average score of every item rated by the participants. Higher scores represented more supportive attitudes toward language reform and sexist language elimination.

Table 3.2: Items in the beliefs about sexist language section of IASNL-G Chinese with the means and standard deviations of every item (*Scores of items were reversed in the results).

Item number	The Chinese adaptation	Mean (SD)
2	*我们不应该改变汉语传统的读写、表达方式。 [We should not change the way the Chinese language has traditionally been written and spoken.]	4.46 (3.21)
3	*我们没必要担心语言性别歧视问题。 [We do not need to worry about the issue of sexist language.]	7.39 (2.76)
5	*当有人说'别这么娘炮'这种话时，如果说的人并没有性别歧视的意思，那这句话就不是性别歧视。 [When people use “do not be a sissy”, the expression is not sexist if the users don’t mean to be.]	5.98 (3.48)
7	消除性别歧视性语言是社会发展中一个重要的目标。 [The elimination of sexist language is an important goal in social development.]	7.50 (2.56)
8	新闻媒体是不允许使用民族、种族侮辱性语言的，所以也不应该允许使用性别歧视性语言。 [Most publication guidelines require news media to avoid using ethnic and racial slurs. So, these guidelines should also require writers to avoid sexist language.]	8.10 (2.24)
9	性别歧视性语言和社会中的性别歧视行为是相关的。 [Sexist language is related to sexist treatment of people in society.]	7.98 (2.25)
10	我们应该把用男性作为泛指的表达转变成包括女性的表达。比如把'炎黄子孙'等变成'炎黄儿女'。 [We should change expressions using male generics, such as “sons and grandsons of Yan and Huang” to expressions that include women, such as “sons and daughters of Yan and Huang”.]	5.09 (3.28)
12	虽然改变很困难，但我们还是应该努力消除性别歧视性语言。 [Although change is difficult, we still should try to eliminate sexist language.]	8.03 (2.20)

Table 3.3: Items in the recognition of sexist language section of IASNL-G Chinese with the means and standard deviations of every item.

Aspects of sexist language	Sexist language	Mean (SD)
Male as default	领导携夫人 [leaders and wives]	4.75 (3.41)
	我敬你是条汉子 [I respect you being a real man]	4.29 (3.23)
Degradation of women	妇孺皆知 [even women and children know it]	4.98 (3.38)
	婆婆妈妈 [old women and mothers, meaning pointlessly or annoyingly talkative]	5.21 (3.63)
Unnecessary emphasis on woman's identity	女司机 [female driver]	6.56 (3.37)
	女科学家 [female scientist]	4.15 (3.43)
Expressions with no equivalents for men	女强人 [female strong person, meaning woman with a successful career]	4.72 (3.37)
	寡妇 [widow]	4.50 (3.52)

In the recognition of sexist language section, items were selected based on the guidelines for gender-inclusive language in Chinese (United Nations), with consideration given to expressions under current debate in social media and academic research (e.g. Peng et al., 2021; Li & Luo, 2020). As illustrated in Table 3.3, eight items were included representing four aspects of subtle sexist language in Chinese. All items were rated based on a 11-point Likert scale, with response options ranging from "-5 - not sexist at all" to "5 - absolutely sexist". For analysis reasons, the score range for each item was 0 to 10. The scale was designed to capture varying degrees of agreement rather than binary yes/no responses. Higher average ratings on the items reflected a greater recognition of the items as examples of sexist language.

In the section exploring willingness to use inclusive language, we emphasised inclusiveness of women and men, non-binary genders, and individuals with different sexual orientations. The term *gender-inclusive language* was literally translated into Chinese as 性别包容性语言, following the usage recommended by the guidelines for gender-inclusive language in Chinese (United Nations). While this phrasing may carry slightly different connotations in Chinese, we believe it did not significantly affect participants' understanding or responses, as the questionnaire provided a clear operational definition of the term to ensure consistency in interpretation: "Gender-inclusive language does not unnecessarily differentiate between females and males *or* exclude, trivialise, or diminish either gender". This definition was adapted from Parks and Roberton's (2000, p. 434) definition of sexist language. One item specifically related to woman explored willingness to use 女士 'lady/madam' as a polite address term for women instead of expressions indicating age or marital status. Five items were related to inclusive use of occupational terms. Participants were asked to indicate their willingness to use generic nouns rather than ones which include unnecessary gender information (i.e. 女博士 'female PhD'). One additional item asked whether participants preferred to use either the pronoun pair (他/她 'he/she') or the gender neutralised third person pronoun (TA) instead of 他 'generic he'. Finally, one item explored the use of inclusive expressions for spouses and partners instead of sex differentiated expressions. In this item, several examples of inclusive partnership terms were given as a group, participants were asked to rate their general willingness to use the inclusive expressions. See Table 3.4 for the details of every item in this section. Higher average scores in the items represented the participants' greater willingness to use the inclusive language choices rather than the not inclusive ones.

Table 3.4: Items in the willingness to use inclusive language section of IASNL-G Chinese with the means and standard deviations of every item.

Types of expressions	Not inclusive language	Inclusive language	Mean (SD)
Address terms for women	小姐 [miss]; 太太 [mrs]; 姑娘 [girl]	女士 [lady/madam]	7.83 (2.60)
Occupational terms	女博士 [female PhD]	博士 [PhD]	8.91 (1.97)
	男护士 [male nurse]	护士 [nurse]	8.30 (2.54)
	快递小哥 [delivery bro]	快递员 [delivery person]	7.70 (2.69)
	空姐/空少 [stewardess/steward]	飞机乘务员 [flight attendant]	6.79 (3.27)
	鸡 [chicken]; 妓女 [prostitute]; 失足妇女 [fallen woman]; 男妓 [male prostitute]	性工作者 [sex worker]	7.73 (2.86)
Pronoun use	他 [generic he]	他/她 [he/she] or TA	7.50 (2.97)
Partnership terms	丈夫/妻子 [husband/wife]; 男朋友/女朋友 [boyfriend/girlfriend]	配偶 [spouse]; 爱人 [beloved person]; 伴侣 [patner]; 另一半 [the other half]	6.20 (3.33)

3.3.3 Measures of gender beliefs

Gender belief systems were measured by including items from the Modern Sexism Scale (MSS, Swim et al., 1995) and the Neosexism Scale (NS, Tougas et al., 1995), with all items being translated into Chinese with minor alternations to suit the Chinese context. Both MSS and NS were designed to measure more covert and subtle forms of contemporary sexism without directly asking participants whether women are considered inferior to men. MSS emphasises the denial or acknowledgement of the existence of sexism, while NS is linked to opposition to affirmative action for women and directly focuses on sexism in labour force. We chose to include these scales as our previous research examining redundant gender-makers in Chinese nouns found that individuals with lower levels of Modern Sexism and Neosexism were also more likely to disapprove of sexist language targeting both women and men (Fan & Lawyer, *in prep*).

Participants were asked to rate to what extent they agree with each statement in the MSS (8 items) and NS (10 items) on an 11-point Likert scale ranging from “-5 - strongly disagree” to “5 - strongly agree”. For analysis purposes, this scale was rescaled to a 0 - 10 range. This approach is consistent with the IASNL-G scoring system (See Appendix 1 for the complete questionnaire). Consequently, total possible scores ranged from 0 to 80 for MSS and from 0 to 100 for NS, with higher total scores representing more positive and egalitarian gender attitudes. It is worth mentioning that one statement from the original NS (“Women will make more progress by being patient and not pushing too hard for change”) was omitted after piloting because it was found to be unclear and pilot participants reported confusion about how to rate this statement.

3.4 Results

3.4.1 General attitudes toward sexist/nonsexist language in Chinese

According to total scores on the IASNL-G, participants in this study were found to have neutral or undecided attitudes to sexist/nonsexist language with an average score falling into the 120-167 scoring range (see Table 3.5). Looking at the results of female and male participants separately, on average female participants appear to have more supportive attitudes than male participants, with the mean value falling into the supportive (168–240) category.

Table 3.5: The means and standard deviations of the total scores in IASNL-G Chinese overall and across gender and the proportions of individuals with different attitudes.

IASNL-G Chinese (0 - 240)	Mean (SD) of total scores	Supportive (168 - 240)	Neutral/ undecided (120 - 167)	Negative (0 - 119)	Mean (SD) of every item (0 - 10)
Women (n = 153)	173.54 (33.29)	61.4%	33.3%	5.2%	7.23 (2.61)
Men (n = 150)	135.37 (35.75)	13.3%	57.3%	29.3%	5.64 (3.05)
Total (n = 303)	154.65 (39.42)	37.6%	45.2%	17.2%	6.44 (2.83)

In the three sub-sections of the IASNL-G Chinese, participants scored the highest in willingness to use gender inclusive language and beliefs about sexist language, with the lowest scores being found for recognition of sexist language (see Table 3.6a and 3.6b). This is somewhat surprising, given that participants were asked to judge expressions based on a provided definition of sexist language. As with the total IASNL-G Chinese scores, women scored higher than men in every sub-section as well.

Table 3.6a: The means and standard deviations of every item in IASNL-G Chinese and the subsections and the means and standard deviations of the total scores in Modern Sexism Scale and Neosexism Scale.

Instrument (possible range of scales: 0 - 10)	**Women (n = 153) Mean (SD)**	**Men (n = 150) Mean (SD)**	**Sample (n = 303) Mean (SD)**
Total inventory of IASNL-G Chinese	7.23 (2.61)	5.64 (3.05)	6.44 (2.83)
Beliefs about sexist language	7.53 (2.17)	6.08 (2.67)	6.82 (2.43)
Recognition of sexist language	5.83 (2.31)	3.94 (2.42)	4.90 (2.36)
Willingness to use gender inclusive language	8.33 (1.90)	6.90 (2.19)	7.62 (2.04)
Modern Sexism	7.89 (2.57)	5.50 (3.06)	6.72 (3.06)
Neosexism	7.94 (2.62)	6.11 (3.11)	7.04 (3.01)

Table 3.6b: The means and standard deviations of the total scores in IASNL-G Chinese and the subsections and the means and standard deviations of the total scores in Modern Sexism Scale and Neosexism Scale.

Instrument (possible range of scores)	**Women (n = 153) Mean (SD)**	**Men (n = 150) Mean (SD)**	**Sample (n = 303) Mean (SD)**
Total inventory of IASNL-G Chinese (0 - 240)	173.54 (33.29)	135.37 (35.75)	154.65 (39.42)
Beliefs about sexist language (0 - 80)	60.26 (11.76)	48.67 (14.30)	54.52 (14.29)
Recognition of sexist language (0 - 80)	46.66 (18.20)	31.50 (17.61)	39.16 (19.42)
Willingness to use gender inclusive language (0 - 80)	66.62 (11.05)	55.20 (15.42)	60.97 (14.54)
Modern Sexism (0 - 80)	63.12 (10.94)	44.00 (13.67)	53.66 (15.63)
Neosexism (0 - 100)	79.42 (11.65)	61.13 (15.54)	70.36 (16.47)

3.4.2 Correlations between gender, gender beliefs and IASNL-G Chinese scores

Participants' gender beliefs were indicated by scores on the Modern Sexism Scale and the Neosexism Scale, with higher scores pointing towards generally more positive attitudes toward women and gender equality. As shown in Table 3.6, female participants were found to have more positive attitudes than male participates on both the Modern Sexism and Neosexism scales.

Using Pearson's correlation, we find that Modern Sexism and Neosexism were positively correlated with a shared variance of 46%. In addition, these two variables were found to be correlated both with gender and IASNL-G Chinese scores (see Table 3.7). The amount of variance in IASNL-G Chinese explained by gender alone was around 23%, which is slightly higher than the range of gender gaps (11% – 19%) reported in Park and Roberton's previous studies (1998a, 1998b, 2002, 2004). The Modern Sexism scale and Neosexism scale shared around 32% and 38% of the total variance with IASNL-G Chinese respectively. This finding aligns with previous research highlighting the predictive power of the scales. It reinforces the view that besides of demographic categories like sex, ideological beliefs play a critical role in shaping linguistic attitudes.

Table 3.7: Intercorrelations (*r* value) among gender, Modern Sexism scale, Neosexism scale, and IASNL-G Chinese with women coded as 0 and men coded as 1 (***p < .001).

	IASNL-G Chinese	Modern Sexism	Neosexism	Gender
IASNL-G Chinese	1.00	.57***	.62***	- .48***
Modern Sexism		1.00	.68***	- .61***
Neosexism			1.00	- .56***
Gender				1.00

3.4.3 Principal component analysis

We performed two separate Principal Component Analyses (PCA) on the items in the IASNL-G Chinese, and on the Modern Sexism and Neosexism scales. The advantage of using PCA is that it allows us to identify underlying constructs that influence responses across a number of items in each of the scales used here, and to reduce the overall dimensionality of the data. Given especially that the MSS and NS scales are highly correlated, reducing our data to principal components also allows us to include factors that cover items from both scales without introducing problematic collinearity in our statistical analyses.

In IASNL-G Chinese, three factors were retained which explained a combined 49% of the variance (see Table 3.8). The cluster of items was based on the cutting point of loadings at .298 considering that the sample size of this study was over 300 (Stevens 2002). Factor 1 represented all 8 items in the recognition of sexist language section with 2 items from the section exploring beliefs about sexist language: item 2 and item 5. Factor 2 included all 8 items from the willingness to use inclusive language section, with one more item from the section on beliefs: “We should change expressions using male generics, such as ‘sons and grandsons of Yan-Huang’ to expressions that include women, such as ‘sons and daughters’”. The five remaining items from the beliefs section clustered in factor 3, all representing abstract beliefs on the importance of eliminating sexist language, concurring with Parks and Roberton’s (2000) results.

Table 3.8: PCA factors of IASNL-G Chinese.

	Factor 1	Factor 2	Factor 3
Name of variable	Recognition	Willingness	Beliefs
SS Loadings	4.76	3.58	3.29
Variance explained	20%	15%	14%
Cronbach's alpha	0.80	0.84	0.87

Using the same criteria as in the previous analysis, PCA was conducted on the items from the MSS and NS. Three components were retained, accounting for 52% of the variance (see Table 3.9). Factor 1 represented denial of continuing sexism with 7 items: items 1, 3, 4, 5, and 8 from the Modern Sexism Scale measuring opinions on continuing sexism in society generally, and items 1 and 2 from the Neosexism Scale measuring opinions on continuing sexism in the workplace. The other 8 items from the Neosexism Scale clustered in factor 2, with the remaining 3 items from the Modern Sexism Scale clustering in factor 3, representing empathy with the unequal status of women.

Table 3.9: PCA factors of Modern Sexism Scale and Neosexism Scale.

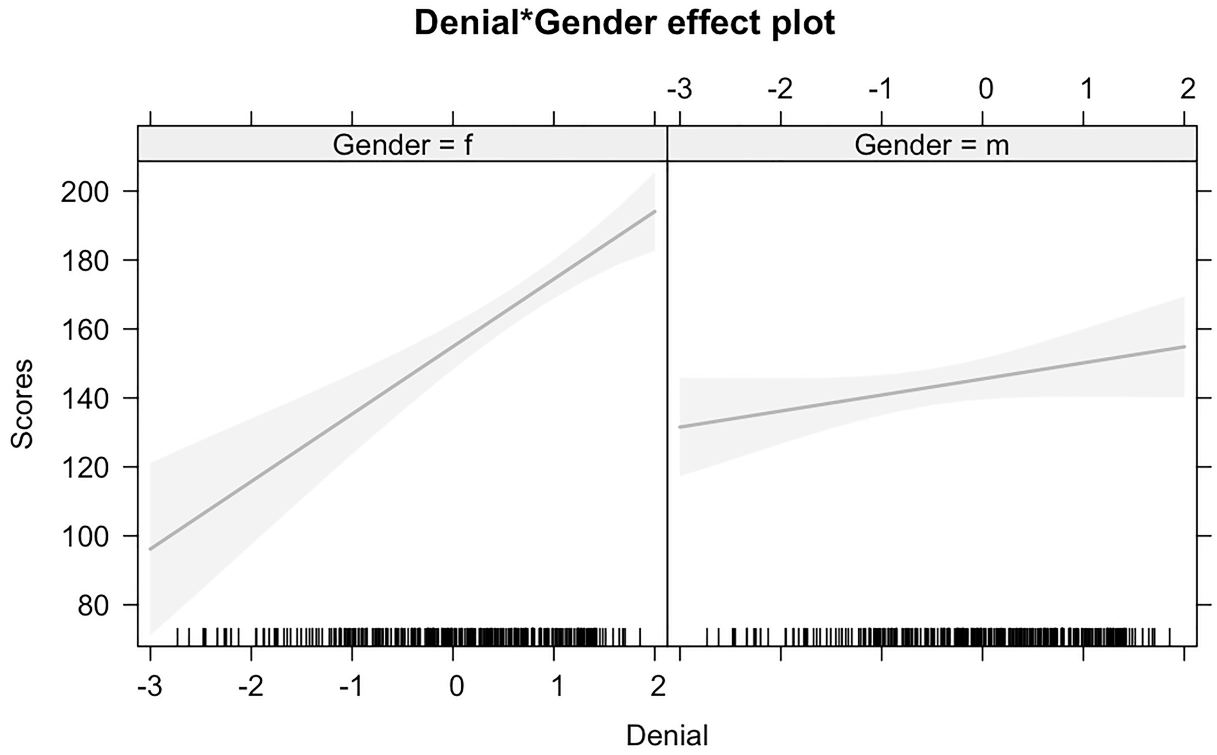
	Factor 1	Factor 2	Factor 3
Name of variable	Denial	Neosexism	Empathy
SS Loadings	4.30	2.91	2.21
Variance explained	24%	16%	12%
Cronbach's alpha	0.86	0.76	0.63

3.4.4 A multiple linear regression model of IASNL-G Chinese

As our goal was to explore the general effect that attitudes toward sexism and gender have on linguistic biases, we conducted a multiple linear regression fitted to total IASNL-G Chinese scores using R (R Core Team, 2022) in RStudio (RStudio Team, 2022). The predictors were the three factors from the PCA analysis of the MSS and NS above: Denial, Neosexism, and Empathy, along with Age, Gender (Female/Male) and Education (No academic degree/bachelor's/master's/doctorate) and the interaction of Denial and Gender. This specific interaction was included based on patterns observed during exploratory analysis of the raw data, where Denial appeared to relate differently to total IASNL-G Chinese scores depending on Gender. Furthermore, model comparison using fit indices (AIC and R^2) indicated that including this interaction improved model fit more than other possible interaction terms. The overall regression was statistically significant $F(9, 293) = 28.26$, $p < .0001$, $R^2 = .45$.

Our results showed higher degrees of Neosexism, indicating more supportive attitudes toward affirmative actions for women, significantly predicted higher total scores on the IASNL-G Chinese ($\beta = 13.24$, $F(1, 293) = 51.15$, $p < .0001$). Higher degrees in Empathy were found to predict higher total scores of IASNL-G Chinese ($\beta = 4.88$, $F(1, 293) = 6.85$, $p < .01$). The significant interaction between Gender and Denial ($\beta = -14.92$, $F(1, 293) = 11.64$, $p < .001$) showed that while generally women's scores were found to be significantly higher than men's ($\beta = -9.40$, $F(1, 293) = 4.32$, $p < .05$), women's higher scores in Denial also significantly predicted their scores in IASNL-G Chinese ($\beta = 19.57$, $F(1, 293) = 31.32$, $p < .0001$), an effect which was not similarly observed for men ($\beta = 4.66$, $F(1, 293) = 2.91$, $p > .05$; see Figure 3.1).

Figure 3.1: Different effects of Denial on IASNL-G Chinese (Scores) – comparison of results for women (Gender = f) and men (Gender = m).



As for the effect of Age, older participants were found to score lower in IASNL-G Chinese (β = – .66, $F(1, 293) = 4.66$, $p < .05$), indicating younger participants had a more favourable attitude toward language reform and using inclusive language. On the other hand, levels of Education were not found to significantly predict IASNL-G Chinese scores ($F(3, 293) = 1.29$, $p > .05$).

3.4.5 Multiple linear regression models of three sections in IASNL-G Chinese

To further examine how these variables influence scores in the three sub-sections of the IASNL-G Chinese, we fit three additional multiple linear regression models on the three factors identified in the PCA analysis of the IASNL-G Chinese described above: Belief, Recognition, and Willingness. Each model contained the same group of predictors as for the omnibus comparison: Age, Gender (Female/Male) and Education (No academic degree/bachelor's/master's/doctorate) and the interaction of Denial and Gender.

3.4.5.1 Beliefs about sexist language

The overall multiple linear regression reached statistical significance ($F(8, 294) = 28.26$, $p < .0001$, $R^2 = .38$) in the model predicting abstract beliefs about sexist language. Our results show that higher scores in Neosexism ($\beta = 3.89$, $F(1, 293) = 69.12$, $p < .0001$) and Empathy ($\beta = 2.60$, $F(1, 293) = 30.23$, $p < .0001$) significantly predicted higher scores in Beliefs, suggesting that participants with more supportive attitudes toward affirmative action for women also held more supportive attitudes toward eliminating sexist language. Similarly, greater Empathy significantly predicted higher scores in Beliefs. Interestingly, however, Denial was not found to significantly predict Beliefs ($\beta = 2.06$, $F(1, 293) = 3.82$, $p > .05$), and did not interact significantly with Gender ($\beta = – 1.89$, $F(1, 293) = 2.93$, $p > .05$). Indeed, women's scores in Beliefs were not found to be significantly different from men's ($\beta = .22$, $F(1, 293) = .04$, $p > .05$).

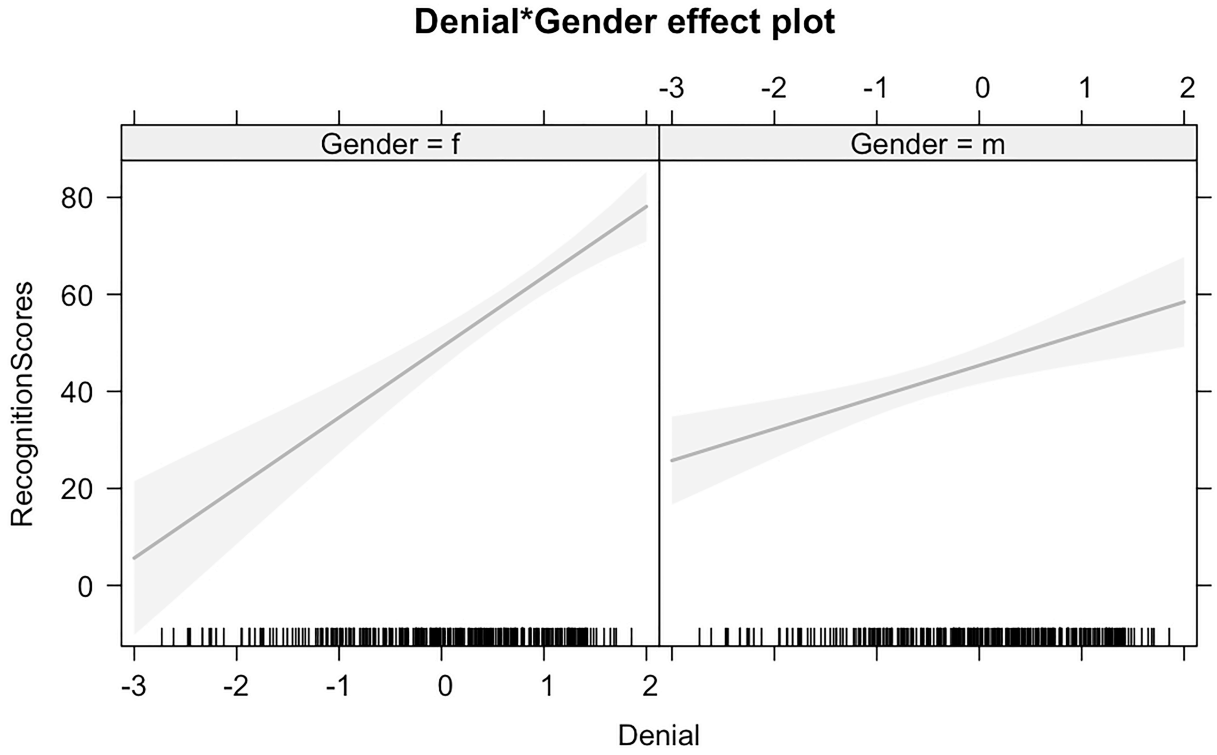
On the other hand, Age did significant predicted Beliefs ($\beta = – .19$, $F(1, 293) = 6.05$, $p < .05$) again highlighting that older respondents were generally more conservative about language reform compared to their younger counterparts. In this scale we also observe a significant effect of Education ($F(3, 294) = 4.18$, $p < .01$) which was not observed in the

omnibus model. Post-hoc analysis using estimated marginal means (Lenth, 2022) showed only that the group of participants with no academic degree scored significantly higher than the bachelor's degree group (β = – 5.24, F(1, 293) = 8.89, p < .05). However, these results should be interpreted cautiously, as the sample size of the no academic degree group was far smaller than the other groups.

3.4.5.2 Recognition of sexist language

The model of Recognition scores was statistically significant (F(9, 293) = 18.65, p < .0001, R^2 = .34), with higher scores on Neosexism again found to contribute significantly to Recognition scores (β = 3.33, F(1, 293) = 8.04, p < .01). While Empathy was not found to be a significant factor in this model (β = .22, F(1, 293) = .03, p > .05), we did observe a significant interaction between Denial and Gender, echoing what was observed in the omnibus model (β = – 7.95, F(1, 293) = 8.23, p < .01). In the Recognition model, higher scores for Denial predicted higher ratings for both men (β = 6.54, F(1, 293) = 14.27, p < .001) and women (β = 14.49, F(1, 293) = 42.70, p < .0001), suggesting that greater acknowledgement of continuing sexism lead to higher ratings in Recognition generally. However, as shown in Figure 3.2, the significant interaction between Denial and Gender illustrates that this relationship is stronger for women than for men. Neither Age (β = – .23, F(1, 293) = 1.48, p > .05) nor Education (F(3, 293) = 1.27, p > .05) were found to be significant predictors of Recognition scores.

Figure 3.2: Different effects of Denial on recognition of sexist language (RecognitionScores) – comparison of results for women (Gender = f) and men (Gender = m).

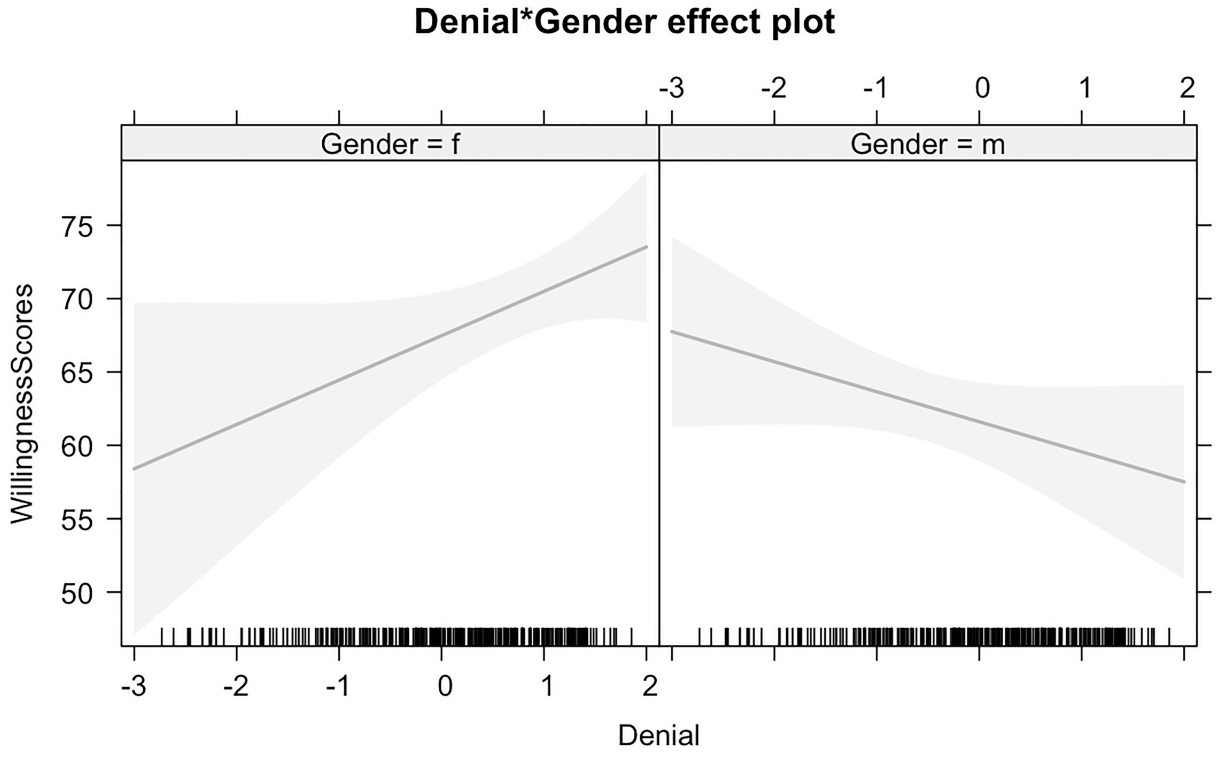


3.4.5.3 Willingness to use inclusive language

The willingness model reached statistical significance ($F(9, 293) = 16.8$, $p < .0001$, $R^2 = .32$). Here again we find a significant effect of Neosexism ($\beta = 6.02$, $F(1, 293) = 51.27$, $p < .0001$) and Empathy ($\beta = 2.07$, $F(1, 293) = 5.96$, $p < .05$), with both predicting a greater Willingness to use inclusive language. The interaction between Denial and Gender was also significant ($\beta = – 5.07$, $F(1, 293) = 6.52$, $p < .05$). While there was an overall tendency for larger Willingness scores for women compared to men ($\beta = – 5.86$, $F(1, 293) = 8.16$, $p < .01$), the interaction shows that higher Denial scores are associated with greater Willingness to use inclusive language in women, but reduced Willingness to use inclusive

language in men (see Figure 3.3). As in the previous model, Age (β = – .23, $F(1, 293)$ = 2.84, p > .05) and Education ($F(1, 293)$ = .97, p > .05) were not found to be significant predictors of Willingness.

Figure 3.3: Different effects of Denial on willingness to use inclusive language (WillingnessScores) – comparison of results for women (Gender = f) and men (Gender = m).



3.5 Discussion

Our study extended previous research on attitudes toward sexist/nonsexist language to examine the attitudes of Chinese speakers born after 1980 in Mainland China. To achieve this, we created a Chinese adaptation of the Inventory of Attitudes Toward Sexist/ Nonsexist Language – General (IASNL-G, Parks & Roberton, 2000). Our results suggest that the attitudes of Chinese speakers in this age range were generally neutral or undecided, although trending towards supportive of sexist language elimination and inclusive language use. They showed strong inclinations towards using inclusive language and acknowledged the importance of language reform to eliminate sexist language in current use.

Consistent with previous studies showing a gender gap in IASNL-G scores (Douglas & Sutton, 2014; Parks & Roberton, 2004, 2008), women generally had higher scores in IASNL-G Chinese, indicating more favourable attitudes towards nonsexist and inclusive language use. Particularly, the female group in our study was the first group to be found showing supportive rather than undecided attitudes on the matter of language reform and inclusive language compared to Parks and Roberton's previous studies (2004, 2008). This is in contrast to men's attitudes in this study, which remained undecided across all three decade-of-birth groups, bordering on non-supportive rather than supportive. The findings on men accord with studies conducted more than ten years ago in English speakers (Parks & Roberton, 2004, 2008).

3.5.1 The relationships between gender beliefs and sexist/nonsexist language attitudes

Using Chinese adaptations of the Modern Sexism Scale (Swim et al., 1995) and the Neosexism Scale (Tougas et al., 1995), we explored the relationship between sexist/ nonsexist language attitudes and gender beliefs across our generational cohorts. Our data replicates previous findings that lower levels of sexism measured in the MSS and NS predicted more favourable general attitudes toward language reform and inclusive language (Parks & Roberton, 2004, 2008). This suggests that these measures of covert sexism, commonly used in English contexts, are also reliable indicators of attitudes toward sexist/nonsexist language use in contemporary Mainland China.

Our analysis explored three different factors, identified through principal component analysis which compose different aspects of these measured gender beliefs: denial of continuing sexism, neosexism, and empathy with the unequal status of women. Consistent with previous studies (Parks & Roberton, 2004, 2008), the strongest predictor of an individual's attitude toward sexist/nonsexist language was their Neosexism score. In analysis of each sub-section of the IASNL-G Chinese, we observed that higher levels of disagreement with Neosexism had a positive effect on IASNL-G Chinese scores, suggesting that a generally more egalitarian gender attitude is also reflected in an individual's attitudes toward nonsexist and inclusive language use. These effects were strongest in the sub-sections related to abstract beliefs about language reform, and willingness to use inclusive language. This is likely because opposition to language change and inclusive expression closely aligns with the core features of Neosexism, which often includes resistance to policies or reforms perceived as favouring women. As noted in previous research, opposition to affirmative action for women is one of the most salient

features of the Neosexists (Parks & Roberton, 2004; Tougas et al., 1995), making it unsurprising that higher disagreement with Neosexism strongly predicts support for inclusive linguistic practices.

Greater empathy with the unequal status of women in Chinese society had a similarly positive effect on IASNL-G Chinese scores, including in the sub-sections exploring gender beliefs and willingness to use inclusive language. Somewhat surprisingly, greater Empathy was not found to improve an individual's recognition of sexist language use. Rather, the strongest predictor of sexist language recognition was the Denial of continuing sexism, suggesting that one's beliefs about whether sexism still exists play a more decisive role than general emotional concern for women. This may be because recognising sexist language first requires acknowledging that sexism is still present in society, a step that individuals high in empathy but low in this awareness may not take. Our findings are consistent with previous findings that a greater endorsement of Modern Sexism is directly linked to a reduced ability to recognise sexist language (Sarrasin, Gabriel & Gygax, 2012). In our study, a majority of the items loading on to our Denial and Empathy factors came from the Modern Sexism scale, reinforcing the connection. In fact, the correlation between Modern Sexism levels and self-definitions of sexist language found by Swim, Mallett, & Stangor (2004) might provide a basis for understanding our participants' unexpectedly low scores in recognition of sexist language, despite the repeated inclusion of explicit definitions of sexist language provided in our test. Looking more closely at our data, individuals with high levels of Modern Sexism tended to rate sexist language as normal or even nonsexist. Even individuals with low levels of Modern Sexism tended to accept some forms of commonly used sexist language as nonsexist, suggesting broader social normalisation of such language.

Our study showed a persistent gender difference in sexist/nonsexist language attitudes tied to the denial of ongoing sexism, even having taken into account differences in gender beliefs, age, and education. Greater acknowledgment of continuing sexism was associated with higher IASNL-G Chinese scores for women, while there were minimal effects on men's attitudes. Further examination of ratings in the sub-sections of the IASNL-G Chinese showed that this increasing acknowledgement of sexism lead to increases in women's recognition of sexist language and willingness to use inclusive language, but actually had the opposite effect on men's willingness to use inclusive language. This difference consequently broadened the gaps between women and men's general attitudes toward sexist/nonsexist language. Further investigations into the mechanism behind these different effects are especially important to the understanding of gender differences in attitudes toward sexist/nonsexist language.

Taking all of this together, our results provide additional support to previous findings that sexist language may be symbolically important to individuals with strong sexism (Parks & Roberton, 2004; Tougas et al., 1995). These strong sexists tend to make a conscious decision to avoid using gender-inclusive language as a means of perpetuating gender stereotypes and maintaining the hierarchies of patriarchy (Sczesny, Moser & Wood, 2015; Douglas & Sutton, 2014). This is evident in our data, which shows men with the highest scores on acknowledging ongoing sexism in the society also are less willing to use gender inclusive language.

3.5.2 Age effect on IASNL-G Chinese

The influence of age on attitudes toward sexist/nonsexist language was explored by focusing on the younger Chinese generations born after China's reform and opening-up policy. Compared to older generations who lived through significantly different social movements which may have shaped different political attitudes (as suggested in Parks & Roberton, 2008), the three decades of participants in the current study grew up in a similar politically stable and economically developed environment.

In this context, with gender beliefs, gender, and education levels being controlled, it is particularly interesting to find that age still had a significantly negative effect on IASNL-G Chinese scores, with older individuals indicating less supportive attitudes toward inclusive language. Further examination of the sub-sections of the IASNL-G Chinese suggested that the negative effect of age was limited to beliefs about the importance of language reform to eliminate sexist language. At first glance, this trend towards increasing conservatism in older participants appears to contradict Park and Roberton's (2008) results, showing that the youngest group (18 to 22 year olds) had significantly less supportive attitudes toward inclusive language. However, we do believe this agrees with their interpretations of the results that the age effect on attitudes toward inclusive language cannot be explored separately from the historical and social backgrounds of the participants in the study (Parks & Roberton, 2008, p. 281). Our findings suggested that, at least in the three decades of younger individuals of China, the phenomenon that individuals have more favourable attitudes toward language reform and inclusive language seems a consequence of younger ages rather than different backgrounds. To better understand the compound effects of age and social backgrounds on IASNL-G Chinese, it will be worth-while to extend the inclusion of participants to older generations in future research.

3.5.3 Limitations and future research

While our study did successfully capture the sexist/nonsexist language attitudes of participants across three decades of younger Chinese speakers born between 1980 and 2004, and explored the relationships between sexist/nonsexist language attitudes and other measures of sexism more generally, there are nevertheless a few limitations which suggest future avenues for further research. Firstly, the structure of IASNL-G limited our measurements to individuals' explicit willingness to use certain inclusive language alternatives, without examining their preferences for choices of inclusive language such as titles of address for women, third person singular pronoun(s), and address terms of spouse and partners. Further studies investigating how and why certain groups of individuals prefer specific choices of inclusive language still need to be conducted in the Chinese context. Secondly, the IASNL-G focused on language related to women, with only a few items related to men and non-binary groups included in the current Chinese adaptation. In future, this should be extended to language directly related to LGBTQIA+ groups, both in Chinese and other languages, and ensure sufficient data from individuals who identify as women, men, and non-binary is included.

Finally, although we employed an online data collection platform to ensure a broader variety of ages, education levels, and regional backgrounds, the participants included in this study nevertheless over-represent highly developed regions of China. Further research should seek to address the degree to which social background influences attitudes toward sexist and inclusive language in Chinese by specifically recruiting participants from less developed regions of China.

3.6 Conclusion

Despite the limitations of the current study, our findings provide the first empirical evidence for attitudes toward sexist and inclusive language in younger speakers born and living in Mainland China. The findings suggest an evolving trend with younger individuals in this study demonstrating a stronger preference for language reform and inclusive language. Notably, even after controlling for other variables, including gender beliefs, our study also shows women generally hold more favourable attitudes toward language reform and inclusive language than men. This gender gap, potentially caused by the different outcomes of acknowledging continuing sexism in society, highlights the importance of considering women's and men's potentially different motivations for using and avoiding gender-inclusive language in China.

Chapter 4 - Study 2: Asymmetrical gender marking of Chinese personal nouns: when genderless language becomes gender-biased

4.1 Abstract

While asymmetrical gender markedness with ‘male-as-default’ is defined as linguistic sexism (Hellinger & Buβmann, 2013), little quantitative research has been done on Chinese. This study examined native Mandarin Chinese speakers’ acceptability of the redundant use of gender markers as in ‘female PhD’ or ’female scientist’ when this marker is grammatically, semantically, and referentially unnecessary. We also explore the potential correlations between this (in)acceptability with gender stereotypes encoded in the grammatically genderless nouns, and individuals’ social beliefs on gender equality and language inclusivity.

270 short sentences were formed with 45 personal nouns pre-selected based on the potential gender bias/neutralness. Each noun formed six combinations of expression with manipulations of gender markers and subject-marker congruency (e.g. Female Default: sister-PhD; Female Redundant: sister-female-PhD; Female Incongruent: sister-male-PhD, and the same three combinations for male referents). 200 participants (101 female, 96 male) rated each expression for acceptability, and independently rated each noun for how strongly they were associated with female/male. Then, participants’ attitudes toward Neosexism (Tougas et al., 1995) and Modern Sexism (Swim et al., 1995) were measured. Finally, they filled in a Chinese-adapted version of the Inventory of Attitudes Toward Sexist/ Nonsexist Language (Parks & Robertson, 2000). A cumulative link mixed model was introduced to analyse the Likert scale data.

Results showed that the asymmetrical acceptability of redundant gender markers not only existed in the way that generally Female Redundant was significantly more acceptable than Male Redundant. More interestingly, only the acceptability of Male Redundant was significantly influenced by nouns' gender stereotypes as we expected, no significant differences were found in the acceptability of Female Redundant between female-biased and male-biased nouns. Furthermore, participants with more egalitarian attitudes toward gender equality and language inclusivity tended to show lower acceptability to both redundant forms and higher acceptability to both default forms.

4.2 Introduction

“Before editors, journalists, readers, and writers realised that I am actually a woman, I had been treated as a normal ‘person’. … Suddenly, I’m no longer a professor, but a female professor; no longer a writer, but a female writer; no longer a PhD, but a female PhD. All in all, having been found out my true identity, I’m no longer a ‘person’, but a ‘woman’.” As early as almost 40 years ago, Long (2014), a renowned professor and writer, and also a woman, pointed out her frustration of being ‘female marked’ when female identity was accidentally found out and publicised by media. This frustration came from the unnecessary use of a female marker in any of the mentioned personal nouns (i.e. professor, writer, and PhD), resulting in an unnecessary emphasis of female identity, when the default nouns are sufficient to describe a person regardless of their sex.

In fact, the generally low degree of grammatical marking of sex is such a salient feature that Chinese has been categorised into *genderless languages* in opposition to *grammatical gender* (e.g. Italian, German, Russian) or *natural gender* (e.g. English, the Scandinavian languages except Finnish) languages (see Stahlberg, Bruan, Irmen, & Sczesny, 2007 for an overview). The different grammatical structures of the following sentences in expressing roughly the same information show the different degrees of frequency and necessity of expressing a person’s sex in Italian, English, and Chinese (see Table 4.1).

Table 4.1: Comparisons and examples of languages with different features of grammatical gender

Language Type	Language	Referential sex	Sentence examples
Grammatical gender	Italian	Woman	(1a) Questa è mia amica Chiara, lei è una brava cameriera.
		Man	(1b) Questo è mio amico Dario, lui è uno bravo cameriere.
Natural gender	English	Woman	(2a) This is my friend Cathy, she is a good waitress.
		Man	(2b) This is my friend Tom, he is a good waiter.
Genderless	Chinese	Woman	(3a) 这 是 我的 朋友 小红, 她 是 个 不错的 服务员。 [This is my friend Hong, she is a good waiter.]
		Man	(3b) 这 是 我的 朋友 小明, 他 是 个 不错的 服务员。 [This is my friend Ming, he is a good waiter.]

As can be seen from 1a and 1b, indicating a person's sex is almost unavoidable and very frequent in Italian, because grammatical gender languages require nouns (e.g. *amica* and *cameriera* in 1a, *amico* and *cameriere* in 1b) and the dependent forms such as pronouns (e.g. *lei* and *una* in 1a, *lui* and *uno* in 1b) and adjectives (e.g. *brava* in 1a, *bravo* in 1b) to agree with the assigned grammatical genders. However, it is possible to completely avoid sex information when describing a person in a genderless language like Chinese. For example, the default nouns themselves 朋友 'friend' and 服务员 'waiter/waitress' in 3a and 3b suffice to address both men and women. The third person singular pronouns 他 'he' and 她 'she', though different in written forms, are not distinguished in spoken form /tā/, thus not indicating referential sexes when the pronouns are used orally. Note that sex information can be disclosed by lexical means in Chinese in most cases through adjectives 女 'woman/female' and 男 'man/male' (Ettner, 2002). For example, it is necessary to use

sex attributes in certain occasion such as 我们班有20个女生和15个男生 ‘there are 20 female students and 15 male students in our class’.

However, in some cases, adding explicit reference to sex is pragmatically awkward. This can be redundant or even ungrammatical when there is no textual need. If the adjective 女 ‘woman/female’ is added to the noun 服务员 ‘waiter/waitress’ in 3a, the strangeness would be similar to adding *female* to *waitress* in 2a as in “She is a female waitress”. Moreover, this strangeness would only have stayed in the sense of grammatical judgement if the adjectives meaning man and woman were symmetrically used to reference sex (Stahlberg et al., 2007). Long would not have been so vexed by being introduced as a female professor/writer/PhD, if her male counterparts were also called as male professors/writers/ PhDs. However, the more common practice, cross-linguistically, is that femaleness is explicitly expressed through suffixes (grammatical means) or adjectives (lexical means), even when there is neither grammatical nor textual need, while maleness is directly expressed by default nouns without any overt markings (Menegatti & Rubini, 2017). In Weibo, China’s largest social media platform, 女司机 ‘female driver’ was treated as a single phrase in the search engine, but 男司机 ’male driver’ was identified as two separate words 男 ‘man/male’ and 司机 ‘driver’ (Li & Luo, 2020). Moreover, female drivers were stigmatised as road killers and they were disproportionately featured in media coverage of traffic accidents (Li & Luo, 2020), even though the male drivers’ accident rates were significantly higher than the figure for the female drivers in China (Chen, 2018). Unnecessary female-marked expressions such as 女科学家 ‘female scientist’, 女警察 ‘female police officer’, 女医生 ‘female doctor’, 女法官 ‘female judge’ can even be frequently

found in the government owned newspaper People's Daily, while there was only one and zero entry for 男教授 'male professor' and 男作家 'male writer' respectively (Xu, 2018).

Not only in Chinese, this asymmetrical use of gender markers is pervasively found in all three types of languages from different language families (Hellinger & Buβmann, 2001; 2002; 2003; 2015). In grammatical gender languages, personal nouns especially occupational terms referred to women are usually considered necessary to be loaded by a suffix compared to the masculine generic form such as the Italian suffix *-essa* in *professoressa* '(female) professor', *studentessa* '(female) student', and the German suffix *-in* in *nachbatin* '(female) neighbour', *leserin* '(female) reader'. Traces of female suffixes can also be found in English, although it is being a natural gender language in which most personal nouns are gender undifferentiated. Pairs such as *actor/actress*, and *hero/heroine*, are still commonly used. Moreover, similar to the phenomenon in Chinese, extra female markings in lexical forms added to a gender neutral noun can be found in *lady/woman/ female surgeon* (Stanley, 1977), *driver* (Berger, 1986), and *soldier* (Siyanova-Chanturia, Warren, Peschiarelli, & Cacciari, 2015). Similarly, nouns such as *çocuk* 'child' or *Amerikan* 'American' in Turkish, a genderless language, are ready to refer to both females and males. However, when being translated from English to Turkish, only a male (referential gender indicated by pronouns) was translated to *çocuk* or *Amerikan*, while *kiz çocuğu* 'girl child' or *Amerikan Ladin* 'American woman' was chosen to refer to a female (Braun, 2000, 2001).

Stanley (1977) proposed that this asymmetry is the consequence of distinguishing sexes in semantic terms according to <+ - male> as Leech (1969) did to characterise the gender distinctions of English nouns. This means that male being the unmarked form is the

assumed default unless proven otherwise and female being the marked form is the proof of otherwise (Spender, 1980). Thus, the extra markings of femaleness is essentially an androcentric practice tacitly agreeing that the prototype of human beings is male (Silveira, 1980). Persons mentioned with a generic term are assumed to be male unless explicit evidence indicates the contrary. When a male adult was referred to, the terms *individual* or *person* were chosen over *man*, while *woman* was chosen to refer to a female adult (Hamilton, 1991). In summary, Long and the other women's antagonism to being female marked is not a disgust with their woman identity, but essentially a disagreement with being viewed as the derivation from the prototypical human being - man, a disapproval of being forced to be the second sex (de Beauvoir, 1949, 2011).

Existing research in asymmetrical gender marking patterns is mostly corpus-based, but lacking investigation into how these forms are perceived. Furthermore, the issue of redundant gender marking, where overt gender markers are added despite being grammatically, semantically, and referentially unnecessary, has received little attention. Therefore, in the present study on linguistic representations of women and men in Chinese, we aim to shed lights on whether and to what extent the overt gender-marked form is accepted compared to the default form (zero-marking) especially when the extra gender marker may be redundant to the target nouns (social roles) (see Table 4.2 for details of the manipulations in Section 2).

Building on the evidence of asymmetrical use of female-marked nouns discussed in the literature, we hypothesise that the frequent use of female marker in Chinese nouns would project a higher degree of acceptability on female-marked nouns compared to male-marked ones even in the given situation.

Following the first hypothesis, if individuals show different levels of acceptability to the redundantly gender-marked nouns, then it is worth investigating potential factors contributing to this (in)acceptability. Looking back at the examples with extra female markers, those nouns tend to be roles conventionally dominated by men. This is consistent to Stanley (1977) and Farris (1998) that the semantic feature <+ male/masculine> was covertly built in these occupational nouns, thus feminine reference must be overtly pointed out by a female marker. On the other hand, extra male markers did occur in rare occasions such as 男护士 'male nurse' (Chan & Lin, 2019), 男保姆 'male nanny' (Li, 2011), or 男秘书 'male secretary' (Li, 2011), considering that these roles are traditionally expected to be women. A closer scrutiny at this overt gender marking reveals that it is not constrained to a solely purpose of differentiating female and male identities. It indicates a rigid structure of semantic space maintained by socioculturally normalised sex roles (Stanley, 1977). Norming studies on gender stereotypes of nouns showed that people even associated nouns without grammatical gender to different genders/sexes (Misersky et al., 2014; Gabriel et al., 2008). For example, in Kennison and Trofe's (2003) study, native English-speaking participants rated a list of nouns related to occupations and social roles on a 7-point Likert scale, indicating the extent to which they associated each noun with women or men. The results showed that *surgeon*, *sheriff*, and *hunter* were rated as typically male, while *secretary*, *florist*, *cheerleader* were rated as typically female.

Furthermore, consistent evidence has been found based on different paradigms of methodology that people tend to activate this gender stereotypical information when they encounter nouns representing certain social roles. When the stereotypical gender of a noun is incongruent to the definitional gender of a pronoun or kinship term (e.g. *surgeon*-

mother; *nurse-farther*), this mismatch creates measurable processing difficulty. For example, longer fixation times have been observed on the reflexive pronoun or kinship term appearing after the noun that contradict stereotypical expectations (e.g. *electrician-herself*) (Duffy & Keir, 2004; Kreiner, Sturt, & Garrod, 2008). In self-paced reading tasks, longer reading times of the whole passages (Gygax, et al, 2008) and greater understanding difficulties (Reynolds, Garnham, & Oakhill, 2006) have been reported for mismatched sentences. Similarly, slower reaction times were recorded when participants judged if a role noun and kinship term can describe the same person (Banaji & Hardin, 1996; Cacciari & Padovani, 2007; Siyanova-Chanturia et al, 2015; Oakhill, Granham, & Reynold, 2005), suggesting that gender stereotypes may be automatically activated during sentence processing. Further support comes from Event-Related Potential studies (ERPs). In Italian, larger N400 amplitudes, typically associated with semantic incongruity, were found when role nouns mismatched stereotypical expectations (Pesciarelli et al., 2019; Molinaro et al., 2016). In addition, studies in Chinese reported increased P600 amplitudes, often interpreted as syntactic reanalysis or conflict resolution (Wang et al., 2017; Su et al., 2016; Xu et al., 2013). Together, these ERP findings indicate that stereotype-incongruent sentences elicit increased processing demands at both semantic and structural levels, as reflected in N400 and P600 effects. Especially when there is no explicit, unambiguous information about the referential sex of a certain noun, the referent's sex in readers' mental representation can be strongly influenced by their beliefs and previous knowledge of the more likely sex being the role (Stanley, 1977). Consequently, deviations from these gender-stereotyped expectations of nouns often result in overt gender markings (Hellinger & Buβmann, 2015).

On the other hand, Kreiner, Sturt, Garrod (2008) also found that stereotypical gender inferences may not necessarily be accessed if readers can identify the referential sex early enough in processing, preventing reliance on stereotypes to interpret the information. As introduced earlier, our goal is to explore the acceptability of the extra gender marking when it is grammatically, semantically, and referentially unnecessary. Therefore, we excluded the potential ambiguity of the target noun's referential sex by explicitly informing the information through the kinship term in the subject phrases. Given this context, we investigated if the gender stereotypes built in Chinese nouns can still influence the acceptability of the redundantly gender-marked forms. If so, the redundant gender markers may be considered as necessary when the referential sex is perceived as counter-stereotypical to the role represented by the target noun. Thus, under this hypothesis, the acceptability is expected to be higher when a referent's sex violates the gender-stereotyped expectation to a certain social role compared to when a referent's sex agrees with the expectation. For example, 赵某某的妹妹是女飞行员 'Zhao's sister is a female pilot' may be more acceptable than 赵某某的弟弟是男飞行员 'Zhao's brother is a male pilot', while 林某某的弟弟是男护士 'Lin's brother is a male nurse' may be more acceptable than 林某某的妹妹是女护士 'Lin's sister is a female nurse'.

Indeed, using sex-distinguished language based on the gender stereotype of a noun is a typical practice of sexist language (Swim, Mallett, & Stangor, 2004) and is known to solidify gender stereotypes and status differences between women and men (e.g. Banaji & Hardin, 1996; Crawford, 2001). Hence, deeper motives may exist under the (in)acceptance of default forms or redundantly gender-marked forms besides of nouns' gender stereotypes in Chinese, because this (in)acceptance can be seen as an individual's attitude toward

sexist or nonsexist language. Chinese as a grammatically genderless language has a natural readiness to reach language inclusivity through the avoidance of gender marking (Sczesny, Formanowicz, & Moser, 2016). Thus, higher acceptability of the default nouns can be seen as not only a respect to the standard form of representation of sexes, but also a choice of inclusive language. On the other hand, higher acceptability of the redundantly gender-marked nouns may indicate an inclination to sexist language.

To measure this attitude, we created Inventory of Attitudes toward Sexist/Nonsexist Language in Chinese (IASNL-G Chinese, Fan & Lawyer, 2024) based on Parks and Roberton's (2000) IASNL-G measuring English speakers' attitudes. Our hypothesis is that people with higher scores in IASNL-G Chinese reflecting more supportive attitudes toward nonsexist language would be less likely to accept redundantly gender-marked nouns.

Furthermore, this attitude toward sexist and nonsexist language essentially reflects people's long-harboured gender belief systems. Modern Sexism Scale (Swim et al., 1995) and Neosexism Scale (Tougas et al., 1995) were found to be particularly useful to identify individuals subtle sexism without directly claiming women's inferiority to men. Typical items of the scales are designed to assess whether participants neglect or deny the continuous sexism in contemporary society or oppose affirmative actions for women (Swim & Cohen, 1997; Kite, 2001). For example, items include statements such as "Women often miss out on good jobs due to sexual discrimination" (Modern Sexism Scale) and "Women shouldn't push themselves where they are not wanted" (Neosexism Scale). Participants rate each item on a Likert scale, and the total score across all items reflects their overall level of sexist beliefs. The full list of items, along with the Chinese versions used in this study, is provided in Appendix 1. These scales have been used in previous research to explore the

relationship between individuals' gender beliefs and their attitudes toward or use of sexist and nonsexist language in English (e.g. Parks & Roberton, 2004; Swim, Mallett, Stangor, 2004; Sczesny, Moser, & Wood, 2015), making them particularly relevant for the present study.

Individuals with higher Modern Sexism were found to be insensitive to gender inequality compared to those who with lower sexism levels in the sense that they were more likely to overestimate the proportion of women in traditionally male-dominated occupations. Moreover, these Modern Sexists perceived the gender segregation of occupations as 'natural' because it was a process determined by the biological differences between men and women instead of socialisation and discrimination (Swim et al., 1995). In addition, individuals endorsing higher levels of Modern Sexism were more likely to self-define sexist language as nonsexist or normal resulting in failures in sexist language recognition (Swim, Mallett, Stangor, 2004; Sarrasin, Gabriel & Gygax, 2012), while individuals with very low levels of Modern Sexism tended to intentionally engage in nonsexist behaviours (Swim, Mallett, Stangor, 2004). On the other hand, Neosexism was defined as "manifestation of a conflict between egalitarian values and residual negative feelings toward women" (Tougas et al., 1995, p. 843). Neosexists showed strong oppositions to programs facilitating the integration of women because they valued the importance of maintaining the currently balanced "normal" roles of men and women. They believed their collective interests would be undermined once this balance was shifted. Sexist language, as a result, seems to be considered as symbolically important to individuals harbouring Neosexism to reinforce and perpetuate gender stereotypes and status between women and men (Sczesny, Moser, & Wood, 2015). In this sense, Modern Sexism and NeoSexism seem to reflect sexist individuals approval to social gender hierarchy to keep people "in their place" (Douglas &

Sutton, 2014). This leads to the final hypothesis of the present study: individuals with higher degrees of Modern Sexism and NeoSexism, thus being less positive toward gender equality, may be more likely to accept the redundantly gender-marked nouns in Chinese.

In summary, this study examines how individuals accept different linguistic representations of women and men based on occupational nouns in Chinese. Particularly, we focus on the potentially different acceptability of the redundantly gender-marked nouns compared to the corresponding default nouns and the potentially higher acceptability of the redundantly female-marked nouns compared to the corresponding male-marked ones. We hypothesise that gender stereotypes encoded in the grammatical genderless nouns, and individuals' social beliefs on gender equality and language inclusivity may influence this (in)acceptability.

4.3 Methodology

4.3.1 Participants

Our data was collected via wenjuan.com, a commonly used online survey platform in China with around 17.7 million users. Candidates were recruited by social media and word of mouth based on three criteria: participants should be born in Mainland China after 1979 (i.e. after China's reform and opening-up), should have received education in Mainland China for at least 12 years, and should confirm they speak and read in Mandarin/Simplified Chinese every day. 219 Candidates were recruited in which 200 of them fully met the criteria and completed the study. Therefore, data of these 200 participants were used for the analysis of the present study. Participants' ages reflected those born in the three decades of interest (71 born in 1980s, 104 born in 1990s, and 25 born in 2000s). Labelling individuals by the decade of birth such as *80*后 'post-80s', *90*后 'post-90s', or *00*后 'post-00s' rather than traditional generations is common practice in contemporary China, because cohorts with same decade of birth are believed to share salient collective identities (Qian & Li, 2020). This practice also suits better to the rapid development of Chinese society in youth research, as each cohort of a decade has been exposed to different stages of China's socio-economic development, media discourses, and gender ideologies (Feng, 2011). For example, the post-80s experienced the emergence of market reforms and early gender equality campaigns, while the post-90s and post-00s grew up in an increasingly digital and consumer-driven society. In the context of this study on the acceptability of redundant gender-marked nouns, such decade-based classification helps capture potentially subtle differences in perceptions of gender representations among younger Chinese speakers born after China's reform and opening-up.

About half of the participants (44.5%) lived in super first-tier cities of China (Beijing, Shanghai, Shenzhen, and Guangzhou) where the economy and culture is far highly developed compared to the average cities in China. A majority of participants (93%) reported having obtained at least a bachelor's degree. It is worth mentioning that gender information was collected for the purpose of analysing the potential gender differences in the current study. We offered "Female", "Male", "Non-binary", and "Unwilling to tell" four choices in the question. The distribution of our participants is 101 female, 96 male, 1 non-binary and 2 unwilling to tell. However, as can be seen from the distribution that it was not feasible for us to form a non-binary group separate from the female and male groups due to the extremely low number of participants identified as non-binary.

4.3.2 Sentence judgement task

We designed this task to collect participants' ratings of acceptability on sentences in different forms of representation. Participants were instructed to read each sentence aloud and make an intuitive judgment regarding its overall naturalness and fluency. They were explicitly asked not to concentrate on specific lexical items or grammatical structures, but to base their evaluation on their immediate impression. An 11-point Likert scale ranging from "-5" to "5" was used rate the acceptability. Participants were instructed that a score of "5" indicated that the sentence was perceived as highly natural, fluent, and fully acceptable; a score of "0" represented a neutral judgment; and a score of "-5" indicated that the sentence was perceived as highly unnatural and entirely unacceptable.

All the stimulus-sentences followed a simple Subject-Verb-Object (SVO) structure: (surname's) + (kin) + is + a + (noun, a professional role). Kinship terms were used to explicitly indicated the referential sex, and the key differences between forms of

representation were whether there was an adjective before the noun unambiguously emphasising the subject's sex again or not, and whether the sex manifested by the adjective was congruent with the referential sex or not. Using the noun 'nurse' as an example, the six forms of representation are illustrated in Table 4.2.

4.3.2.1 Forms of representation

Default forms. Grammatically, default forms are the standard forms of representation. As most nouns in Chinese can represent both women and men, it is neither grammatically necessary nor common to add extra information of the subject's sex to the nouns especially when the referential sex is explicitly informed earlier. These forms also served as the benchmark of the most acceptable forms in this sentence judgement task.

***Redundant forms*.** In contrast to the default forms, if an extra gender marker is added (i.e. an adjective meaning female or male) before noun regardless of the kinship terms' explicit indication of the subject's sex, then these forms of representation are redundant and not typical of common usage. The potentially differences in acceptability of the redundant forms compared to the default forms as well as between Female Redundant and Male Redundant were the main interests of the present study.

***Incongruent forms*.** In these forms, the extra gender markers before the noun are not congruent with the referential sex indicated by the kinship term. Sentences in these forms were included to be benchmark of the least acceptable forms in the sentence judgement task.

Table 4.2: Features and examples of the six forms of linguistic representation of women and men

Form	Referent	Marker	Example of sentences	Feature
Female Default	woman	n/a	陈某某的侄女是个护士。 [Chen's niece is a nurse.]	standard
Male Default	man	n/a	陈某某的侄子是个护士。 [Chen's nephew is a nurse.]	
Female Redundant	woman	女 [female]	陈某某的侄女是个**女**护士。 [Chen's niece is a **female** nurse.]	not standard
Male Redundant	man	男 [male]	陈某某的侄子是个**男**护士。 [Chen's nephew is a **male** nurse.]	
Female Incongruent	woman	男 [male]	陈某某的侄女是个**男**护士。 [Chen's niece is a **male** nurse.]	lexically incongruent
Male Incongruent	man	女 [female]	陈某某的侄子是个**女**护士。 [Chen's nephew is a **female** nurse.]	

4.3.2.2 Selection of nouns

45 nouns representing commonplace occupational roles were selected based on gender-stereotypes. These nouns were pre-categorised into three groups each containing 15 nouns: stereotypically male roles; stereotypically female roles, and roles with no obvious gender stereotypes. In this case, the potential influence of a noun's built-in gender-stereotype on the acceptability of forms can be more balanced. The selection and categorisation of the nouns were based mainly on previous studies (e.g. Chinese: Hu, 2016; Li, 2019; Zang, 2020; Zhang, 2014; Li, 2011; Other languages: Abudalbuh, 2012; Banaji & Hardin, 1996; Kennison & Trofe, 2003; Misersky et al., 2014) and the latest available reports from online human resource platforms in China when the study was designed (Zhaopin & Babytree, 2020; BOSS Zhipin Research Institute, 2020). New professions confirmed by Ministry of Human Resource and Social Security of China were also taken into account to form an up-to-date list of nouns (e.g. 外卖骑手 'takeaway delivery person', 网红 'internet influencer', 网络主播 'internet host'). It is worth mentioning that all the nouns selected do not contain characters or radicals which specifically indicate a person's sex, so the nouns can be used to refer either female or male. This means that words such as 保姆 'nanny' and 月嫂 'postpartum caregiver' were excluded in the selection considering that participants may automatically associate these nouns with women because of the radical 女 'woman/female' in the character 姆 'nanny' and 嫂 'married woman'. Table 4.3 in Section 4.3.2.3 shows the complete list of nouns included in the study.

4.3.2.3 Selection of surnames and kinship terms

The 15 surnames used to construct the sentences were selected from the most common 17 surnames reported by the 6th China Population Census (2011). Two surnames 李 'Li' and 孙 'Sun' were excluded as a way of reducing any possible priming effects as both of the characters contain the radical 子 'son'.

The kinship terms were used to explicitly inform the referential sex in the sentences, so the terms containing radicals indicating definitional sex were preferred in the selection process. However, since some of the professional roles selected were newly developed after 2010, kinship terms such as 爷爷/奶奶 'grandfather/grandmother' and 爸爸/妈妈 'father/mother' were excluded considering that some professions are not plausible for these relatives, and these relatives tend to be respected more than the others, leading to potential acceptability differences in the judgement of the sentences. As can be seen from Table 2.2 listing the kinship terms selected for the task, terms referring to a female kin all contain the character or radical 女 'woman/female', but only three corresponding male terms contain the character or radical 子 'son' or 男 'man'. This is a limitation in the design that cannot be avoided because of the nonequivalent nature of female and male kinship terms in Chinese (Zhang, 2007), but the kinship terms 弟弟 'younger brother', 叔叔 'father's brother', and 哥哥 'older brother' with no radicals indicating maleness are very frequent with no ambiguities in sex distinctions.

Table 4.3: Kinships terms selected to form the sentences in the judgement task

Female	女儿 [daughter]	侄女 [niece]	妹妹 [younger sister]	姐姐 [older sister]	姑姑 [father’s sister]	小姨 [mother’s sister]
Male	儿子 [son]	侄子 [nephew]	弟弟 [younger brother]	哥哥 [older brother]	叔叔 [father’s brother]	舅舅 [mother’s brother]

4.3.2.4 Procedure of sentence judgement task

Since each of the 45 nouns were used in all six conditions, this made for a total of 270 unique sentences. The sentences were randomly assigned to six lists with one noun appearing only once in each list. Accordingly, every participant received 45 sentences to for acceptability using a slider on an 11-point Likert scale from “-5 - totally unacceptable” to “5 - totally acceptable”. However, no specific criteria of rating such as ‘to rate based on grammatical acceptability’ or ‘to rate based on consistency between genders and social roles’ were given to avoid disclosing our focus of this task. Even when the participants asked for more instructions, they were encouraged to rate directly based on their first impression after reading a sentence.

4.3.3 Gender-stereotype rating task

Our second goal was to examine the potential influences of gender-stereotypes encoded in nouns on the acceptability of our sentences in question. The same 45 nouns (see Table 4.4) used in forming the sentences were randomly listed in this gender-stereotype rating task for participants to rate how strongly they associated certain nouns with women or men based on their first impression of reading the noun. The rating range was also an 11-point Likert scale with “-5” on the left end reflecting “most associated with men” and “5” on the right end as “most associated with women”. Participants were also given the choice of “0” if they associated certain nouns equally with both women and men. The instructions clearly told the participants to rate the nouns based on their own associations and beliefs rather than what the expected social norm was. In this way, the relation between a participant’s acceptability of the forms and their own gender stereotypes with certain nouns can be examined more clearly.

Table 4.4: The complete list of nouns used in the sentence judgement task and the gender-stereotype rating task pre-categorised in stereotypically male roles, stereotypically female roles, and roles with no obvious gender-stereotypes

Stereotypically male	**No obvious stereotype**	**Stereotypically female**
保安 [security guard]	演员 [actor/actress]	秘书 [secretary]
司机 [driver]	歌手 [singer]	护士 [nurse]
警察 [police officer]	明星 [celebrity]	老师 [teacher]
老板 [boss]	职员 [clerk]	会计 [accountant]
领导 [(political) leader]	记者 [journalist]	模特 [model]
作家 [writer]	医生 [doctor]	翻译 [translator]
导演 [(film/TV) director]	律师 [lawyer]	客服 [customer service]
法医 [forensic surgeon]	村官 [village official]	护工 [care worker]
院士 [academician]	博士 [PhD]	网红 [internet influencer]
军官 [commissioned officer]	大学生 [university student]	助理 [assistant]
消防员 [fire fighter]	主持人 [host]	收银员 [cashier]
飞行员 [pilot]	公务员 [civil servant]	服务员 [waiter/waitress]
程序员 [programmer]	运动员 [sportsperson]	钟点工 [cleaner]
科学家 [scientist]	研究员 [researcher]	乘务员 [attendant]
外卖骑手 [takeaway delivery person]	艺术家 [artist]	网络主播 [internet host]

4.3.4 Attitudes measuring tasks

Our third goal of the present study was to look at the potential influences of participants' attitudes toward gender equality and language inclusivity on the acceptability of our sentences in question, thus we measured each participant's attitudes after the gender-stereotype rating task.

4.3.4.1 Scales of gender beliefs

Participants' gender beliefs were measured by a questionnaire containing 18 items: 8 from the Modern Sexism Scale (MSS) (Swim et al., 1995) and 10 from the Neosexism Scale (NS) (Tougas et al., 1995). It is worth mentioning one item ("Women will make more progress by being patient and not pushing too hard for change.") from NS was omitted because all 5 participants in the piloting process reported confusion about rating this statement, thus 10 rather than the original 11 items were used from NS. All items were translated into simplified Chinese with minor alternations to suit the Chinese context (see Appendix 1 for the complete questionnaire). Researchers (e.g. Campbell et al., 1997; Parks & Robertson, 2004) generally agreed with the combination of MSS and NS, as the scales measure covert and subtle sexism from different perspectives without directly asking participants' attitudes toward overt sexist statements admitting that men are superior to women: MSS emphasises the rejection of continued sexism and the hostility to women's economic and political demands, while NS directly focuses on the opposition to affirmative actions for women in labour force.

In this part, participants were asked to rate to what degree they agree with each statement in MSS and NS on a 11-point Likert scale from "-5 - extremely disagree", "0 - undecided", to "5 - totally agree". The responses were scored from 0 to 10 corresponding to the points on the Likert scale for analysis convenience. The range of total scores was therefore from

0 to 180 with higher total scores reflecting more positive attitudes toward women's rights and gender equality. Cronbach's alpha was used to test the internal consistency of MSS and NS in the current study. The complete questionnaire indicates good reliability, α = .87, as well as the subgroups: α = .79 for MSS and α = .80 for NS.

4.3.4.2 Inventory of attitudes toward sexist/nonsexist language

Participants' attitudes toward sexist and nonsexist language were measured by the Inventory of Attitudes Toward Sexist/Nonsexist Language in Chinese (IASNL-G Chinese) (Fan & Lawyer, 2024). We created this inventory specifically for Mainland China by adopting the Inventory of Attitudes Toward Sexist/Nonsexist Language - General (IASNL-G, Parks & Roberton, 2000). The IASNL-G Chinese measures participants' attitudes in three aspects with a total of 24 items: beliefs about sexist language (8 items), recognition of sexist language (8 items), willingness to use inclusive language (8 items).

This inventory was the last task in the current study. All items in the IASNL-G Chinese were rated based on a 11-point Likert scale to maintain parity with scores in the previous tasks. Accordingly, the total scores ranged from 0 to 240. Higher scores represent a more supportive general attitude toward nonsexist and inclusive language. According to Cronbach's alpha, the IASNL-G Chinese in the current study was highly reliable overall with α = .91. The three sections also showed good reliability: beliefs about sexist language, α = .83; recognition of sexist language, α = .85; willingness to use inclusive language, α = .83.

4.3.5 Data analysis

Data analysis focused on the ratings of acceptability in the sentence judgement task and how ratings of nouns' gender-stereotype and participants' scores of attitudes toward gender equality and language inclusivity may influence the acceptability. Since the acceptability of sentences were rated in Likert scale, the nature of the responses was ordinal. This means that although the levels of acceptability were labeled numerically as '-5', '-4', ... '4', '5', the intervals between the 11 levels were not necessarily to be equal. Therefore, we cannot automatically assume that the increase in the acceptability level from '3' to '4' was the same as the increase from '4' to '5'. This ordinal nature of the responses lead us to fit an ordinal regression model, namely a Cumulative Link Mixed Model, to analyse our data. This method can handle unequal variance and skewed distributions (Bürkner & Vuorre, 2019). Therefore, ordinal models have an advantage over more standard models which require normally distributed data with equidistant categories of responses and equal variances leading to serious errors in inference (e.g. Type I and Type II errors, inversions of effects) (Liddell & Kruschke, 2018).

4.4 Findings

4.4.1 Ratings of sentence judgement task

Expectedly, sentences with the default forms were rated as the most acceptable with medians being the top scale point 5 and means greater than 4. Correspondingly, sentences with the incongruent forms were judged as the least acceptable with medians being the bottom scale point -5 and means lower than -4 (see Table 4.5). As for the redundant forms, means of ratings fell into the middle with Female Redundant rated higher than Male Redundant. The median of Female Redundant was 2, while it for Male Redundant was 1 scale lower. Furthermore, as shown in Figure 4.1, distributions of ratings on the Female and Male Redundant based on Kernel density estimation showed that Female Redundant gained more ratings higher than 3 reflecting high acceptability, while Male Redundant gained more ratings lower than 0 indicating low acceptability. Furthermore, looking at the ratings given by participants born in different decades (Table 4.6 and Figure 4.2), we found that while Female Redundant were rated higher on average in every decade of cohorts, participants born in 1990s showed the largest difference on ratings between Female Redundant and Male Redundant.

Table 4.5: The means, standard deviations (SD), and medians of the acceptability of sentences by Form

Form	Mean	SD	Median
Female Default	4.38	1.61	5
Male Default	4.40	1.57	5
Female Redundant	1.26	3.49	2
Male Redundant	.59	3.50	1
Female Incongruent	- 4.05	2.11	-5
Male Incongruent	- 4.08	2.05	-5

Table 4.6: Means, standard deviations (SD), and medians of the acceptability of sentences by Form and participants' decades of birth (Decade)

Form	Decade					
	80s (n = 71)		90s (n = 104)		00s (n = 25)	
	Mean(SD)	**Median**	**Mean(SD)**	**Median**	**Mean(SD)**	**Median**
Female Default	4.48(1.49)	5	4.46(1.45)	5	3.76(2.32)	5
Male Default	4.44(1.57)	5	4.41(1.53)	5	4.29(1.73)	5
Female Redundant	.80(3.64)	2	1.40(3.41)	2	2.01(3.18)	3
Male Redundant	.391(3.62)	1	.5(3.37)	1	1.49(3.58)	3
Female Incongruent	- 4.23(1.8)	-5	- 4.04(2.19)	-5	- 3.59(2.49)	-5
Male Incongruent	- 4.35(1.52)	-5	- 4.03(2.22)	-5	- 3.56(2.47)	-5

Figure 4.1: The probability density of Acceptability ratings on sentences in Female Redundant and Male Redundant Form.

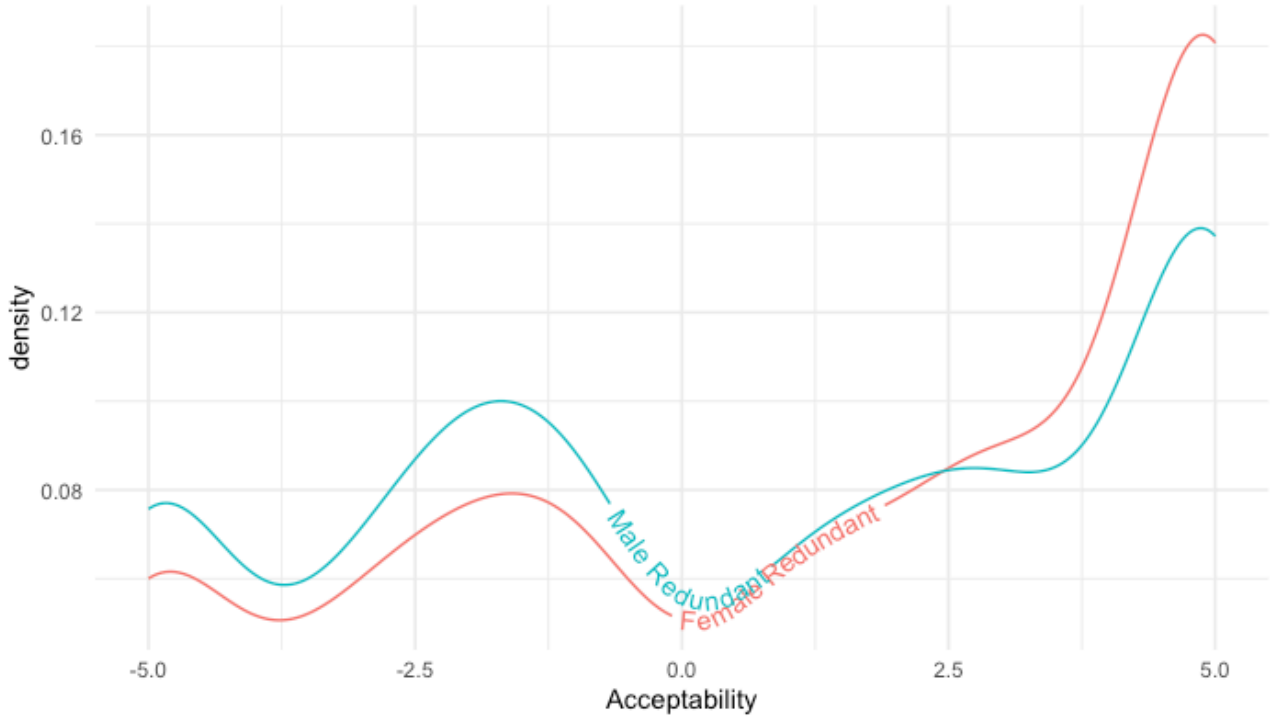
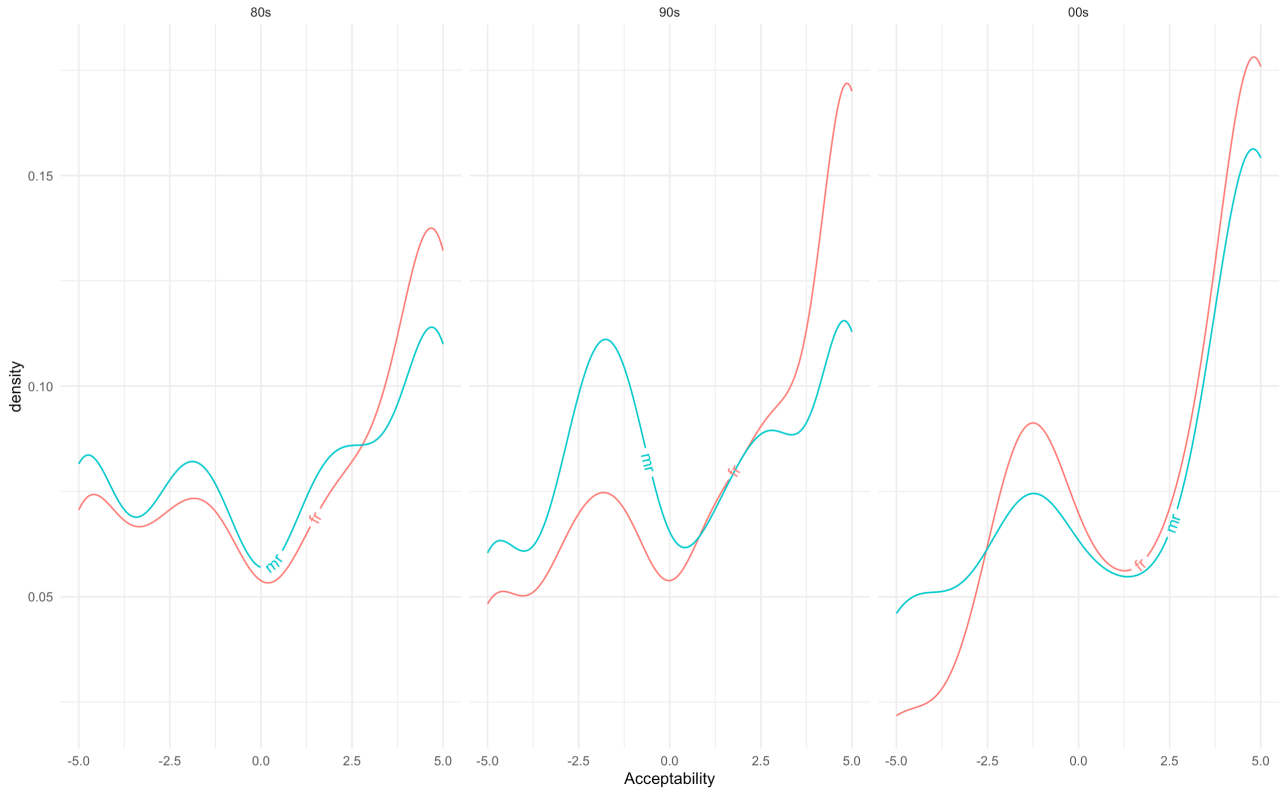


Figure 4.2: The probability density of Acceptability ratings on sentences in Female Redundant (fr) and Male Redundant (mr) Form by Decade.



4.4.2 Gender stereotypes of nouns

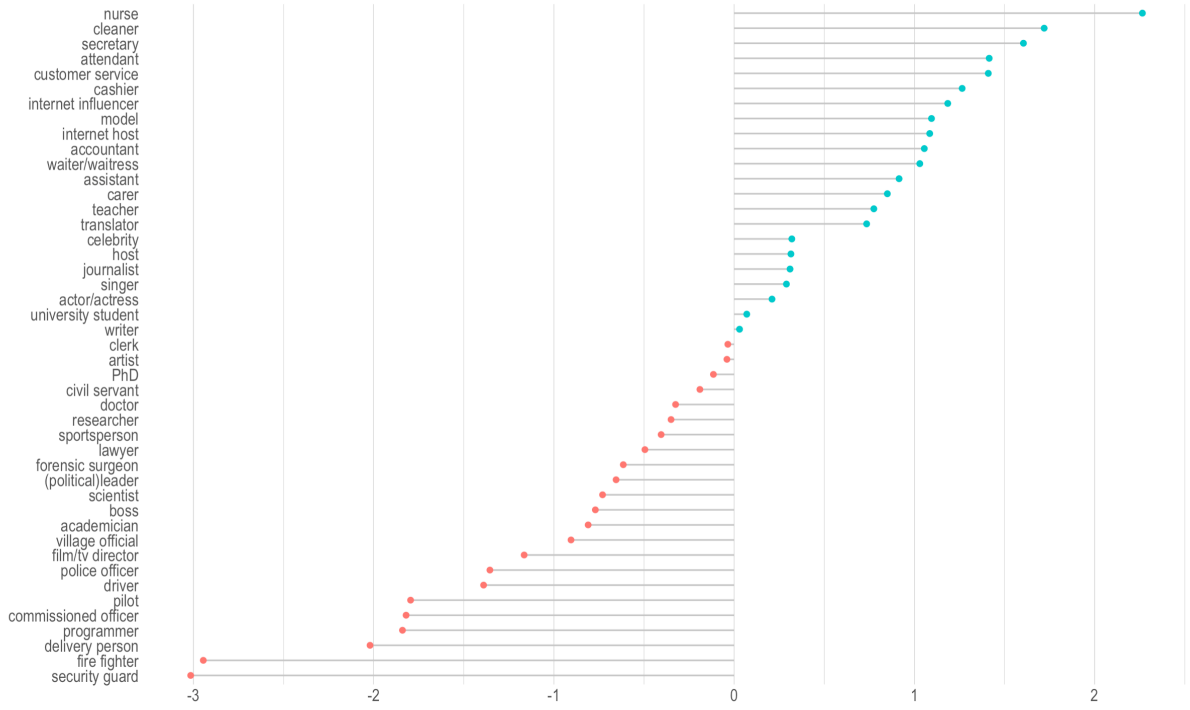
As can be seen from Figure 4.3, the 45 nouns selected in this study were rated differently in terms of their encoded gender stereotypes. Nouns rated lower than 0 reflected male-biases, lower means of ratings reflecting stronger male-biases. On the other hand, nouns rated higher than 0 showed female-biases, higher means of ratings reflecting stronger female-biases. It is worth mentioning that the ratings only showed participants' explicit attitudes toward the nouns' gender-stereotypes. This means that those participants who rated a noun's gender-stereotype as "0" may still hold underlying gender biases but deliberately expressed a neutral stance, indicating that they believed the social role could

be associated with both women and men. For example, a participant might rate ‘programmer’ as ‘0’ to signal gender neutrality, even if they unconsciously associate programmers more with men. Table 4.7 showed the 5 most male-biased and the 5 most female-biased nouns based on the means of ratings.

Table 4.7: The means and standard deviations(SD) of ratings on the most gender-biased nouns

Men-biased nouns	**Mean(SD)**	**Women-biased nouns**	**Mean(SD)**
保安 [security guard]	-3.02(1.82)	护士 [nurse]	2.27(1.82)
消防员 [fire fighter]	-2.95(1.89)	钟点工 [cleaner]	1.72(1.65)
外卖骑手 [delivery person]	-2.02(1.66)	秘书 [secretary]	1.61(1.61)
程序员 [programmer]	-1.84(1.62)	乘务员 [attendant]	1.42(1.52)
军官 [commissioned officer]	-1.82(1.72)	客服 [customer service]	1.41(1.64)

Figure 4.3: Distribution of means of ratings on the nouns' gender stereotypes (higher scores = female)



4.4.3 Social beliefs on gender equality and language inclusivity

Looking at participants' scores in attitudes toward gender equality (Gender Sum - total scores of MSS and NS, see Table 4.8) and sexist/nonsexist language (Language Sum - total scores of IASNL-G Chinese, see Table 4.9), we found that on average female participants scored higher than male participants in both attitude scales and observed a high correlation between Gender Sum and Language Sum, $r = .67$, $p < .001$ (See Table 4.10). However, the shared variance was 44%, meaning that although the two scales are significantly relayed, they also capture different aspects of participants attitudes - more than half of the variance remains unique to each scale. Therefore, excluding either one from the model could reduce the model's explanatory power and overlook important information. To address this, we combined the Gender Sum and Language Sum into a single factor - Attitude Sum - to capture participants' broader social beliefs in gender and language equality, while retaining the distinct contributions of both original scales. We calculated the new variable Attitude Sum (Table 4.11) by combining the total scores of Gender Sum and Language Sum while accounting for their proportional ranges. Since Gender Sum ranges from 0 to 180 and Language Sum ranges from 0 to 240, we weighted their contributions proportionally to ensure balance. The resulting Attitude Sum variable has a range of 0 to 310.44.

Table 4.8: The means and standard deviations of participants' attitudes toward gender equality (Gender Sum with a possible range from 0 to 180)

Gender Sum	**Female** (n = 101)	**Male** (n = 96)	**Non-binary** (n = 1)	**Unwilling to tell** (n = 2)	**Total** (n = 200)
Data Range	86 - 180	45 - 178	149	114 - 173	45 - 180
Mean (SD)	143.82 (19.14)	108.42 (25.78)	149	143.50 (29.67)	126.85 (28.75)

Table 4.9: The means and standard deviations of participants' attitudes toward sexist/ nonsexist language (Language Sum with a possible range from 0 to 240)

Language Sum	**Female** (n = 101)	**Male** (n = 96)	**Non-binary** (n = 1)	**Unwilling to tell** (n = 2)	**Total** (n = 200)
Data Range	64 - 240	37 - 240	173	148 - 154	37 - 240
Mean (SD)	175.66 (30.63)	132.95 (38.74)	173	151 (3.02)	154.9 (40.56)

Table 4.10: Intercorrelations (*r* value) among Gender Sum, Language Sum, Attitude Sum and Gender with female coded as 0 and male coded as 1. (***p < .001)

	Gender Sum	**Language Sum**	**Attitude Sum**	**Gender**
Gender Sum	1.00	.67***	.81***	- .62***
Language Sum		1.00	.98***	- .52***
Attitude Sum			1.00	- .59***
Gender				1.00

Table 4.11: The means and standard deviations of Attitude Sum with a possible range from 0 to 310.44

Attitude Sum	**Female** (n = 101)	**Male** (n = 96)	**Non-binary** (n = 1)	**Unwilling to tell** (n = 2)	**Total** (n = 200)
Data Range	103.90 - 310.44	50.30 - 309.46	228.17	191.93 - 215.00	50.30 - 310.44
Mean (SD)	228.28 (37.07)	168.13 (46.00)	228.17	203.46 (11.60)	199.16 (51.05)

To clarify the scale and interpretation of participants' Attitude Sum scores in Table 4.11, we categorised the total scores into five levels based on equal percentage intervals of the maximum possible score (310.44, see Table 4.12). Based on this categorisation, female participants on average held moderately egalitarian attitudes, while male participants' attitudes were more neutral or mixed.

Table 4.12: Categorisation of Attitude Sum

Attitude Sum Score Range	**Percentage of Maximum**	**Interpretation**
248.35 – 310.44	80–100%	Strongly egalitarian attitudes
186.26 – 248.34	60–79%	Moderately egalitarian attitudes
124.18 – 186.25	40–59%	Neutral or ambivalent
62.09 – 124.17	20–39%	Moderately traditionalist attitudes
0 – 62.08	0–19%	Strongly traditionalist attitudes

4.4.4 Results of the Cumulative Link Mixed Model

Our goal is to explore how the different forms of linguistic representation of women and men are accepted taking into account the influences of nouns' gender stereotypes and participants' social beliefs. Before conducting the planned pairwise comparisons between female and male referents within each Form condition, we first ran an omnibus Cumulative Link Mixed Model to assess the overall effect of Form (collapsed into three general levels: Default, Redundant, and Incongruent). This model was implemented with the Laplace approximation using the ordinal package (Christensen, 2019) of R (R Core Team, 2022) in RStudio (RStudio Team, 2022). The outcome variable was participants' ratings on the sentences (Acceptability in 11 points from -5 to 5). The fixed effects were the three-level factor Form, nouns' gender stereotypes (NounScore), participants' beliefs on gender equality and language inclusivity (AttSum), Decade (80s/90s/00s), along with all two-way interactions involving Form. The random effect was Participants (Variance = 1.80 , SD = 1.34). This omnibus model tested whether the forms of gender marking (Default, Redundant, Incongruent) had a significant overall effect on Acceptability ratings. The model was significant overall (logLik = -11325.13, AIC = 22700.27). Form significantly predicted Acceptability ($F(2, Inf) = 2270.165$, $p < .001$). Acceptability of Default was the highest, significantly higher than it for Redundant ($\beta = 3.13$, $z(Inf) = 40.39$, $p < .001$) and Incongruent ($\beta = 7.31$, $z(Inf) = 67.13$, $p < .001$). Acceptability of Redundant was significantly higher than it for Incongruent ($\beta = 4.18$, $z(Inf) = 51.38$, $p < .001$).

Following the omnibus analysis, we conducted a more fine-grained Cumulative Link Mixed Model with Form expanded into six levels (Female Default, Male Default, Female Redundant, Male Redundant, Female Incongruent, Male Incongruent). This model again used the ordinal package with the Laplace approximation, and included the same fixed

effects and interactions, focusing now on the contrasts between representations of female and male referents. The model was significant overall (logLik = - 11273.40, AIC = 22626.80). The threshold coefficients is reported in Table 4.13 as they define the boundaries between response categories, enabling interpretation of the ordinal outcome. When applicable, post hoc analysis was conducted using estimated marginal means (Lenth, 2022).

Table 4.13: Threshold coefficients of the model fitted to Acceptability

Threshold	B (Coefficient)	Standard Error	*z*-value
- 5 | - 4	- 3.89	.51	- 7.65
- 4 | - 3	- 3.55	.51	- 6.98
- 3 | - 2	- 2.96	.51	- 5.83
- 2 | - 1	- 2.33	.51	- 4.60
- 1 | 0	- 1.79	.51	- 3.52
0 | 1	- 1.59	.51	- 3.14
1 | 2	- 1.11	.51	- 2.19
2 | 3	- 0.69	.51	- 1.37
3 | 4	- 0.13	.51	- .25
4 | 5	0.29	.51	.58

4.4.4.1 The influence of Form

Form significantly predicted Acceptability ($F(5, Inf) = 904.07$, $p < .001$). Acceptability of Female Redundant was significantly lower than it for Female Default ($\beta = -2.88$, $z(Inf) = 27.81$, $p < .001$), and significantly higher than it for Female Incongruent ($\beta = 4.44$, $z(Inf) = 41.36$, $p < .001$). Similarly, Acceptability of Male Redundant was significantly lower than it for Male Default ($\beta = -3.47$, $z(Inf) = 31.90$, $p < .001$), and significantly higher than it for Male Incongruent ($\beta = 4.00$, $z(Inf) = 38.98$, $p < .001$). Furthermore, other variables being controlled, in general we found Female Default were not significantly different from Male Default ($\beta = -.19$, $z(Inf) = -1.66$, $p > .05$), nor were Female and Male congruent forms ($\beta = -.05$, $z(Inf) = -.47$, $p > .05$). However, Acceptability of Female Redundant was significantly higher than it for Male Redundant ($\beta = .40$, $z(Inf) = 4.91$, $p < .001$)

4.4.4.2 The influence of nouns' gender stereotypes (NounScore)

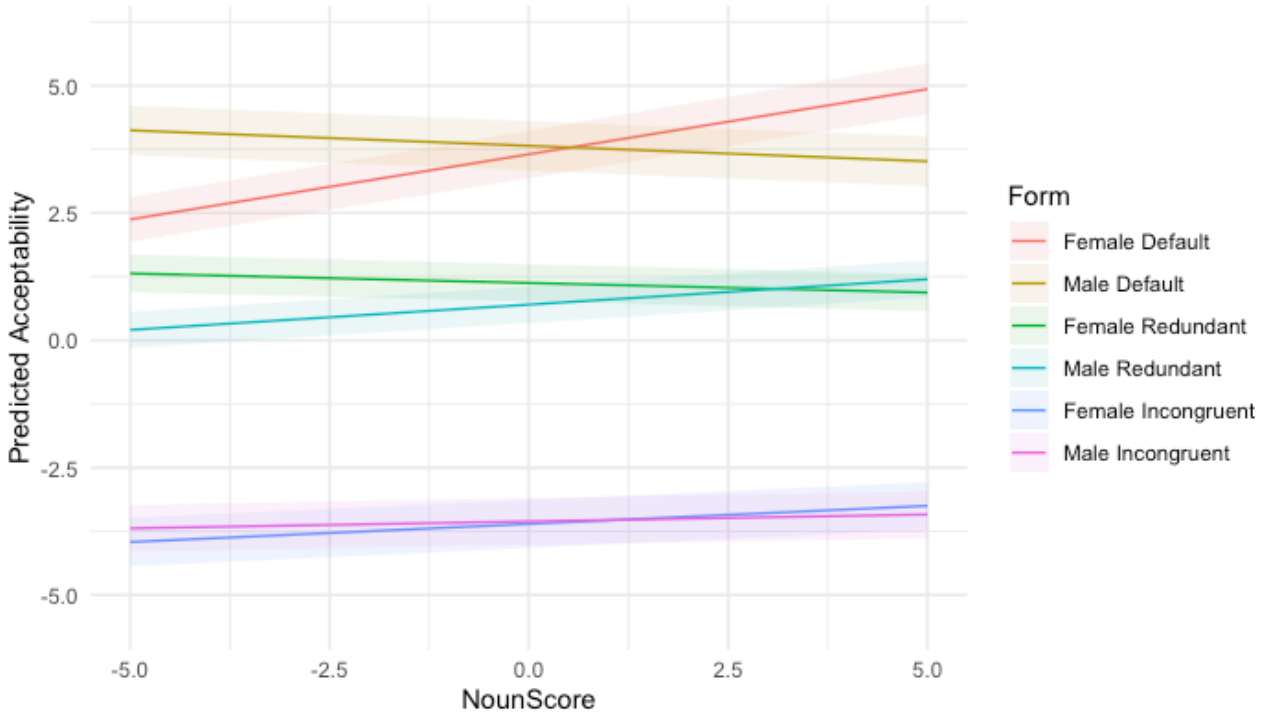
NounScore significantly predicted Acceptability (F(1, Inf) = 18.08, p < .001). In addition, the significant interaction between Form and NounScore (F(5, Inf) = 10.79, p < .001) showed nouns' gender stereotypes had different effects on Acceptability across Form (see Figure 4.4). First, looking at our focus of the redundant forms, we found significant different effects of NounScore on Female Redundant and Male Redundant (β = - .14, z(Inf) = -3.81, p < .01): while Acceptability of Male Redundant significantly increased per point rise in NounScore (i.e. more female-biased), Acceptability of Female Redundant only showed a minor decreasing trend without reaching statistical significance (see Table 4.13). Surprisingly, we also found a corresponding difference in the Acceptability of Female Default and Male Default (β = .32, z(Inf) = 5.81, p < .001): Acceptability of Female Default significantly increased per point rise in NounScore, a significant effect not found for Male Default (see Table 4.13). Looking at the observations of the redundant and the default forms together, it is interesting to find the encoded gender biases of nouns mainly affect Acceptability of Female Default and Male Redundant. This reflected that sentences in Female Default and Male Redundant were predicted to be significantly more acceptable when the nouns involved were traditionally more associated with women. In other words, expressions such as "*Chen's niece is a nurse*" predicted higher acceptability than "*Chen's niece is a pilot*". "*Chen's nephew is a male nurse*" predicted higher acceptability than "*Chen's nephew is a male pilot*". However, no corresponding significant changes of Acceptability were observed in sentences in Male Default and Female Redundant. In other words, no significant differences were found between "*Chen's nephew is a nurse*" and "*Chen's nephew is a pilot*" or between "*Chen's niece is a female nurse*" and "*Chen's niece is a female pilot*". It is also worth mentioning that the effect of NounScore on Female Default was even significantly stronger than it on Male Redundant (β = .16, z(Inf) = 3.46, p

< .05). Acceptability of neither Female Incongruent nor Male Incongruent was found to be significantly influenced by NounScore (see Table 4.13).

Table 4.14: Predicted effects of NounScore on Acceptability of sentences by Form.

Form	B (SE)	*F*-ratio	df1/df2	*P*-value
Female Default	.26(.04)	46.30	1/Inf	< .001
Male Default	- .06(.04)	2.39	1/Inf	> .05
Female Redundant	- .04(.03)	2.14	1/Inf	> .05
Male Redundant	.10(.03)	15.61	1/Inf	< .001
Female Incongruent	.07(.04)	3.62	1/Inf	> .05
Male Incongruent	.03(.04)	.58	1/Inf	> .05

Figure 4.4: Predicted trends of Acceptability of sentences by Form under the effects of NounScore (negative = more male bias, positive = more female bias) .



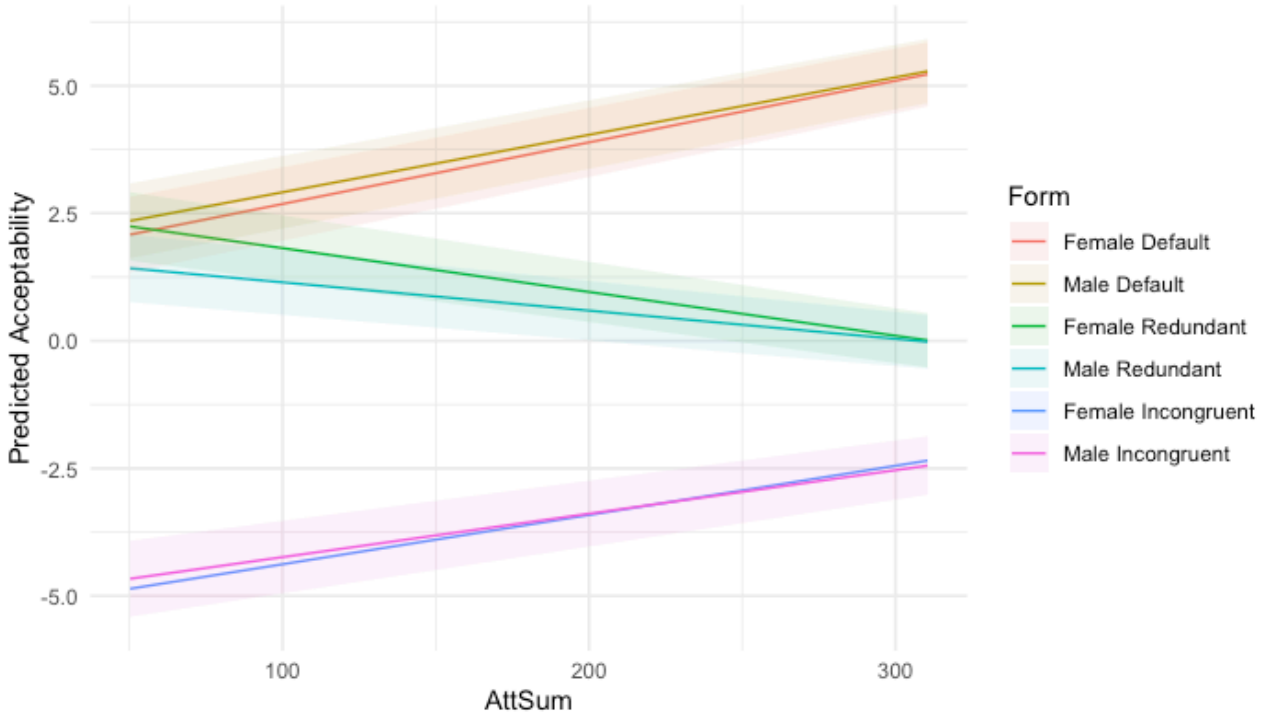
4.4.4.3 The influence of social beliefs (AttSum)

AttSum significantly predicted Acceptability ($F(1, Inf) = 5.41$, $p < .05$). Furthermore, the significant interaction between Form and AttSum ($F(5, Inf) = 62.57$, $p < .001$) showed participants' social beliefs on gender equality and language inclusivity had different effects on Acceptability across Form (see Figure 4.5). Focusing on the redundant forms first, we found significant negative effects of AttSum on both Female Redundant and Male Redundant (See Table 4.14), reflecting that more positive general attitudes toward gender equality and inclusive language predicted lower acceptability of sentences in the redundant forms. In addition, the effects of AttSum were not found to be significantly different between the redundant forms (β = - .00, $z(Inf)$ = - 2.67, $p > .05$). More interestingly, we found the redundant forms were the only two forms negatively predicted by AttSum. Looking at the default forms, one point higher in AttSum significantly predicted .01 unit increase in both Female Default and Male Default (see Table 4.14), reflecting that more positive attitudes predicted higher acceptability of sentences in the default forms. We also found a similar trend in the incongruent forms, an effect not significantly different from the corresponding default forms (Female: β = .00, $z(Inf) = 1.67$, $p > .05$; Male: β = .00, $z(Inf) = 1.33$, $p > .05$, see Figure 4.5). Consequently, the effects of AttSum were significantly different between Female Default and Female Redundant (β = .02, $z(Inf) = 11.38$, $p < .001$) and between Male Default and Male Redundant (β = .02, $z(Inf) = 9.57$, $p < .001$).

Table 4.15: Predicted effects of AttSum on Acceptability of sentences by Form.

Form	B (SE)	*F*-ratio	df1/df2	*P*-value
Female Default	.01(.002)	24.37	1/Inf	< .001
Male Default	.01(.002)	21.89	1/Inf	< .001
Female Redundant	- .01(.002)	16.24	1/Inf	< .001
Male Redundant	- .01(.002)	6.93	1/Inf	< .01
Female Incongruent	.01(.002)	17.36	1/Inf	< .001
Male Incongruent	.01(.002)	13.48	1/Inf	< .001

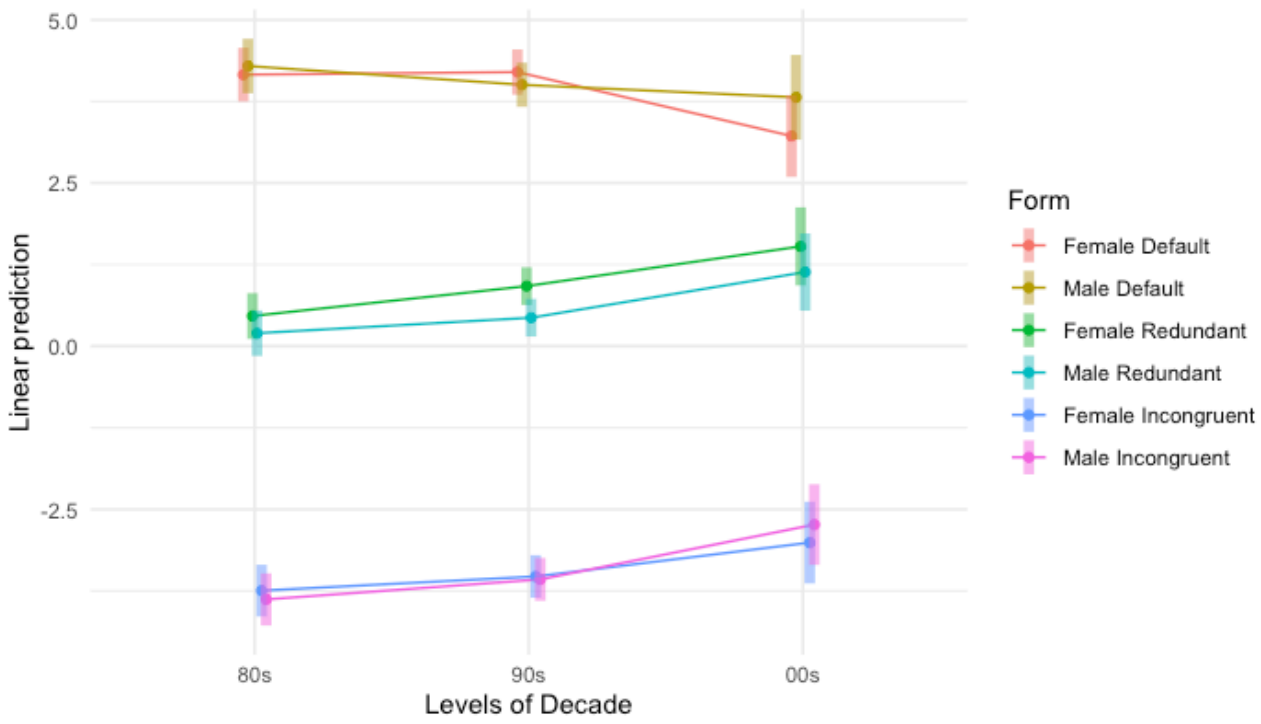
Figure 4.5: Predicted trends of Acceptability of sentences by Form under the effects of AttSum (higher scores = more supportive attitudes toward gender equality and language inclusivity).



4.4.4.4 The influence of decades of birth (Decade)

Decade did not significantly predict Acceptability (F(2, Inf) = .85, p > .05). However, the significant interaction between Form and Decade (F(10, Inf) = 10.27, p < .001) indicated participants born in different decades showed different levels of Acceptability across Form (see Figure 4.6). Focusing on Acceptability of the redundant forms, in the 90s cohort we observed significantly higher Acceptability in Female Redundant compared to Male Redundant (β = .48, z(Inf) = 5.38, p <.001), an effect not similarly observed in neither the 80s cohort (β = .26, z(Inf) = 2.42, p > .05) nor the 00s cohort (β = .39, z(Inf) = 2.01, p > .05). On the other hand, compared to the 80s cohort we found the 00s cohort showed significant higher Acceptability on both Female Redundant (β = 1.07, z(Inf) = 3.02, p <.01) and Male Redundant (β = .94, z(Inf) = 2.68, p < .05). Surprisingly, we find the 00s cohort showed significantly lower Acceptability to Female Default compared to their 80s (β = - .94, z(Inf) = 2.50, p < .05) and 90s (β = - .98, z(Inf) = 2.72, p < .05) cohorts, although no significant difference was observed between Female Default and Male Default in the 00s cohort (β = - .59, z(Inf) = - 2.38, p > .05). Furthermore, the 00s cohort showed significantly higher Acceptability to Male Incongruent compared to the 80s (β = 1.15, z(Inf) = 3.08, p < .01) and 90s (β = 1.15, z(Inf) = 3.08, p < .01) cohorts. Again, within the 00s cohort, the difference between Female Incongruent and Male Incongruent did not reach statistical significance (β = - .28, z(Inf) = - 1.20, p > .05).

Figure 4.6: Predicted Acceptability of sentences by Form under the effects of Decade.



4.5 Discussions

4.5.1 Acceptability of redundant forms compared to default forms

Our first question of this present study is how individuals accept the grammatically, semantically and referentially redundant gender-marked nouns compared to the standard default nouns with zero gender markings. To answer this question, we first created a context in which subject's sex was explicitly informed by a kinship term, then manipulated the combinations of subject' referential sex and gender markers of nouns, to compare the acceptability of four representations of women and men: Female Default, Male Default, Female Redundant, and Male Redundant. We also hypothesised that Female Redundant may gain higher acceptability than Male Redundant. Expectedly, other variables being controlled including gender stereotypes of the target nouns, participants' general social beliefs on gender equality and language inclusivity, and participants' decades of birth, we found both default forms gained a ceiling-effect of high acceptability, both higher than the corresponding redundant forms. This suggested that the default forms of nouns, being the standard forms of representation of women and men in Chinese, are still acknowledged by most of the participants at least when there is no ambiguity of the referential sex. In general, both the redundant forms were rated as basically acceptable. More importantly, our first hypothesis is supported that Female Redundant was significantly more acceptable than Male Redundant. This is likely to be the first empirical data showing that the asymmetry of gender markings may not only exist in the more frequent use of overt female marking (Hellinger & Buβmann, 2001; 2002; 2003; 2015; Menegatti & Rubini, 2017), but also exist in people's different perceptions on overt female and male markings.

4.5.2 The influence of nouns' gender stereotypes

Having collected the rated gender stereotypes of the nouns representing different social roles, we further examined if this stereotype information influences the acceptability of different forms of representation, especially the redundantly gender-marked forms even when we explicitly inform the referential sex at the beginning of the sentences. Interestingly, we found nouns' gender stereotypes only significantly influenced the acceptability of Male Redundant and Female Default, but had no significant effect on the acceptability of Female Redundant and Male Default This finding is notable because only the conditions involving male referents (Male Redundant and Male Default) are consistent with our hypothesis.

Participants' higher acceptability of redundantly gender-marked nouns related to male referents with more female-biased jobs compared to those with more male-biased jobs suggested that the redundant male marker here was perceived as somewhat necessary. If we treat the more female-biased nouns such as 护士 'nurse', 钟点工 'cleaner', or 秘书 'secretary' as containing the semantic feature <+ female>, adding an extra male marker to the target nouns in this situation is more likely to be acceptable as a label emphasising the male referent's counter-stereotypical role. In this sense, the finding agrees with previous statements on the mechanism of overt gender marking (Stanley, 1977; Farris, 1998; Hellinger & Buβmann, 2015).

However, in our study the relatively stable and high acceptability of Female Redundant cannot be fully explained by nouns' gender stereotypes. This is the second asymmetry we found in the study. Had it been symmetry, the acceptability of Female Redundant should have also been significantly influenced by noun's gender stereotypes with the acceptability

being higher when female referents introduced with male-biased jobs and conversely with the acceptability being lower when the referents introduced with female-biased jobs.

Surprisingly, the gender stereotype effect we failed to find in Female Redundant was indeed found in Female Default. Acceptability was significantly lower when female referents were introduced by the default nouns representing more male-biased jobs compared to the default nouns representing more female-biased jobs, a pattern not correspondingly found in Male Default. This means participants tended to accept the default representation of men regardless of nouns' gender stereotypes, a manifestation of the "male generics" (Hellinger & Bußmann, 2001). However, participants were generally more hesitant to accept the same default representation when women violate their gender stereotypes. This is somewhat unexpected to us considering the context that explicit information of the subject being a woman was given in addition to the fact that default representation is grammatically standard. This subtle behaviour indicated that participants may consider an overt female marker as necessary to signpost the perceived deviations of feminine reference from the male-biased default nouns, a lack of which may symbolise women's full entrance to the conventional semantic space belonging to men making some individuals uncomfortable (Stanley, 1977), while they seem not to mind men entering into the conventional <+ Female> or <- Male> semantic space. This is the third asymmetry we found in the study.

Putting it together, the findings reflected that gender stereotypes encoded in the nouns cannot fully explain the robustly high acceptability of Female Redundant. Otherwise, gender stereotypes would have the symmetrical influences between Female Default and Male Default, and between Female Redundant and Male Redundant as discussed earlier.

On the other hand, it is unlikely that gender stereotypes were not activated at all because of our immediate unambiguous introduction of referential sex as how Kreiner and colleagues interpreted their findings (2008), because otherwise it cannot explain the significant influences of nouns' gender stereotypes on Male Redundant and Female Default in our findings. The asymmetrical influences of gender stereotypes led us to the examinations on the influences of participants' social beliefs on the acceptability of different representations of women and men.

4.5.3 The influence of social beliefs

In the exploration on how participants' social beliefs may influence the acceptability of different representations, we created a variable AttSum representing participants' general attitudes toward gender equality and language inclusivity through combining participants' scores on the Modern Sexism Scale (Swim et al., 1995), the Neosexism Scale (Tougas et al., 1995), and the ISANL-G Chinese (Fan & Lawyer, 2024). Our hypothesis is supported as we found more egalitarian attitudes toward gender and language showed lower acceptability to the redundantly gender-marked forms and correspondingly higher acceptability to the default forms. We believe this behaviour can be seen as a choice of more inclusive language rather than unnecessary sex-distinguished language agreeing with the behaviours of individuals with higher ISANL-G Chinese scores as they tend to better recognise sexist language and be more willing to use inclusive language (Fan & Lawyer, *in press*). It is also consistent with the finding that individuals with very low sexism levels are likely to purposely engage in nonsexist behaviours (Swim, Mallett, Stangor, 2004). Interestingly, different from the influence of nouns' gender stereotypes, we did not find statistically significant differences in acceptability between female and male references in any of the forms. This suggests the acceptability of representations of

women and men eventually reach symmetry, a symmetry not successfully reached by only looking at the influence of nouns' gender stereotypes.

On the other hand, the higher acceptability of the redundantly gender-marked forms in participants with less egalitarian attitudes seems to be a subtle sexist behaviour which can be expected from Modern sexists and Neosexists. Recall that individuals with higher levels Modern Sexism and Neosexism are likely to support job segregations between women and men and to reject affirmation actions for women to keep the currently balanced role of women and men (Swim et al., 1995, Tougas et al., 1995). Considering that the nouns in our study were generally occupational terms encoded with gender stereotypes, our inference would be that overt markings might be a choice of sexist language for them to reinforce gender stereotypes and solidify status between women and men fulfilling their purpose of maintaining social gender hierarchy (Banaji & Hardin, 1996; Crawford, 2001; Sczesny, Moser, Wood, 2015). Accordingly, this may also explain why participants indicating stronger sexist believes and less supportive attitudes to language inclusivity also showed lower acceptability to the default forms， because the default forms being gender undifferentiated tend to blur the "naturally" different roles of women and men, thus not being able to keep people "in their place" (Douglas and Sutton, 2014).

In addition, although it is not the focus of our study, it is worth mentioning that participants with more supportive attitudes toward gender equality and language inclusivity also showed higher acceptability to the incongruent forms. However, this acceptability still remained below the baseline level of acceptance. Voluntary comments from three participants suggested they interpreted the incongruence between referential sex and the gender marker as ways of representing non-binary genders, because they believed there

must be some reasons to explicitly use a gender maker in this situation. It reflects a trend that young individuals with more egalitarian attitudes in Mainland China tend to have greater awareness of issues related to non-binary genders. This aligns with broader patterns in contemporary Chinese youth discourse, where gender inclusivity is increasingly recognised (Koo, Hui, & Pun, 2020). While our study did not focus on conversational pragmatics, this tendency to view gender markers as functional may be interpreted through the lens of Grice's Cooperative Principle (1975). In particular, the use of seemingly redundant or incongruent gender markers may have been perceived as fulfilling the maxims of Quality and Quantity, that is, conveying relevant and truthful information rather than being random or erroneous additions. From this perspective, participants who accepted redundantly gender-marked forms in our present study may have inferred contextual significance behind the marking and considered the markers necessary to emphasise the violation of referential sex and the gender stereotype associated with the target noun.

4.5.4 Suggestions for future research

Looking at the influences of nouns' gender stereotypes and participants' social beliefs together on the different acceptability of representations of women and men, we propose that the high acceptance of redundantly gender-marked forms among individuals' with less supportive attitudes toward gender equality and language inclusivity can be seen as a process containing first an activation of a noun's gender stereotype, then an agreement that the referential sex is a violation of this stereotype, and finally a justification of this gender marking in order to emphasise this violation. We acknowledge that restricted by the design of the present study, we do not have access to participants' online processing data to further examine whether nouns' gender stereotypes were activated at all among individuals with strong egalitarian attitudes. On one hand, according to Kreiner and

colleagues' preventing strategy (2008), they may not access the gender stereotypes at all because of the kinship terms directly informing them the referential sex, so they were less likely to accept the redundantly gender-marked forms because the markers were considered as referentially and grammatically unnecessary. On the other hand, they may also activate gender stereotypes at first, potentially an early detection of stereotype violation ensued, but strategically controlled whether the stereotype information was necessary in the context guided by their high egalitarian attitudes. Similar strategic control processing of nouns' gender stereotypes were supported by online processing in brain studies (Du & Zhang, 2023a, 2023b), but their manipulations focused on the proportion of reference-noun consistent sentences or the discourse context. Therefore, our knowledge in how individuals' social believes play a role in this processing remains limited. We suggest a replication of our study focusing on individuals' online processing data using ERP method to further understand the processing mechanism behind individuals' perceptions on gender stereotypes of nouns and anomalies of gender markers added to the noun. ERP measures would allow us to detect early neural responses to stereotype violations (e.g. N400 effects) and later stages of strategic control (e.g. P600). This method could clarify whether individuals with high egalitarian beliefs suppress stereotype activation altogether, or whether activation occurs but is subsequently regulated, offering time-sensitive insights that our behavioural design could not capture. In addition, we believe it is of great value to introduce individuals' related social beliefs as a predictor to explore potential individual differences in language processing. Our present study used a combined variable representing participants' general attitudes toward gender equality and language inclusivity. Targeting the specific aspects of sexist beliefs that may have different effects on individuals' perception of linguistic representations is beyond our research scope here. We look forward to future studies using analyses to address this issue.

As for the influences of age on the acceptability of representations of women and men, gender stereotypes and related social beliefs being controlled, the asymmetry that the redundantly female-marked nouns were more accepted than the correspondingly male-marked ones was mainly found in those who born in 1990s, though generally the results between the 80s group and the 90s group were very similar. The finding catching our interest most was how participants born in 2000s showed different judgements from their older cohorts especially on their particularly lower acceptability of Female Default and higher acceptability of both the redundant forms. However, by the time when the data collection was complete for the present study, our access to candidates meeting both the criteria of being born after 2000 and over 18 years old was limited, resulting in a small sample size of 25 participants in the 00s group. We believe any conclusions may be over representative here, but this seems to be a field that warrants further investigation. Particularly, more recent research found that younger individuals may not necessarily show more egalitarian attitudes toward issues related to gender equality due to enlarged gap in women and men's political views (Off, Charron, & Alexander, 2022; Yang, 2023; Burn-Murdoch, 2024), we look forward to future research looking directly at the intercorrelations between generation or age and gender on perceptions of linguistic representations of women and men.

4.6 Conclusion

In conclusion, the present study explored individuals' acceptance of different linguistic representations of women and men in simplified Chinese and the factors influencing acceptability including nouns' gender stereotypes, participants' social beliefs, and their decades of birth. We focused on the different levels of acceptability between grammatically standard default forms (zero-marking) and redundantly gender-marked forms of Chinese

nouns representing occupational terms. Using Cumulative Link Mixed Model, we found that grammatically genderless Chinese nouns can be gender-biased due to the following asymmetries of gender marking: first, overt female marking is generally more accepted than the corresponding male marking; second, only the acceptability of male marking is influenced by nouns' gender stereotypes; finally, the acceptability of default nouns addressing male referents remains constant, while the acceptability of the same nouns addressing female referents is significantly influenced by nouns' gender stereotypes. These different judgements may be guided by individuals' general social beliefs on gender equality and language inclusivity. Those who harbour less egalitarian attitudes are more likely to accept the overt gender marking while accepting the default nouns less. On the other hand, individuals with more supportive social beliefs tend to accept the default nouns more and to accept the overt gender marking less. Finally, age has an impact on judgements with younger participants showing lower acceptance of using neutral nouns for female referents and higher acceptance of redundant gender-marked nouns that address both sexes. However, additional data is needed to further explore this trend.

Chapter 5 - Study 3: A rose by any other name? The impact of gender marking on perception of successful women in counter-stereotypical fields.

5.1 Abstract

Choosing between a default gender-neutral form (e.g. scientist) or a female-marked form (e.g. female scientist) to represent women in stereotypically male-dominated fields is a complex challenge within Chinese context.

This study investigates how exposure to female exemplars represented with either default or female-marked professional terms (e.g., "pilot" vs. "female pilot") in counter-stereotypical fields influences perceptions. A controlled experiment was designed with four conditions, each containing 12 short biographies about woman or man exemplars represented with either gender-neutral or gender-marked nouns. All nouns were related to male-dominated professions such as firefighter, scientist, or pilot. We randomly assigned participants to one condition and measured their recall accuracy, evaluations of exemplars' achievements, and expectations for other women and themselves to assess the advantages and potential drawbacks of default versus female-marked representations. Additionally, three key factors were measured: participants' sex, gender beliefs, and personal acquaintance with successful women.

Using binomial logistic regression, the study found that female-marked nouns significantly increased the visibility of women, as participants recalled the number of women more accurately than with gender-neutral representations. This finding aligns with prior research

showing that stereotypically associated nouns can undermine the intended neutrality of so-called gender-neutral forms (Gabriel, Gygax, & Kuhn, 2018).

Further analysis using multiple linear regression revealed distinct trends in evaluations and expectations under the influence of default or female-marked representations of women. Male participants were less likely to recognise women's achievements when represented with default nouns, suggesting a subtle bias against gender-neutral forms, likely due to their disruption of traditional social hierarchies. In contrast, female-marked exemplars fostered higher expectations for other women's success for both female and male participants, while combining short-term exposure (e.g. biographies in the experiment) with long-term exposure (e.g. acquaintance with successful women) resulted in consistently high expectations regardless of representations. However, representing women with default nouns occasionally led to a self-deflating effect for both female and male participants, particularly among highly egalitarian participants. This phenomenon likely reflects a heightened awareness of systemic barriers faced by women rather than a backlash against counter-stereotypical representations.

5.2 Introduction

妇女能顶半边天! ‘Women hold up half the sky!’ Exactly sixty years ago, the People’s Daily used this phrase, an extract from a Hunan folk song popularised by Chairman Mao, as the title for article emphasising the importance of women’s participation in production and socialist construction (1964, cited by Wang, 2023). As Chinese society progresses, an increasing number of women have entered traditionally and stereotypically male-dominated professional fields such as politics, military, and STEM sections, with many achieving remarkable success. However, the overall representation of women in these fields remains significantly lower than that of men (National Bureau of Statistics of China, 2022). For example, women represent only 26.5% of the 14th National People’s Congress, China’s national legislature (the 13th NPC, 2023). There is still a long way to go before women truly hold up half the sky in China.

When promoting successful women in counter-stereotypical fields, the semantic female-marker 女 ‘woman/female’ is additionally used to emphasise they are women alongside the protagonist’s photo, name, and sometimes the female-specific pronoun 她 ‘she’. This occurs despite Chinese (written: simplified Chinese; spoken: Mandarin) being a grammatically genderless language where most nouns do not require gender markers grammatically and referentially (for an overview of grammatical features of languages and gender marking, see Stahlberg et al., 2007). For example, our analysis of the WeChat Official Account 央视新闻 ‘CCTV News’ (ID: cctvnewscentre) owned by China Media Group from 2019 to 2024 revealed that while the default gender-neutral noun 科学家 ‘scientist’ could refer to either a woman or a man, all four articles using this term featured male protagonists. Notably, of the five articles mentioning 女科学家 ‘female scientist’, using

the female-marked noun, only in one instance was the female marker semantically necessary as in 中国首位…大洋深潜的女科学家 ‘China’s first female scientist to undertake deep-sea exploration in …’ (cctvnewscentre, 2023). In contrast, the mention of the corresponding male-marked noun 男科学家 ‘male scientist’ was zero.

We believe the intention behind CCTV News’ using additional female marker such as 女科学家 ‘female scientist’ is to emphasise women’s achievements in the counter-stereotypical fields and potentially encourage the other women. However, while the communicative goal may be positive, the actual effects of such representation are likely to be influenced by various factors. This paper focuses on two main aspects: exploring the influences of the content itself from a social psychological perspective, and examining the potential influences of the female-marked representation choice from a linguistic perspective. Overall, research in these two domains has not been well integrated as different forms of linguistic representation of women are not considered as variables in studies on counter-stereotypical woman exemplars. Therefore, this study investigates the effects on individuals’ perceptions, considering both the role of exposure to counter-stereotypical woman exemplars and the role of different representations of women (default gender-neutral form vs. female-marked form) in this context.

5.3 Literature review

5.3.1 Effects of exposure to counter-stereotypical woman exemplars

Dasgupta and Asagri (2004) found both immediate exposure (priming) and long-term personal contact with woman exemplars in related fields facilitated women's automatic association between women and agentic traits such as competence and leadership, which are stereotypically ascribed more to men. Participants exposed to the photos and brief descriptions of 16 famous woman exemplars in counter-stereotypical leadership positions such as judges, business leaders, and scientists, were faster in matching women with leadership roles than with supportive roles in the Implicit Association Task. This contrasted with the control group, who were exposed to descriptions of flowers and matched women with supportive roles faster than with leadership roles. Their further field research found exposure to female leaders in women's everyday life, even having a female course instructor in male-dominated fields such as science and math can mediate automatic gender stereotyping. The researchers concluded this benefit of exposure as 'seeing is believing' (Dasgupta & Asgari, 2004, pp. 642).

However, this exposure to woman exemplars may cause backlashes. Rudman and Phelan (2010) found participants (all women) primed with both women and men in counter-stereotypical roles (e.g. a female surgeon and a male nurse) showed decreased implicit association between leader and themselves and lower enthusiasm for stereotypically male professions, compared to the control group exposed only to animal descriptions. They interpreted this somewhat surprising effect as an upward social comparison threat leading to contrast between the woman exemplars and the women exposed to these exemplars rather than the intended assimilation effects (Dijksterhuis et al., 1998). A similar negative effect was observed in women's self-ratings of competence especially when the woman

exemplars' achievements in a male-dominated context were perceived as unattainable, an effect not observed in men under the same condition (Parks-Stamm, Heilman & Hearn, 2008). Therefore, corresponding to 'seeing is believing' (Dasgupta & Asgari, 2004), Rudman and Phelan (2010, pp. 199) described the contrast effect on women as "'seeing is not always believing' in *oneself".* However, they also suggested that as increasing women establish themselves in stereotypically male-dominated fields, this pattern should change overtime.

In addition, Hoyt and Simon (2011) found exposure to extremely counter-stereotypical woman exemplars (e.g. Connie Chung[54]) can cause stronger self-deflating effect in women than exposure to highly successful man exemplars in similar fields (e.g. Bryant Gumbel[55]). In their following study, women exposed to middle-level woman exemplars with whom they can identify with showed greater aspirations for leadership roles compared to those exposed to high-level woman exemplars. Notably, their aspirations were not significantly different from the women exposed to high-level man exemplars. In addition, exposure to middle-level woman exemplars was associated with a higher number of using counter-stereotypical pronouns (e.g. referring to a pilot as "she" or a nurse as "he" when the subject's name is gender-unspecific) compared to exposure to high-level woman and man exemplars respectively.

Furthermore, woman exemplars in counter-stereotypical fields may encounter negative reactions from evaluators because these women were considered as violations of the prescriptive social norms of gender (Fiske, 1998, p. 378). According to Eagly and Karau's

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[54] Connie Chung is a trailblazing journalist, the first Asian and second woman to anchor a major U.S. network newscast.

[55] Bryant Gumbel, an acclaimed journalist and TV host, gained prominence as the first Black anchor of *The Today Show* in the U.S., where he co-hosted for 15 years.

(2002) Role Incongruity Theory, the prescriptive norms of women are more closely related to communal traits such as warm and supportive. When certain women were in positions requiring agentic traits such as competent and assertive which are ascribed more to men, the incongruity between the women's agentic traits and the expected norms of women can lead to lower evaluations of these women. Such backlashes, including criticism and negative responses toward those who defy gender norms, serve to discourage norm-challenging behaviour and preserve existing cultural stereotypes (Rudman and Fairchild, 2004). However, men may have additional motives compared to women. Burgess and Borgida (1999) pointed out negative reactions to violations of prescriptive norms support the reinforcement of power imbalances in the social hierarchy. Accordingly, men, who hold dominant positions in the current hierarchy, are more likely to "sanction" women for violating prescriptive norms than women are.

5.3.2 Effects of different linguistic representations of women

To the best of our knowledge, social psychological studies on exposure to counter-stereotypical women exemplars were conducted mainly in English-speaking context representing the exemplars with zero-marking English professional terms (e.g. Dasgupta & Asagri, 2004; Asgari, Dasgupta, & Stout, 2012). However, in the actual use of language, as the 'scientist' example in Chinese showed, women tend to be emphasised by an extra female-marker in male-dominated fields. This is essentially a question on different linguistic representations of women and men and how the differences may potentially influence individuals' perceptions. An issue which was usually not considered as a potential variable in the social psychological studies discussed earlier in 2.1. Consistent evidence showed that manipulations of linguistic representations of women and men can strongly influence recipients' cognitive inclusion of woman exemplars. Mainly two practical

strategies were explored in making women more visible in the discourse and more represented in mind: feminisation (i.e. explicitly and symmetrically referring to women and men in word pairs) and neutralisation (i.e. eliminating gender distinctions by promoting unmarked nouns and pronouns) (see Sczesny, Formanowicz & Moser 2016 for an overview of gender-fair language).

5.3.2.1 The feminisation strategy

In grammatically gendered languages in which the masculine form of nouns is also used for generic reference (e.g. German: politicker ‘politician’), women’s visibility in social roles can be significantly increased by using masculine and feminine word pairs (e.g. German: politikerinnen und politicker ‘female and male politician’), especially where women are significantly underrepresented compared to men. This is a typical practice of the feminisation strategy. Compared to the masculine generic form, masculine and feminine word pairs were found to significantly increase the estimated proportion of women in a stereotypically male profession - geophysicists, an effect particularly observed in female participants (German: Braun et al., 1998, cited in Braun, Sczesny, and Stanlberg, 2005) as well as in professions with different gender stereotypes (Austrian German and Italian: Horvath et al., 2016). Word pairs were also found to elicit increased number of recommendation of female politicians - a positive effect on the mental representation of women as suitable for such positions. This result, however, appeared to be influenced by additional factors, particularly the availability of prominent female political exemplars in reality at that time (study 3 in Stahlberg, Sczesny, & Braun, 2001). Furthermore, Vervecken and colleagues (2013, 2015) found using both masculine and feminine forms of professional terms in German and French not only reduced gender stereotypes of professions, but also increased adolescents’ career aspirations in male-dominated professions among both sexes.

When gender information is important, feminisation can also be practiced in languages lacking grammatical gender-marking such as English, Turkish, and Chinese by adding lexical gender-markers to the default nouns. For example, the United Nations' Guidelines for gender-inclusive language suggested to make gender visible only when widespread beliefs or biases may conceal the presence or action of either gender. An example of this in Chinese is adding both the female-marker 女 'woman/female' and the male-marker 男 'man/male' to the default noun 童 'child', emphasising 无论女童和男童 'whether girls or boys' rather than simply using 每个儿童 'every child' when discussing educational opportunities in China. Explicitly mentioning both girls and boys helps ensures that girls are not overlooked, addressing the boy-bias that may be concealed in the gender-neutral term 'child'. Reflecting on the example of "female scientist" in Chinese, especially when introducing a woman exemplar in a male-dominated context in a news headline without other gender cues, readers may not automatically expect this exemplar to be a woman, causing reduced visibility of women in counter-stereotypical fields. Therefore, explicitly pointing out a woman's identity in such situation concurs with the purpose of the feminisation strategy.

However, a closer scrutiny between the practice of the feminisation strategy and the example of 'female scientist' reveals a discrepancy. Had it truly be a feminisation practice, only adding the explicit gender-marker to a female referent is not enough, because lexical gender markers should be added symmetrically to both female and male referents. In this sense, when a specific man is introduced as a scientist in the news, he should have been referred to as 'a male scientist' rather than the default, unmarked term 'scientist'. More examples of asymmetrical gender-marking in Chinese can be found in the corpus-based

study in which female-marked terms such as 女战士 ‘female fighter (soldier)’ (23), 女作家 ‘female writer’ (13), 女科学家 ‘female scientist’ (9) were frequently found, while male-marked terms were scarce: 男教授 ‘male professor’ (0), 男作家 ‘male writer’ (1) (Xu, 2018). This practice may immediately increase the salience of women in male-dominated fields, but using gender markers asymmetrically poses significant risks of devaluing women. Certain female-marked nouns in Chinese have already been tainted by negative connotations not aligning with the reality such 女博士 ‘female doctor’ indicating nerdy unattractive characteristics (Peng et al., 2021) and 女司机 ‘female driver’ indicating bad driving skills (Li & Luo, 2020). Most importantly, an additional female-specific marker indicates that even when women transcend the culturally defined boundaries of sex roles, they still not truly enter the semantic space traditionally created and occupied by men (Stanley, 1977). Consequently, gender stereotypes are more likely to be reinforced according to the current social hierarchy than being challenged.

Even when free of negative connotations, feminised nouns can subtly put women in disadvantage positions. Horvath and colleagues (2016) found using both masculine and feminine forms may polarise male-female differences in salary and status, with typical female professions rated lower in these aspects compared to typical male professions. Even when gender stereotype was controlled by a fictitious job title, female candidates described with feminised form of the title was devalued by less favourable evaluations compared to either a male candidate or a female candidate with masculine form of the title (Formanowicz, et al., 2013, Budziszewska, Hansen, Bilewicz, 2014). Moreover, Formanowicz and colleagues measured participants’ levels of Neosexism (Tougas et al., 1995) and support for feminism, combining them into a single variable indicating general

gender beliefs using Principal Component Analysis. Interestingly, they found the lower evaluations of candidates entitled with feminised form compared to masculine form was significantly related to participants with more conservative attitudes. In addition, a gender gap was found in Budziszewska and colleagues' study. While both women and men rated the female candidate with the feminine job title as less competent than with the masculine title, men also perceived her as less warm. Moreover, different from women, men's negative evaluations of the candidate with the feminine title led to a lower willingness to hire her, which the researchers interpreted as sexist intentions (Budziszewska, Hansen, Bilewicz, 2014). This finding aligns with hostile sexism - men's reactions to career women contain consistently negative stereotyping, which result in discriminatory behaviours rooted in resentment towards successful women (Glick & Fiske, 2001). In conclusion, the feminisation strategy increase the visibility of women by clearly pointing out gender through grammatical or lexical marking. However, the feminised form may bring negative connotations and less favourable evaluations on women and eventually increase the risk of reinforcing gender stereotype.

5.3.2.2 The neutralisation strategy

Compared to feminisation, the neutralisation strategy seems the ultimate inclusive choice in the long term as this strategy try to avoid the unnecessary activation of gender associations caused by grammatically or lexically gendered terms. Therefore, neutralisation not only promotes a more inclusive representation of both women and men, but also transcends the limitations of binary representations to treat gender as a continuum (Gabriel, Gygax, & Kuhn, 2018). This strategy is particularly suitable to languages such as English and Chinese because the absence of grammatical gender-marking in most nouns naturally facilitates the avoidance of gendered language when it is

unnecessary or irrelevant for communication (Sczesny, Formanowicz & Moser 2016). In the context of increasing the mental inclusion of women in leadership, Archer and Kam (2022) examined the perceptional differences when using the neutral term ‘chair’ compared to the male generic term ‘chairman’. They found ‘chairman’ elicited more frequent use of ‘he’ over ‘she’ and ‘they’ in descriptions of a figure’s morning routine in the context of business, politics, or academia, assuming the figure with a gender-neutral surname as a man. In the following task, when participants read passages with either 'chair' or 'chairman' and names ‘John’ or ‘Joan’, ‘chairman’ increased the recall accuracy for male figures and decreased it for female figures after several distracting questions. No gender differences among the participants were found in this study.

However, does using a unified neutral form of nouns to refer to both women and men ensure that people associated these nouns equally with both genders? The answer may not be straightforward as grammatical neutrality does not necessarily ensure semantic neutrality. Norming studies showed that individuals even associated nouns without any grammatical gender-marking with different sexes based on social-cultural norms of women and men (e.g. Kennison & Trofe, 2003; Gabriel et al., 2008). For instance, in English, beauticians, babysitters, and florists were more associated with women, while janitors, mechanics, and miners were more associated with men (Misersky et al, 2014). In our previous study on gender-biases of Chinese nouns, we found 护士 ‘nurse’, 秘书 ‘secretary’, and 乘务员 ‘attendant’ were rated as more female-biased professions while 保安 ‘security guard’, 消防员 ‘fire fighter’ and 程序员 ‘programmer’ were rated as more male-biased ones (See Chapter 4 of this thesis). This encoded gender stereotype of nouns would be a potential problem when practicing the neutralisation strategy.

Having compared individuals' mental representation of gender in nouns of English, French, and German, Gygax and colleagues (2008) found while grammatical gender overrode stereotypical gender in the mental representation of French and German nouns, when grammatical gender-marking were missing, as in the case of English nouns, the inference of a role's gender in the discourse (e.g. "spies" inferred more as men, "social workers" inferred more as women) was more likely to be made based on the gender stereotype of nouns than open to both women and men. Only when the noun indicated no obvious gender biases (e.g. singers) did the inferences of the role being female or male reach a balance. Further studies on Norwegian, in which the nouns were once grammatically differentiated by masculine and feminine forms, further shed light on whether the neutralisation strategy would indeed facilitate a more balanced association of women and men (Gabriel & Gygax, 2008; Gabriel et al. 2017). After decades of gender-neutralisation language policy, the masculine form of nouns in Norwegian was gradually treated as a gender-neutral class while the feminine form almost disappeared completely (Beller et al., 2015). At present, when gender information is important in the context, lexical gender-markers can be added to the previous masculine form of nouns. Therefore, "male politicians" would be referred to as "mannlige politikere" (rather than the previous masculine generic "politikere") and "female politicians" as "kvinnelige politikere" (Gabriel, Gygax, & Kuhn, 2018). This neutralisation of Norwegian seems reduce gender biases visually by representing women and men in a more symmetrical way. However, individuals' mental representations of the once masculine now neutral nouns were found to be biased by the gender-stereotypes similar to what was found in the case of English (Gygax et al., 2008). Therefore, the researchers concluded that gender-neutral form of nouns do help create less biased representations and reduce gender boundaries when no other gender cues are present. However, if stereotypical expectations of the nouns are strong,

neutralisation can backfire and lead to biased representations based on gender-stereotypes, thus undermining the original goal of gender-neutrality (Gabriel, Gygax, & Kuhn, 2018).

5.4 The current study

The literature reviews in section 5.3 highlights the complexity of choosing between a default gender-neutral form (e.g. scientist) or a female-marked form (e.g. female scientist) to represent women in stereotypically male-dominated fields. The female-marked form, adopting a feminisation strategy, can immediately signal the exemplar is female, but risks reinforcing gender stereotypes. Conversely, the neutral form, while desirable as an ultimate approach, may currently reduce the visibility of women in roles and professions where significant gender bias persists.

Therefore, the primary aim of this study is to compare how exposure to woman exemplars represented with either gender-neutral (default, unmarked) or female-marked professional terms in counter-stereotypical fields affects individuals' perceptions. We designed a controlled experiment with four conditions (See Table 5.1 for examples based on the noun 警察 ‘police officer’):

Condition 1. woman exemplars represented with gender-neutral nouns;
Condition 2. woman exemplars represented with female-marked nouns;
Condition 3. man exemplars with gender-neutral nouns;
Condition 4. man exemplars with male-marked nouns.

The two conditions involving woman exemplars serve as the experimental conditions, while the two involving man exemplars serve as control conditions. Details of the experimental design and measures are provided in Section 5.5 Methodology.

Table 5.1: Example of representations in the experiment based on the noun 警察 'police officer'.

Condition of exposure	Exemplars' sex indicated by name	Form of representation	Examples
Condition 1	female	default	郭琳，警察，任职于国家级反恐部队猎鹰突击队… [Guo Lin is a police officer serving in the National Anti-Terrorism Falcon Commando…]
Condition 2	female	female-marked	郭琳，女警察，任职于国家级反恐部队猎鹰突击队… [Guo Lin is a female police officer serving in the National Anti-Terrorism Falcon Commando…]
Condition 3	male	default	郭明，警察，任职于国家级反恐部队猎鹰突击队… [Guo Ming is a police officer serving in the National Anti-Terrorism Falcon Commando…]
Condition 4	male	male-marked	郭明，男警察，任职于国家级反恐部队猎鹰突击队… [Guo Ming is a male police officer serving in the National Anti-Terrorism Falcon Commando…]

In terms of the effects of gender-neutral default and female-marked nouns on perceptions, we focus on four aspects: visibility of women, perceptions of exemplars' achievement, expectations of other women, and participants' self expectations.

First, we examined the effects of gender-neutral default and female-marked nouns on increasing women's visibility in stereotypically male-dominated fields. Given the male-biased nature of these professions, our hypothesis is that individuals exposed to female-marked form will more accurately recall the number of woman exemplars compared to those exposed to gender-neutral nouns. This is because the explicit and unambiguous female-marker is more likely to emphasise that the exemplars are female.

Second, we explored how these two representations influence perceptions of the exemplars' general achievements. Specifically, we aimed to determine which

representation, gender-neutral or female-marked, is associated with higher evaluations of achievement for the exemplars.

Third, we compared how these two representation affect expectations for other women achieving similar success to the exemplars. We aim to identify which representation fosters greater optimism for other women in professional development.

Finally, we investigated the impact of these representations on individuals' self-expectations of achieving similar success. We aim to identify which representation promotes higher self-confidence.

We did not formulate explicit hypotheses about the impacts of these representations on perceptions of achievement, as it remains unclear, particularly in the Chinese context, which representation might mitigate or exacerbate potential backlashes related to portraying successful women in male-dominated fields such as provoking upward social comparison (Rudman & Phelan, 2010) or negative responses against women challenging traditional androcentric hierarchies (Rudman & Fairchild, 2004). This outcome is likely to be influenced by multiple factors. Based on previous literature and our earlier research (Study 2 in Chapter 4), we identified three critical predictors that will be examined alongside the forms of representation: individuals' sex, gender beliefs, and personal exposure to successful women.

As discussed in section 5.3, women's personal contact with counter-stereotypical female roles in everyday situations could mediate their gender stereotyping behaviours (Dasgupta & Asgari, 2004). In addition, mid-level woman exemplars that women can identify with

reduced the self-deflating effect brought by the exposure to highly successful women in counter-stereotypical fields (Hoyt & Simon, 2011). In the current study, it is beyond our research scope to conduct a longitudinal study or manipulate the success levels of the woman exemplars. However, it is valuable to collect participants' self-reported personal acquaintance with successful women to explore the potential influence of this factor on individuals' perceptions of achievement.

Most studies exploring the effects of exposure to counter-stereotypical woman exemplars focused on the effects on female participants (e.g. Rudman & Phelan, 2010; Hoyt & Simon, 2011). In the few studies examining the effects on both women and men, we found two potential sex differences. First, only women were found to self-deflate themselves under the 'upward comparison threat' of the woman exemplars (Parks-Stamm, Heilman & Hearn, 2008). Second, compared to women, men may show stronger negative attitudes (Rudman and Fairchild, 2004) and conduct actual negative behaviours (Budziszewska, Hansen, Bilewicz, 2014) against women who violated the prescriptive social norms. In addition, as for more inclusive representation choice of women, women were generally found to be more supportive to gender-inclusive language than men (e.g. Fan & Lawyer, 2024; Douglas & Sutton, 2014; Park & Roberton, 2004). Furthermore, the combined effects of exposure to counter-stereotypical women and the choice of linguistic representation of these exemplars on both women and men remain unexplored. Therefore, introducing sex as a predictor in our study provides more empirical evidence for future comparisons on the potentially different effects on women and men.

One important motivation behind the potential different behaviours of women and men may lie in individuals' differences in social beliefs of gender equality. As discussed in

section 5.3, negative judgements against woman exemplars in counter-stereotypical fields, i.e. figures challenging the traditional social hierarchy, may be caused by the motive of maintaining the status quo of androcentrism (Burgess & Borgida, 1999; Rudman and Fairchild, 2004). This is consistent with behaviours observed from individuals harbouring Neosexism and Modern Sexism. Neosexists value the traditional roles of women and men and they fear their collective interests would be undermined by violations of the status quo (Tougas et al., 1995). Modern Sexists believe occupational gender segregation is 'natural' as this difference is biologically defined rather than a result of socialisation and discrimination. Modern sexists also tend to overestimate the proportion of women working in counter-stereotypical professions (Swim et al., 1995). From the perspective of linguistic behaviours, Neosexists and Modern Sexists were consistently found to show less positive attitudes toward gender-inclusive language (e.g. English: Park & Robertson, 2004; Chinese: Fan & Lawyer, 2024), and may deliberately use more androcentric language to reinforce and perpetuate gender stereotypes, thus the current social hierarchy can be maintained by keeping people 'in their place' (Fan & Lawyer, 2024; Sczesny, Moser, & Wood, 2015; Douglas & Sutton, 2014).

Study 2 of this PhD project explored how individuals accepted female-marked nouns compared to default nouns when the female-marker was grammatically, semantically and referentially unnecessary in the discourse (e.g. 陈某某的侄女是个女护士 'Chen's niece is a female nurse' vs. 陈某某的侄女是个护士 'Chen's niece is a nurse') and found more egalitarian attitudes were related to lower acceptance of the female-marked form. In the context of the current study, as shown in examples of Condition 1 and 2 in Table 5.1, the female-marker somewhat serves a referential function in emphasising that the referent is female because: 1) even though the referent's name is stereotypically feminine, it does not

provide unequivocal cues about the exemplar's sex, as Chinese names show meanings but do not definitely show a person's sex, and 2) the referent's profession is typically male-dominated. In this sense, it is worth examining how gender beliefs may influence individuals' perception of women represented by the default gender-neutral form and the female-marked form. In Formanowicz et al (2013), their target language was Polish - a typical grammatically gendered language. Therefore using a feminised term instead of the traditional masculine generic term to represent woman here can be seen as an action of challenging the status quo. This is consistent with their findings that individuals with higher Neosexism levels and lower support for feminism showed lower evaluations to women with feminised professional terms. In the current study, our target language is Chinese, a grammatically genderless language, in which most professional terms are gender-neutral without grammatical and semantic gender-marking. Thus, using female-marked form specifically for women rather than employing the default gender-neutral form equally to both women and men in certain male-dominated professions indicates that women have not truly entered the semantic space of these terms originally occupied by men (Stanley, 1977). Therefore, our hypothesis is that individuals with higher sexism levels may show more negative evaluations of woman exemplars when they are represented by default gender-neutral professional terms.

In summary, this study explores the representations of women in counter-stereotypical fields by analysing the differing effects of the gender-neutral and female-marked form. It also examines how factors of participants including their personal acquaintance with successful women, sex, and gender beliefs interact with these representation forms to influence perceptions.

5.5 Methodology

5.5.1 Participants

Our data was collected via Gorilla with the whole experiment designed and conducted via Gorilla Experimental Builder (Anwyl-Irvine, Massonnié, et al., 2019, Anwyl-Irvine, Dalmaijer, et al., 2020). Candidates were recruited by word of mouth and social media in Mainland China based on the following criteria: they should be born after 1979 (i.e. after China's reform and opening-up) in Mainland China; should have received 12 years of general education in Mainland China; and should confirm they communicate in Mandarin/ simplified Chinese everyday. Although the experiment took place online, all candidates were required to contact us directly to enrol the study. We checked every candidate's ID to ensure that their place of birth and age met our criteria of participants. Participants were required to join the experiment by clicking the link through a computer, while access through smartphones or tablets was blocked. This restriction was important to ensure that participants could sit in a quiet place, focus on reading the materials in our experiment, and complete the tasks and questions without distractions associated with smaller devices such as messages and calls. We collected data from 167 participants in which 134 of them fully completed the experiment. Therefore, data of these 134 participants (69 women, 65 men) were used for the analysis of the present study. We also offered an optional multiple choice of genders besides of the choice of sex in which 2 of the participants chose non-binary and 11 did not give a response. Participant's age ranged from 18 to to 43 years old (Mean = 26.71, Median = 25.50). Most participants (92.5%) reported having obtained at least a bachelor's degree

5.5.2 Design of the exposure task

5.5.2.1 Reading materials of the exposure task

We edited 12 short passages based on 12 woman exemplars' true stories working in the selected nine counter-stereotypical fields, each containing the exemplars' biographical information with one of their outstanding achievement (See Table 5.2 for an example of 消防员 'fire fighter'; See the full 12 passages and the exemplars true identity in Appendix). Since one of our manipulations was the exemplars' names indicating them being a woman or a man, we kept the exemplars original surnames, but created typical female and male last names according to 2021 National Name Report (Ministry of Public Security, PRC, 2022). Finally, we adapted the passages into similar length (around 95 Chinese characters) and no information such as pronouns other than the exemplars' fictitious names and the gender markers in specific conditions can reveal the sex of the exemplars.

Table 5.2: Example of the reading materials and manipulations used in the study.

Condition	WomenDefault	WomenMarked	MenDefault	MenMarked
Sex of exemplar	Female indicated by a female name		Male indicated by a male name	
Name of exemplar	彭娟 [Peng, Juan]	彭娟 [Peng, Juan]	彭杰 [Peng, Jie]	彭杰 [Peng, Jie]
Professional term	消防员 [fire fighter]	女消防员 [female fire fighter]	消防员 [fire fighter]	男消防员 [male fire fighter]
Form of representation	Default	Marked by 女 [female]	Default	Marked by 男 [male]
Example of the passage	彭娟/彭杰，（女/男）消防员，任职于湘潭市吉安路消防特勤站。能训练、能出警、能指挥，长期活跃在第一线从事灭火和救援工作。无论酷暑寒冬，只要警铃响起，45秒内必定穿戴完毕10多件、总重量超过30斤的消防战斗装备乘车出发。 [Peng Juan/Peng Jie, a (female/male) firefighter, serves at the Ji'an Road Firefighting and Rescue Station in Xiangtan City. (She/He) is capable of training, dispatching, and commanding, and has been active in the front line of firefighting and rescue work for a long time. Regardless of the scorching heat or bitter cold, as long as the alarm rings, (she/he) can dress in over ten pieces of firefighting gear weighing more than 30 kilograms within 45 seconds, and depart by vehicle.]			

5.5.2.2 Selection of nouns presenting stereotypically male professions

Since our present study focuses on successful women in counter-stereotypical fields, the nouns used in the reading materials were stereotypically male-dominated professions. The nouns were selected based on our previous norming study on noun's gender stereotypes taking into account the rated acceptability of the nouns' redundantly marked forms (Fan & Lawyer, in prep). Therefore, nine nouns were selected because 1) they were rated highly as male-dominated professions; 2) the rated acceptability of their female-marked forms was higher than the corresponding male-marked forms (e.g. 女科学家 'female scientist' was rated as more acceptable as 男科学家 'male scientist'). These nouns were: 消防员 'fire fighter', 科学家 'scientist', 外卖骑手 'takeaway rider', 飞行员 'pilot', 老板 'boss', 警察 'police officer', 研究员 'researcher', 院士 'academician', and 程序员 'programmer'.

5.5.2.3 Manipulation of conditions

The critical manipulations in the reading materials were the exemplar's name indicating whether the exemplar was a woman or a man, and whether there was a gender marker (女 'woman/female' or 男 'man/male') attached to the nouns (professional terms) emphasising the exemplars' sex (see Table 5.2 for the details of the manipulation using 消防员 'fire fighter' as an example). Therefore, there were four conditions in the experiment: WomenDefault, WomenMarked, MenDefault, and MenMarked. We treat MaleDefault as the control condition because passages in this condition mirrored the most frequent situation in the real world with men represented by default nouns especially in stereotypically male-dominated fields. We also included an additional condition - MenMarked - for reference, given that the use of male-marked terms in this context is relatively rare.

5.5.3 Measure of perceptions of achievement

According to Dasgupta and Asgari (2004), three questions with an 11-point Likert Scale were used to measure the perceived general achievements of the exemplars across condition (from “-5 - not successful at all” to “5 - very highly successful”), the expected achievements of other women achieving similar success as the exemplars (from “-5 - least likely” to “5 - very highly likely”), and the expected achievements of the participants’ themselves achieving similar success as the exemplars (from “-5 - least likely” to “5 - very highly likely”).

5.5.4 Measure of personal access to successful person

Participants were asked whether they personally knew anyone in person who had similar level of achievements to the exemplars in their assigned reading condition. If so, they were further asked to specify the sex of this person.

5.5.5 Measure of gender beliefs

Participants’ gender beliefs were measured by a Chinese adapted version (as used in Fan & Lawyer, 2024) of the Modern Sexism Scale (MSS, Swim et al., 1995) and the Neosexism scale (NS, Tougas et al., 1995). We combined the items to create one variable measuring participants’ attitudes toward gender equality from three perspectives: the acknowledgement or denial of continued discrimination, the empathy or hostility to women’s deserved economic and political demands, and the support or opposition to affirmative actions for women in workforce. To capture participants’ subtle differences in gender beliefs, we asked participants to show their attitude toward each item in the MSS and the NS on a 11-point Likert scale from “-5 - not agree at all”, “0 - undecided”, to “5 - totally agree”. The responses were then scored from 0 to 10 corresponding to the 11 points for analysis convenience. We reversed the scores so that higher sum of the scales

reflected more egalitarian attitudes, while lower sum indicated stronger explicit sexism levels.

5.5.6 Measure of visibility of women

Participants were asked to recall the total number of female and male exemplars in their assigned reading condition. We reminded the participants that the number of either the female or the male exemplars could range from 0 to 12, with the total always equaling 12. Then, the participants were asked to fill in the blank respectively how many women and men they remembered to read in the materials about exemplars. The accuracy in this task was recorded as “1 - correct” or “0 - incorrect”. Participants were assigned a score of '1' only if they correctly identified that all exemplars were either women or men, without any errors. For the WomenDefault and WomenMarked conditions, the correct answer was 12 women and 0 men. For the MenDefault and MenMarked conditions, the correct answer was 0 women and 12 men.

5.5.7 Procedure

Upon completion of the demographic questionnaire, participants were given a brief and clear instruction before proceed to the page of the main experiment. They were encouraged to 1) read through all the passages; 2) pay particular attention to the exemplars names and professions; 3) try to visualise each exemplar while reading their biographic passage. Participants were then randomly assigned to one of the four conditions in the experiment (See Table 5.3 for the distribution of participants across condition). Each participant was exposed to only a single condition - either WomenDefault, WomenMarked, MenDefault, or MenMarked - and was unaware of the existence of other conditions in this experiment.

Table 5.3: Distribution of participants across condition and sex.

Sex	WomenDefault	WomenMarked	MenDefault	MenMarked	Total
Female	17	16	17	19	69
Male	19	15	16	15	65
Total	36	31	33	34	134

The exposure task consisted of three pages, each containing four passages about the exemplars. After each page, participants answered four matching questions to check whether they had paid attention while reading the passages. Each question asked them to match a name with the correct profession mentioned in the previous text. For example, if a passage stated “Peng Juan, a firefighter, serves at the Ji'an Road Firefighting and Rescue Station in Xiangtan City…”, participants would need to choose the correct profession of “Peng Juan” from the options “firefighter” (correct) and “police officer” (incorrect). The form of nouns used in this task matched those in the passages in each condition to ensure the consistent exposure of nouns in different forms across condition. For example, in FemaleDefault, if participants read 消防员 ‘fire fighter’ in the passages, the matching question would use 消防员 ‘fire fighter’ (correct) and 警察 ‘police officer’ (incorrect). In FemaleMarked, if the participants read 女消防员 ‘female fire fighter’, then the matching question would use 女消防员 ‘female fire fighter’ (correct) and 女警察 ‘female police officer’ (incorrect). Participants could only proceed to the next page after selecting all the correct answer. These matching questions ensured participants’ attention to the reading materials (Dasgupta & Asgari, 2004; Rudman & Phelan, 2010) and reinforced the association between names and the related forms of noun according to the condition.

Once participants completed the exposure task, they proceeded to a page encouraging them to stop for a minute to recall all the exemplars they had read about, especially those who inspired them most. Following this refection, participants continued to a short questionnaire assessing on their perception of achievement and their personal access to successful individuals. An Implicit Association Task followed, but the results are not reported in this study as our focus of this paper is on potential differences in explicit attitudes influenced by the manipulations.

The questionnaire on gender beliefs was designed to appear after the main experiment to avoid prematurely revealing the feminist perspective of the study. The order of the items in this section were randomised for each participant. Finally, participants were asked to recall and report the number of women and men in their assigned reading condition.

5.6 Findings

5.6.1 Descriptive data

5.6.1.1 Participants' gender beliefs by sex and age

As shown in Table 5.4, female participants scored higher than male participants in gender beliefs, indicating more egalitarian gender beliefs among females in our study.

Table 5.4: The means and standard deviations of participants' gender beliefs measured by the Modern Sexism Scale and the Neosexism Scale (GenSum, with a possible range from 0 to 180)

GenSum	**Female** (n = 69)	**Male** (n = 65)	**Total** (n = 134)
Data Range	65 - 180	63 - 174	63 - 180
Mean (SD)	152 (21.4)	110 (24.0)	132 (30.8)

Furthermore, as illustrated in Graph 5.1, we observed that age influenced gender beliefs in opposing ways for female and male participants. While females' generally exhibited high scores in gender beliefs, older females displayed less egalitarian attitudes than compared to the younger ones. In contrast, older males demonstrated more egalitarian attitudes than younger males.

Given the observed relationships between participants' sex, gender beliefs, and age, we included these variables as potential interactions when fitting regression models to examine the effects of representations on perceptions.

Graph 5.1: Scatter plots illustrating relationships between Age and Gender beliefs (GenSum) on female and male participants

5.6.1.2 Participant distribution by condition, sex and education level

As shown in Table 5.5, most participants in this study held undergraduate degrees, with an overall even distribution of females and males across conditions. Among participants with no academic degree or a master's degree, females were less evenly distributed across conditions compared to males. For participants with PhDs, female were more evenly distributed across conditions, while male were concentrated in the WomenDefault condition. We accounted for the uneven distribution of participants' education levels between females and males across conditions when fitting regression models to examine the effects of representations on perceptions.

Table 5.5: Distribution of participants by condition, sex and education level.

Sex of participants	Education	Women Default	Women Marked	Men Default	Men Marked	Total
Female n = 69	no degree	1	0	1	2	4
	undergraduate	14	13	10	10	47
	master	1	1	5	5	12
	PhD	1	2	1	2	6
Male n = 65	no degree	1	1	2	2	6
	undergraduate	12	9	10	10	41
	master	3	5	4	3	15
	PhD	3	0	0	0	3

5.6.1.3 Personal access to successful person by condition and sex

As introduced in section 5.5.4, participants' personal access to successful person was measured by their self-reports. Participants first indicated whether they personally knew someone who had achieved a similar level of success to the exemplars in their assigned condition. If they answered yes, they were asked to specify the sex of this person (see Table 5.6 for the original data). During the data exploration phase, we identified that the key factor influencing outcome responses was whether participants had personal access to successful women. Consequently, the data were reorganised as shown in Table 5.7.

Table 5.6: Distribution of participants reporting access to successful person.

Sex of successful person	Women Default	Women Marked	Men Default	Men Marked	Total
Woman	7	10	5	4	26
Man	13	4	12	14	43
Both	n/a	1	n/a	n/a	1
No	16	16	16	16	64

Table 5.7: Distribution of participants reporting access to successful women.

Access to successful women	Sex of participants	Women Default	Women Marked	Men Default	Men Marked	Total
Yes	**Female**	7	8	4	4	23
	Male	0	3	1	0	4
	Total	7	11	5	4	27
No	**Female**	10	8	13	15	46
	Male	19	12	15	15	61
	Total	29	20	28	30	107

5.6.2 The effects on visibility of women

We fitted separate models in terms of visibility of women and perceptions of achievement using R (R Core Team, 2022) in RStudio (RStudio Team, 2022). Estimated marginal means by package “emmeans” (Russell, 2002) was used to conduct *post-hoc* analysis.

This section examined participants’ accuracy in recalling the number of woman and man exemplars they were assigned to read in their respective conditions. Overall, female participants showed a higher accuracy rate than male participants: 81% of female participants provided correct recalls, while only 45% of male participants did so. Participants recall accuracy is 63% after reading passages with woman exemplars overall, compared to 64% for passages with man exemplars. Table 5.8 represents a detailed breakdown of recall accuracy across conditions and by participants’ sex.

Table 5.8: Accuracy of recall for woman and man exemplars by condition and participants’ sex.

Accuracy	**WomenDefault**		**WomenMarked**		**MenDefault**		**MenMarked**	
	female n = 17	male n = 19	female n = 16	male n = 15	female n = 17	male n =16	female n = 19	male n =15
Correct	11	3	16	12	11	3	18	11
Incorrect	6	16	0	3	6	13	1	4
Accuracy Rate	65%	16%	100%	80%	65%	19%	95%	73%

It is important to note that the low accuracy rate in the recalling task should not be interpreted as evidence that participants failed to engage properly with the task. First, as introduced in Section 5.5.7, a matching task was embedded within the exposure phase (passage reading) to ensure participants carefully read the passages and to strengthen

their memory of each exemplar's name and profession. Second, we applied a strict scoring criterion that only those who correctly identified the sex of all 12 exemplars (all female or all male) were coded as "correct", while even one mistake (e.g. correctly recalling 11) was classified as "incorrect". Third, the recall task was conducted at the very end of the experiment after an implicit association task involving gender stereotypes dependent from the current study, which may have interfered with recall performance. Finally and importantly, the recall task was intentionally placed last to assess whether any participants retained a clear awareness that all exemplars in the exposure passages were female or male, even after completing several intervening tasks.

Prior to examining the specific effects of gender marking in the conditions, we conducted an omnibus binomial logistic regression model fitted to participants' Accuracy (1-Correct/0-Incorrect), in which the four-level factor ReadingMarkers (WomenDefault, WomenMarked, MenDefault, MenMarked) was collapsed into a two-level variable, ExemplarSex, distinguishing between Woman Exemplars (WomenDefault + WomenMarked) and Man Exemplars (MenDefault + MenMarked). This model tested whether participants' accuracy differed based on the overall sex of exemplars in the exposure passages, regardless of gender marking. This omnibus model included the same predictors and interactions as the main analysis: ExemplarSex, GenSum (scores of gender beliefs), Sex (Woman/Man), and their interactions (ReadingSex*GenSum and Sex*GenSum). Control variables were also included: Age, Education (No academic degree / Bachelor's / Master's / Doctorate), as well as the interaction of ExemplarSex and Age, and the interaction of Sex and Education. Results from this omnibus model showed no significant main effect of ExemplarSex on participants' Accuracy ($F(1, Inf) = 0.17$, $p = .68$), suggesting that being exposed to woman exemplars versus man exemplars did not significantly influence Accuracy. Following this

global test, the main model, which includes the original four-level ReadingMarkers variable and its interactions, was used to investigate more fine-grained effects of gender marking in recall Accuracy.

We conducted a binomial logistic regression fitted to participants' Accuracy (1-Correct/0-Incorrect) on recalling the sex of the exemplars in the reading materials. The predicting variables were ReadingMarkers (WomenDefault/ WomenMarked/MenDefault/MenMarked), GenSum (scores of gender beliefs), Sex (Woman/Man), the interaction of ReadingMarkers and GenSum, and the interaction of Sex and GenSum.

The control variables were Age, Education (No academic degree/bachelor's/ master's/ doctorate), the interaction of ReadingMarkers and Age, and the interaction of Sex and Education. These variables were selected as part of an effort to fit the best model. Specifically, we evaluated multiple models with different combinations of control variables and interactions. The final model was chosen based on statistical fit, as indicated by a chi-squared value of $\chi^2(19) = 1500.5$, $p < .001$, and the highest McFadden pseudo R-squared value of 47% calculated by package "pscl" (Jackman, 2020). The control variables, namely Age ($F(1, \text{Inf}) = 28.57$, $p < .001$), Education ($F(3, \text{Inf}) = 17.94$, $p < .001$), the interaction of ReadingMarkers and Age ($F(3, \text{Inf}) = 16.21$, $p < .001$), and the interaction of Sex and Education ($F(3, \text{Inf}) = 42.67$, $p < .001$) were all significant predictors of Accuracy. However, as the primary focus of this analysis is on the effects of ReadingMarkers, GenSum, and Sex, so further details on the control variables will not be reported in this study.

First, other variables being constant, we found ReadingMarkers significantly predicted Accuracy ($F(3, Inf) = 117.28$, $p < .001$). Table 5.9 shows the *post-hoc* analysis results of each condition in ReadingMarkers. WomenMarked predicted the highest probability of correct recall (98%), while WomenDefault predicted the lowest probability (15%). The odds of a correct recall in WomenMarked were 229.22 times the odds in WomenDefault ($z(Inf) = 12.963$, $p < .001$). The odds of a correct recall in MenDefault were 1.94 times the odds in WomenDefault (z(Inf) = 15.23, $p < .001$), but were 0.03 times the odds in MenMarked ($z(Inf) = -15.44$, $p < .001$). The odds of a correct answer in MenMarked were .26 times the odds in WomenMarked ($z(Inf) = -3.44$, $p < .01$).

Table 5.9: Predicted effects of ReadingMarkers on Accuracy with 95% of confidence intervals (95% CI).

ReadingMarkers	B (SE)	95% CI for odds ratio			Probability
		Odds ratio	Lower	Upper	
WomenDefault	-1.71 (.18)	.18	.13	.26	15%
WomenMarked	3.72 (.37)	41.26	19.98	85.22	98%
MenDefault	-1.04 (.15)	.35	.27	.47	26%
MenMarked	2.37 (.18)	10.70	7.55	15.16	91%

Looking at the influence of GenSum on Accuracy, overall higher GenSum significantly predicted higher Accuracy (β = .05, z(Inf) = 7.49, p < .001). The significant interaction between GenSum and ReadingMarkers (F(3, Inf) = 4.54, p < .01) reflected that Accuracy was influenced by GenSum in different degrees across ReadingMarkers (See Table 5.10). We did not observe a significant difference between the effect in WomenDefault and WomenMarked (β = .00, z(Inf) = .12, p > .05). However, the positive effect of GenSum on Accuracy was significantly stronger in WomenDefault compared to MenDefault (β = .02, z(Inf) = 3.37, p < .01, reflecting the gap between the odds of a correct recall in WomenDefault and the odds in MenDefault would be smaller as attitudes became more positive toward gender equality.

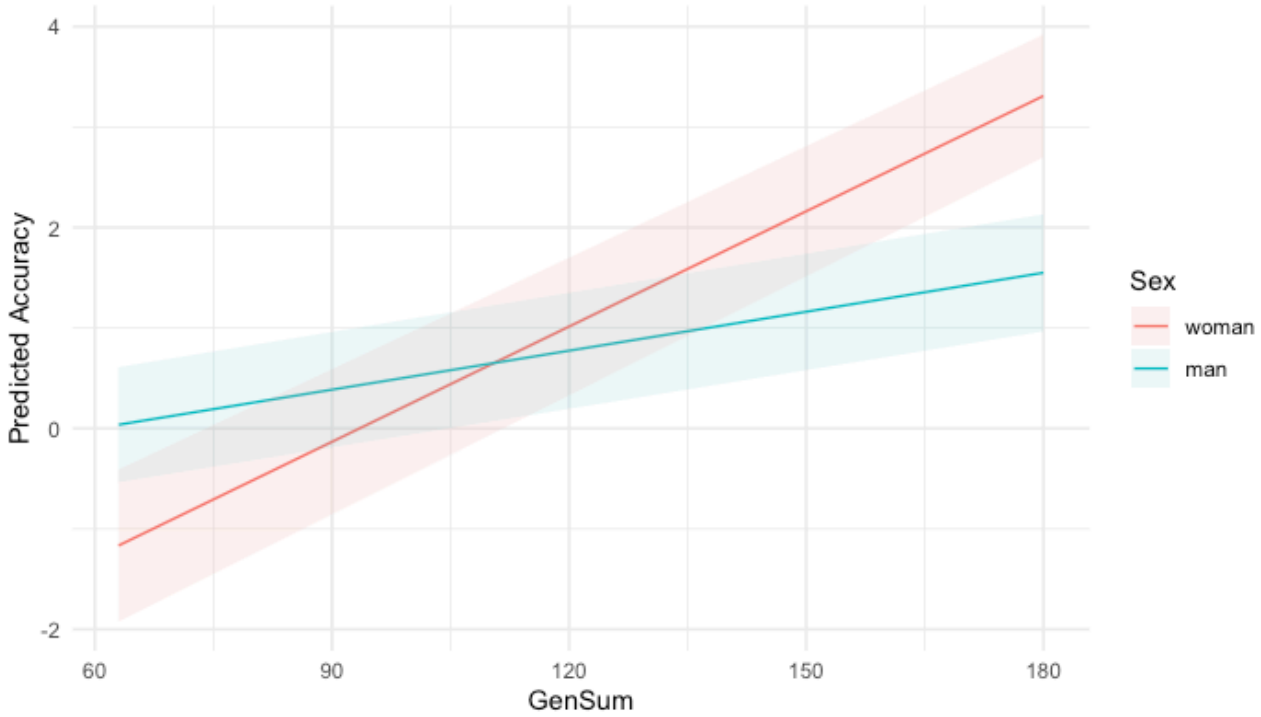
Table 5.10: Predicted effects of GenSum on Accuracy across ReadingMarkers.

ReadingMarkers	B (SE)	*F*-ratio	df1/df2*	*P*-value
WomenDefault	.04 (.01)	42.49	1/Inf	< .001
WomenMarked	.04 (.01)	13.58	1/Inf	< .001
MenDefault	.01 (.01)	5.81	1/Inf	< .05
MenMarked	.02 (.01)	9.78	1/Inf	< .01

*df = degree of freedom

As for gender difference, in general the odds of women being correct in Accuracy were 1.71 times the odds for Man, z(Inf) = 2.89, p < .01. Furthermore, the significant interaction between GenSum and Sex (F(1, Inf) = 14.89, p < .001) showed GenSum had a stronger positive effect on Accuracy for women than for men (β = .03, z(Inf) = 3.86, p < .001, also see Graph 5.2). This means the degree of increase in women's odds of an accurate recall was greater than it in men's odds with every score rise in GenSum.

Graph 5.2: The predicted Accuracy (log-odds) under the effects of GenSum for women and men.



5.6.3 The effects on perceptions of achievement

We fit three separate multiple linear regression models for the following three outcome variables: participants' evaluations on the general achievements of the exemplars (GeneralSuccess), their expectations for other women achieving similar success to the exemplars (WomenSuccess), and their self-expectations to achieve similar success to the exemplars (SelfSuccess). The independent variables, including both the predicting and control variables, are listed and explained in Table 5.11. Our focus was on the effects of the predicting variables, so only the main results related to F-ratios of the control variables will be reported in this paper (See Table 5.12).

Table 5.11: The predicting and control variables of the multiple linear regression models.

Predicting variables	**ReadingMarkers** (WomenDefault/MenDefault/WomenMarked/MenMarked): conditions of manipulation
	Sex (Female/Male)
	GenSum: measure of gender beliefs, higher scores reflecting more egalitarian attitudes
	Acquaintance (1-Yes/0-No): whether participants reported personal acquaintance with successful women or not
	ReadingMarkers × GenSum × Sex (a three-way interaction)
	ReadingMarkers × GenSum × Acquaintance (a three-way interaction)
Control variables	**Age**
	Education (No academic degree/bachelor's/master's/doctorate)
	ReadingMarkers × Education (an interaction)
	ReadingMarkers × Age × Sex (a three-way interaction)

Table 5.12: Effects of the control variables on GeneralSuccess, WomenSuccess, and SelfSuccess respectively.

			GeneralSuccess		WomenSuccess		SelfSuccess	
Control variable	**df1***	**df2**	***F*-ratio**	***P*-value**	***F*-ratio**	***P*-value**	***F*-ratio**	***P*-value**
Age	1	2368	8.98	< .01	117.38	< .001	1.90	.17
Education	1	2368	17.28	< .001	35.11	< .001	37.38	< .001
ReadingMarkers × Education	9	2368	23.08	< .001	54.21	< .001	15.76	< .001
ReadingMarkers × Sex × Age	3	2368	59.77	< .001	17.51	< .001	2.31	.08

*df = degree of freedom

5.6.3.1 The effects on perceptions of general achievement

The overall multiple linear regression reached statistical significance ($F(43, 2368) = 35.01$, $p < .001$, $R^2 = .39$) in the model predicting GeneralSuccess. Our results showed ReadingMarkers significantly predicted GeneralSuccess ($F(3, 2368) = 11.16$, $p < .001$). *Post-hoc* analysis showed WomenDefault predicted significantly lower perceived GeneralSuccess compared to WomenMarked ($\beta = -.95$, $t(2368) = -5.72$, $p < .001$), MenDefault ($\beta = -.58$, $t(2368) = -3.57$, $p < .01$) and MenMarked ($\beta = -.75$, $t(2368) = -3.37$, $p < .01$). WomenMarked also predicted significantly higher perceived GeneralSuccess than MenDefault ($\beta = .37$, $t(2368) = 2.62$, $p < .05$). No significant differences were observed between WomenMarked and MenMarked, or between MenDefault and MenMarked.

Overall females' ratings were significantly lower than males' ($\beta = -.25$, $t(2368) = -3.19$, $p < .01$), but the significant interaction between ReadingMarkers and Sex ($F(3, 2368) = 39.79$, $p < .001$) suggested females and males' perceptions of GeneralSuccess were different across ReadingMarkers (See Table 5.13). *Post-hoc* analysis showed males perceived the general achievement of exemplars differently across ReadingMarkers ($F(3, 2368) = 33.29$, $p < .001$), a pattern which was not observed in females ($F(3, 2368) = .85$, $p > .05$). Specifically, we found males gave the lowest ratings in WomenDefault, which were significantly lower than the ratings in all the other three conditions (WomenMarked: $\beta = -2.04$, $t(2368) = -9.75$, $p < .001$; MenDefault: $\beta = -1.42$, $t(2368) = -6.79$, $p < .001$; MenMarked: $\beta = -1.53$, $t(2368) = -6.09$, $p < .001$). Moreover, males' ratings in WomenDefault were also significantly lower than females' ($\beta = -1.11$, $t(2368) = -7.98$, $p < .001$). On the other hand, males' ratings in WomenMarked were significantly higher than females' ($\beta = 1.06$, $t(2368) = 5.59$, $p < .001$).

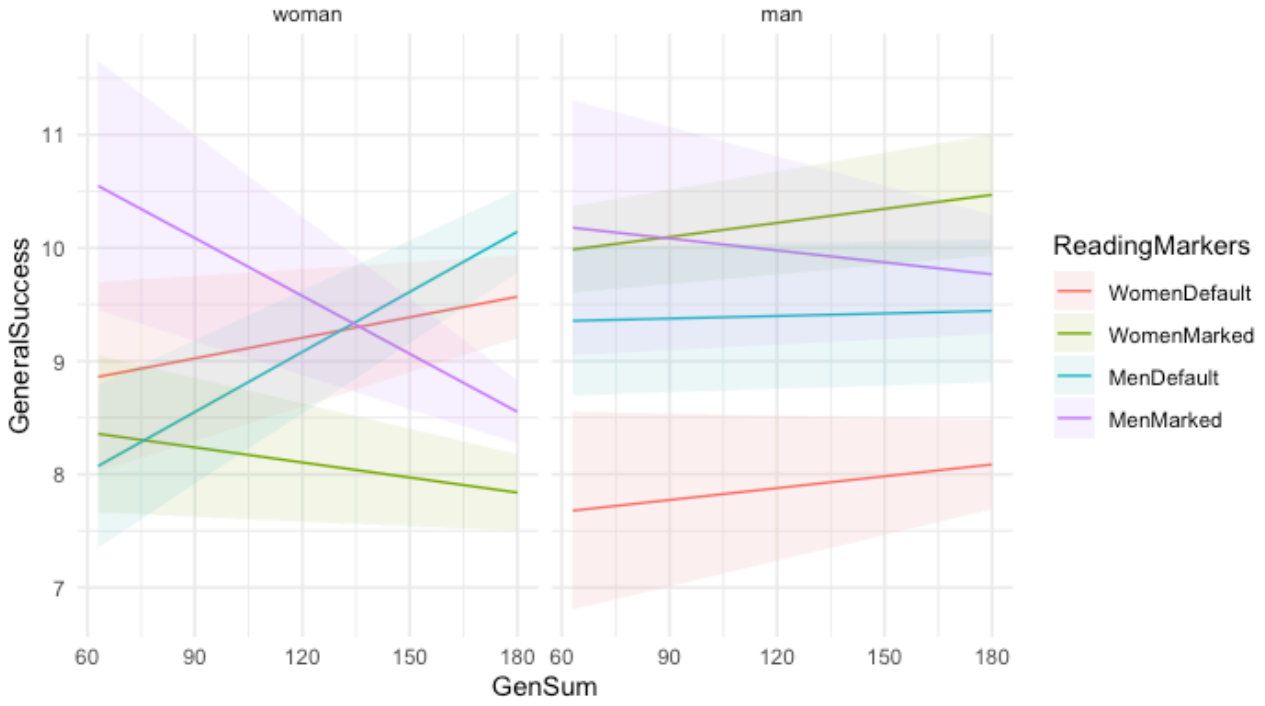
Table 5.13: Means (standard deviations), and predicted GeneralSuccess (estimated marginal means) with 95% confidence intervals (95% CI) across ReadingMarkers for females and males.

Participants' sex	ReadingMarkers	Mean(SD)	Estimated marginal means [95% CI]
Female	WomenDefault	9.88 (.32)	9.23 [8.96, 9.50]
	WomenMarked	9.06 (1.39)	9.10 [8.82, 9.38]
	MenDefault	9.12 (1.02)	8.97 [8.75, 9.19]
	MenMarked	8.58 (2.01)	9.19 [8.84, 9.54]
Male	WomenDefault	8.47 (1.35)	8.12 [7.81, 8.42]
	WomenMarked	9.47 (.89)	10.16 [9.88, 10.44]
	MenDefault	8.88 (1.22)	9.54 [9.26, 9.81]
	MenMarked	8.8 (.83)	9.65 [9.26, 10.04]

No significant influence of GenSum was observed on participants' overall perceptions of the exemplars' achievement ($F(1, 2368) = .18$, $p > .05$), but participants' perceptions were influenced by GenSum in significantly different trends across ReadingMarkers ($F(3, 2368) = 3.16$), $p < .05$). Furthermore, the significant 3-way interaction between ReadingMarkers, Sex and GenSum ($F(3, 2368) = 6.37$, $p < .001$) showed the effects of GenSum on perceptions significantly varied across ReadingMarkers for females ($F(3, 2368) = 6.37$, $p < .001$), but not for males ($F(3, 2368) = .41$, $p > .05$, also see Graph 5.3).

Post-hoc analysis showed GenSum was not significantly associated with women's perceptions of GeneralSuccess in WomenDefault ($\beta = .01$, $t(2368) = 1.29$, $p > .05$) and WomenMarked ($\beta = - .00$, $t(2368) = - 1.27$, $p > .05$). However, higher GenSum was significantly associated with women's higher perceived GeneralSuccess in MenDefault, which was significantly different from the trend observed in MenMarked ($\beta = .03$, $t(2368) = 4.81$, $p < .001$).

Graph 5.3: The predicted effects of GenSum on GeneralSuccess across ReadingMarkers for females and males.



Another focus of our analysis is to explore the influence of personal acquaintance with successful women on participants' perceptions of GeneralSuccess. Our results showed reported Acquaintance predicted significantly higher perceived GeneralSuccess compared to no acquaintance (β = .59, t(2368) = 5.15, p < .001).

In addition, the effects of Acquaintance on GeneralSuccess varied significantly across ReadingMarkers (F(3, 2368) = 27.65, p < .001, also see Table 5.14). *Post-hoc* analysis showed in participants personally knowing successful women, exemplars introduced with gender markers were perceived as the most successful. WomenMarked predicted significantly higher GeneralSuccess than WomenDefault (β = 1.57, t(2368) = 5.62, p < .001). No significant difference was observed in the perceptions between WomenDefault and MenDefault (β = - .37, t(2368) = - 1.28, p > .05). As in participants without such

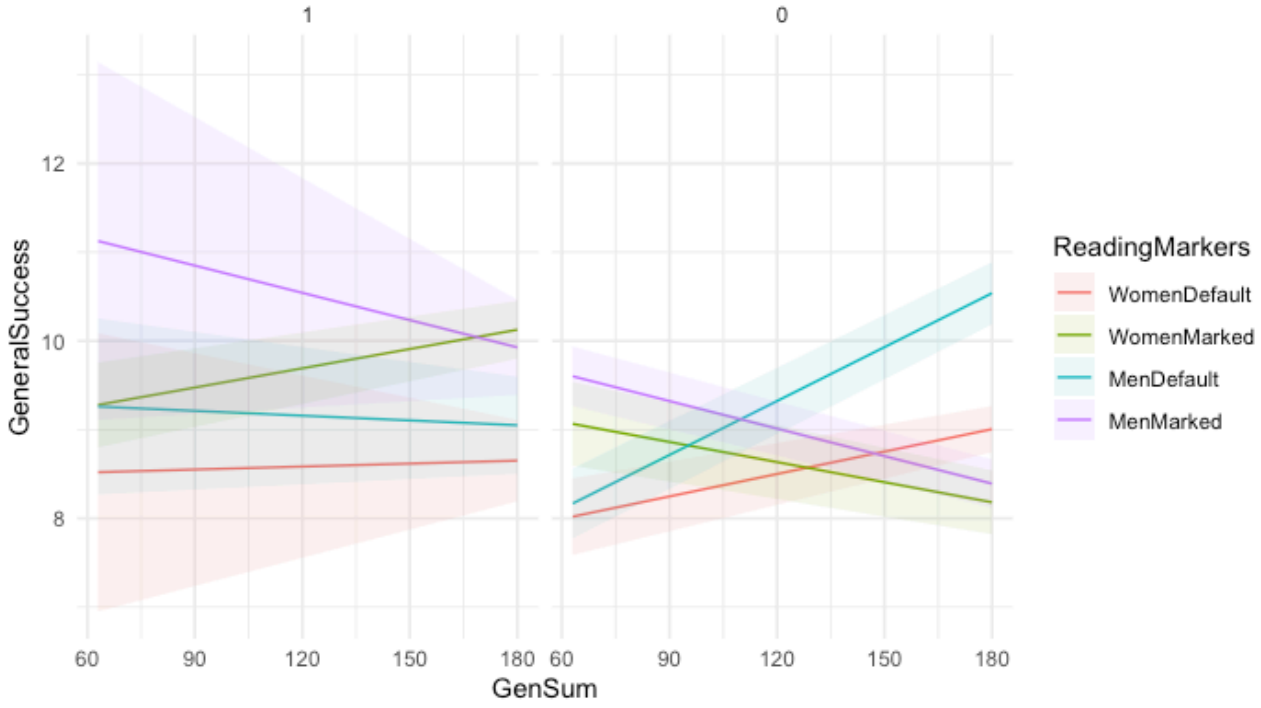
acquaintance, exemplars in MenDefault were perceived as the most successful, with ratings significantly higher than WomenDefault (β = .79, t(2368) = 5.76, p < .001), WomenMarked (β = .45, t(2368) = 2.89, p < .05), and MenMarked (β = .81, t(2368) = 5.92, p < .001). No significant difference was found in the perceptions between WomenDefault and WomenMarked (β = - .34, t(2368) = - 2.48, p > .05). Notably, having successful women as acquaintances or not did not show significantly different influences on the perceived GeneralSuccess in WomenDefault (β = - .00, t(2368) = - .01, p > .05), but such acquaintance predicted significantly higher perceived success for exemplars in WomenMarked (β = 1.23, t(2368) = 11.78, p < .001).

Table 5.14: Means (standard deviations), and predicted GeneralSuccess (estimated marginal means) with 95% confidence intervals (95% CI) across ReadingMarkers for participants reporting yes or no Acquaintance with successful women.

Acquaintance	ReadingMarkers	Mean(SD)	Estimated marginal means [95% CI]
Yes	WomenDefault	10.00 (.00)	8.67 [8.18, 9.17]
	WomenMarked	9.82 (.39)	10.24 [10.00, 10.48]
	MenDefault	8.80 (1.17)	9.04 [8.76, 9.33]
	MenMarked	9.75 (.44)	10.19 [9.55, 10.83]
No	WomenDefault	8.93 (1.29)	8.68 [8.52, 8.83]
	WomenMarked	8.95 (1.36)	9.01 [8.80, 9.23]
	MenDefault	9.04 (1.12)	9.47 [9.25, 9.68]
	MenMarked	8.53 (1.65)	8.66 [8.50, 8.81]

Furthermore, the significant 3-way interaction between ReadingMarkers, Acquaintance and GenSum($F(3, 2368) = 10.93$, $p < .001$) showed the effects of GenSum on perceptions significantly varied across ReadingMarkers for participants without Acquaintance ($F(3, 2368) = 29.96$, $p < .001$), but not for participants with Acquaintance ($F(3, 2368) = 1.35$, $p > .05$). *Post-hoc* analysis showed participants without Acquaintance showed a significantly different pattern between WomenDefault and WomenMarked ($\beta = .02$, $t(2368) = 3.9$, $p < .001$, see Graph 5.4): they perceived the exemplars in WomenDefault as more successful as their attitudes became more egalitarian, while an opposite trend was found in WomenMarked. We also observed a similar pattern between MenDefault and MenMarked ($\beta = .03$, $t(2368) = 8.64$, $p < .001$).

Graph 5.4: The predicted effects of GenSum on GeneralSuccess across ReadingMarkers for participants reporting yes (1) or no (0) Acquaintance with successful women.



In summary, females did not show significant differences in evaluations of exemplars' general achievement across conditions. However, males exposed to woman exemplars represented with gender-neutral default nouns provided notably lower evaluations of the exemplars, and these lower ratings were not significantly influenced by their gender beliefs. Participants with personal acquaintance with successful women gave higher evaluations to exemplars represented with gender-marked nouns, regardless of whether the exemplars were women or men. Conversely, participants without such acquaintance gave the highest evaluations to man exemplars represented with default nouns. Additionally, gender beliefs played a stronger role in shaping evaluations among participants without acquaintance, whereas they had minimal influence on those with acquaintance.

5.6.3.2 The effects on expected achievements of the other women

The overall multiple linear regression reached statistical significance ($F(43, 2368) = 57.17$, $p < .001$, $R^2 = .51$) in the model predicting WomenSuccess (participants' expectations for other women achieving similar success after exposure to exemplars across conditions). Our results showed ReadingMarkers significantly predicted WomenSuccess ($F(3, 2368) = 9.134$, $p < .001$), suggesting that participants had different levels of expectation on the other women's success across ReadingMarkers. *Post-hoc* analysis showed WomenDefault predicted significantly lower perceived WomenSuccess compared to WomenMarked ($\beta = -.88$, $t(2368) = -3.97$, $p < .001$) and MenDefault ($\beta = -1.06$, $t(2368) = -4.91$, $p < .001$). No significant differences were observed between WomenMarked, MenDefault, and MenMarked.

In addition, while overall females showed significantly higher expectation of the other women compared to males ($\beta = .37$, $t(2368) = 3.67$, $p < .001$), ReadingMarkers had different effects on females and males' perceptions of WomenSuccess ($F(3, 2368) = 13.04$, $p < .001$, see Table 5.15). *Post-hoc* analysis showed WomenMarked predicted females' highest expectation of WomenSuccess, significantly higher than WomenDefault ($\beta = 1.36$, $t(2368) = 5.14$, $p < .001$) and MenDefault ($\beta = .74$, $t(2368) = 3.10$, $p < .05$). Interestingly, females exposed to women exemplars with default terms even showed significantly lower expectation to other women than those exposed to the corresponding men exemplars ($\beta = -.62$, $t(2368) = -2.61$, $p < .05$). Males showed the highest expectation of WomenSuccess in MenDefault, significantly higher than the expectation in WomenDefault ($\beta = 1.50$, $t(2368) = 5.39$, $p < .001$), WomenMarked ($\beta = 1.10$, $t(2368) = 4.19$, $p < .001$), and MenMarked ($\beta = 1.35$, $t(2368) = 4.19$, $p < .001$). Notably, males did

not show significantly different expectation between WomenDefault and WomenMarked (β = - .40, t(2368) = - 1.43, p > .05).

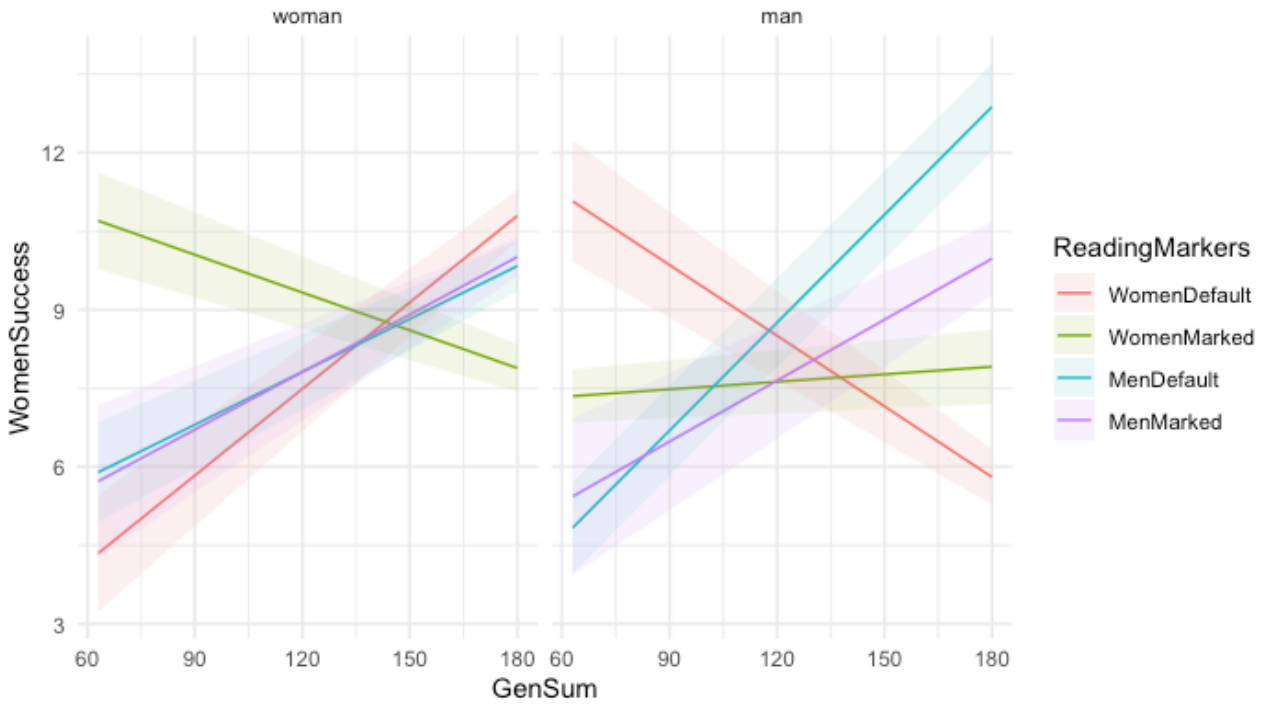
Table 5.15: Means (standard deviations), and predicted WomenSuccess (estimated marginal means) with 95% confidence intervals (95% CI) across ReadingMarkers for females and males.

Participants' Sex	Condition	Mean(SD)	Estimated marginal means [95% CI]
Female	WomenDefault	7.94 (1.96)	7.64 [7.28, 8.01]
	WomenMarked	8.06 (1.56)	9.00 [8.63, 9.37]
	MenDefault	9.29 (1.71)	8.26 [7.97, 8.55]
	MenMarked	9.16 (1.35)	8.28 [7.82, 8.75]
Male	WomenDefault	6.63 (2.44)	7.41 [7.01, 7.82]
	WomenMarked	8.00 (1.87)	7.81 [7.44, 8.71]
	MenDefault	8.31 (1.65)	8.91 [8.54, 9.27]
	MenMarked	8.27 (1.39)	7.56 [7.05, 8.08]

Overall higher GenSum significantly predicted higher expectation of WomenSuccess (β = .04, t(2368) = 11.71, p < .001). In addition, the effects of GenSum on WomenSuccess were significantly different across ReadingMarkers (F(3, 2368) = 38.07, p < .001). Furthermore, we found GenSum had different effects on females and males across ReadingMarkers (F(3, 2368) = 87.95, p < .001, also see Graph 5.5). *Post-hoc* analysis showed while higher GenSum predicted similar positive trends in females expectations for WomenSuccess in WomenDefault, MenDefault, and MenMarked, such more egalitarian attitudes predicted a negative trend in WomenMarked, a significantly different trend compared to it for WomenDefault (β = - .08, t(2368) = - 10.21, p < .001). Another interesting finding was observed in males' decreasing expectation of WomenSuccess in WomenDefault with the increase of their GenSum, a significantly different trend compared

to their expectation in MenDefault (β = - .11, t(2368) = - 11.98, p < .001). Accordingly, higher GenSum predicted opposite trends of expectation of WomenSuccess between females and males both in WomenDefault (β = .1, t(2368) = 15.35, p < .001) and WomenMarked (β = - .03, t(2368) = - 4.49, p < .001), an effect particularly salient in WomenDefault.

Graph 5.5: The predicted effects of GenSum on WomenSuccess across ReadingMarkers for females and males.



In terms of the influence of Acquaintance on participants' perceptions of WomenSuccess, overall those who had such acquaintance with successful women showed significantly higher expectation of WomenSuccess compared to those without such acquaintance (β = .47, t(2368) = 3.14, p < .01).

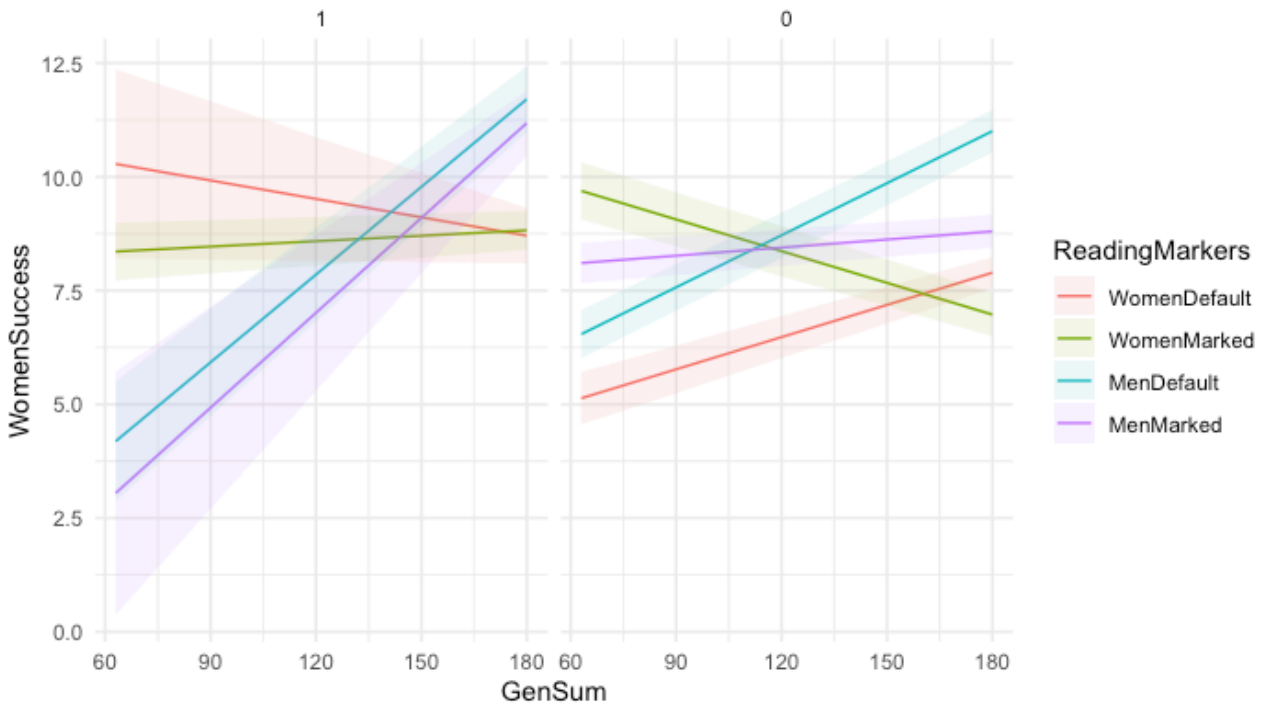
In addition, the significant interaction of ReadingMarkers and Acquaintance (F(3, 2368) = 21.77, p < .001) showed the effects were mainly on those reporting no acquaintance (F(3, 2368) = 97.90, p < .001, also see Table 5.16). In this no acquaintance group, WomenDefault predicted the lowest expectation of WomenSuccess, significantly lower than WomenMarked (β = - 1.91, t(2368) = - 10.58, p < .001), MenDefault (β = - 2.64, t(2368) = - 14.51, p < .001), and MenMarked (β = - 2.04, t(2368) = - 13.72, p < .001). It was MenDefault that predicted the highest expectation, even significantly higher than the expectation in WomenMarked (β = .73, t(2368) = 3.50, p < .01).

Table 5.16: Means (standard deviations), and predicted WomenSuccess (estimated marginal means) with 95% confidence intervals (95% CI) across ReadingMarkers for participants reporting yes or no Acquaintance with successful women.

Acquaintance	Condition	Mean(SD)	Estimated marginal means [95% CI]
Yes	WomenDefault	9.29 (.88)	8.83 [8.18, 9.48]
	WomenMarked	8.36 (1.61)	8.67 [8.35, 8.99]
	MenDefault	9.4 (1.21)	8.30 [7.93, 8.68]
	MenMarked	9.5 (.50)	7.58 [6.73, 8.42]
No	WomenDefault	6.76 (2.29)	6.23 [6.02, 6.43]
	WomenMarked	7.85 (1.74)	8.14 [7.85, 8.42]
	MenDefault	8.71 (1.81)	8.86 [8.57, 9.15]
	MenMarked	8.67 (1.49)	8.27 [8.06, 8.47]

Further looking at the significant 3-way interaction between ReadingMarkers, Acquaintance and GenSum($F(3, 2368) = 11.35$, $p < .001$, also see Graph 5.6), our results showed in participants with such acquaintance, GenSum did not show significant effects on their expectations of WomenSuccess in conditions with women exemplars, nor did the difference between WomenDefault and WomenMarked reach statistical significance ($\beta = -.02$, $t(2368) = -1.50$, $p > .05$). However, higher GenSum significantly predicted higher expectations of WomenSuccess in MenDefault and MenMarked (i.e. conditions with men exemplars), an effect not significantly different between these two conditions ($\beta = -.01$, $t(2368) = -.32$, $p > .05$).

Graph 5.6: The predicted effects of GenSum on WomenSuccess across ReadingMarkers for participants reporting yes (1) or no (0) Acquaintance with successful women.



As for participants without such acquaintance, higher GenSum significantly predicted higher expectation of WomenSuccess in the default conditions, though the effect in

MenDefault was even stronger than it in WomenDefault (β = .01, t(2368) = 2.88, p < .05). Interestingly, in this group higher GenSum predicted significantly lower expectation in WomenMarked, an effect significantly different from it in WomenDefault (β = - .05, t(2368) = - 8.63, p < .001).

In summary, females had highest expectations for other women achieving similar success to the exemplars when exposed to woman exemplars represented with female-marked nouns, though these expectations were lower among those with greater egalitarian attitudes. Conversely, males showed higher expectations for other women when exposed to man exemplars represented with default nouns. Interestingly, among males with greater egalitarian attitudes, we observed opposing trends when they were exposed to exemplars represented with default nouns: expectations were lower when exposed to woman exemplars and higher for man exemplars. In addition, the combination of exposure to woman exemplars and personal acquaintance with successful women mediated the lower expectations for other women observed when woman exemplars represents with default nouns. Similarly, such acquaintance, combined with greater egalitarian attitudes, boosted expectations among those exposed only to man exemplars.

5.6.3.3 The effects on participants' expected achievements of themselves

The overall multiple linear regression reached statistical significance ($F(43, 2368) = 34.22$, $p < .001$, $R^2 = .38$) in the model predicting SelfSuccess (participants' self-expectations for achieving similar success after exposure to exemplars across conditions). Our results showed ReadingMarkers significantly predicted SelfSuccess ($F(3, 2368) = 25.02$, $p < .001$), indicating that participants showed different degrees of expectation of their own future success across ReadingMarkers. *Post-hoc* analysis showed WomenDefault predicted significantly lower perceived SelfSuccess compared to WomenMarked ($\beta = -2.20$, $t(2368) = -6.73$, $p < .001$), MenDefault ($\beta = -2.69$, $t(2368) = -8.46$, $p < .001$) and MenMarked ($\beta = -2.00$, $t(2368) = -4.60$, $p < .001$). No significant differences were observed between WomenMarked, MenDefault, and MenMarked.

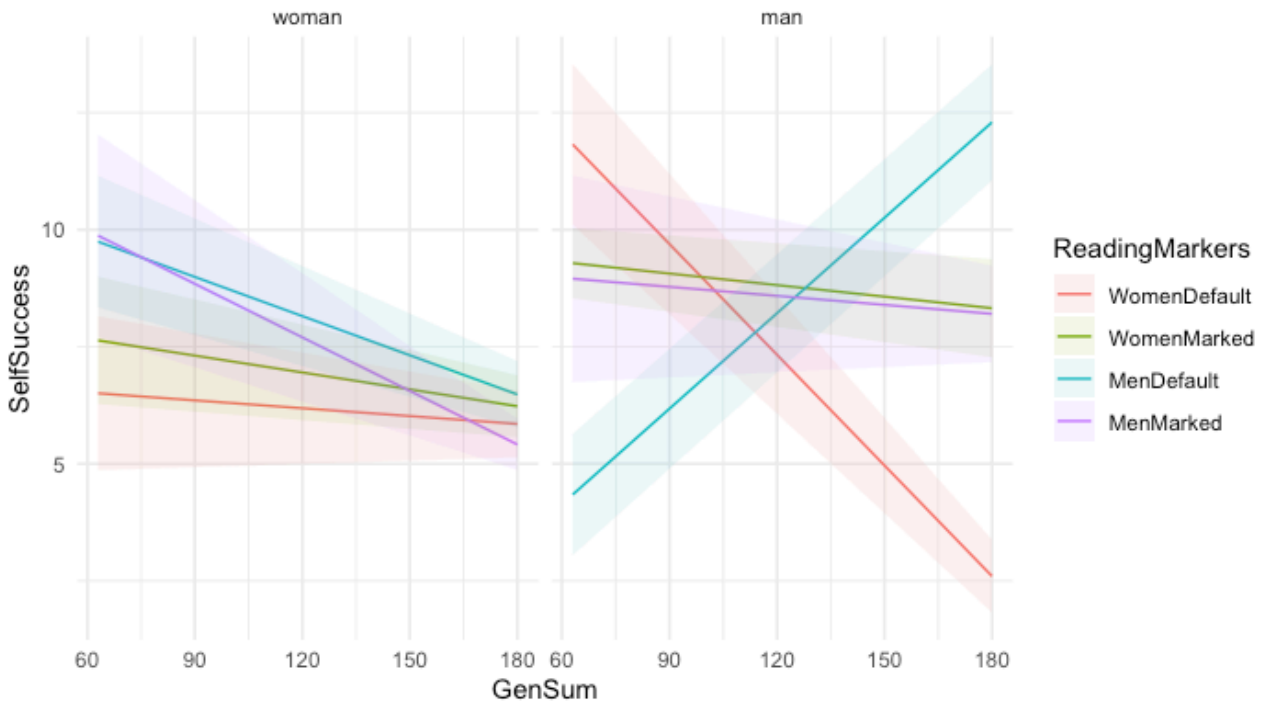
In general, females' expectations for their SelfSuccess was significantly lower than males' ($\beta = -.70$, $t(2368) = -4.67$, $p < .001$), but the significant interaction between ReadingMarkers and Sex ($F(3, 2368) = 3.02$, $p < .05$) suggested females and males' expectations were different across ReadingMarkers (also see Table 5.17). *Post-hoc* analysis showed females showed lowest expectation of their SelfSuccess in WomenDefault, significantly lower than the expectation in WomenMarked ($\beta = -1.51$, $t(2368) = -3.86$, $p < .001$), MenDefault ($\beta = -2.41$, $t(2368) = -6.92$, $p < .001$), and MenMarked ($\beta = -1.73$, $t(2368) = -3.91$, $p < .001$). Similarly in males, WomenDefault also predicted their lowest expectation of SelfSuccess, an expectation significantly lower than it in WomenMarked ($\beta = -2.89$, $t(2368) = -7.05$, $p < .001$), MenDefault ($\beta = -2.97$, $t(2368) = -7.23$, $p < .001$), and MenMarked ($\beta = -2.27$, $t(2368) = -4.60$, $p < .001$). No significant differences in expectations were observed in WomenMarked, MenDefault, and MenMarked, for either females or males.

Table 5.17: Means (standard deviations), and predicted SelfSuccess (estimated marginal means) with 95% confidence intervals (95% CI) across ReadingMarkers for females and males.

Participants' sex	Condition	Mean(SD)	Estimated marginal means [95% CI]
Female	WomenDefault	5.53 (2.92)	5.87 [5.33, 6.40]
	WomenMarked	6.62 (2.40)	7.37 [6.82, 7.92]
	MenDefault	7.35 (2.55)	8.28 [7.85, 8.71]
	MenMarked	6.47 (2.63)	7.60 [6.91, 8.28]
Male	WomenDefault	5.84 (2.98)	5.95 [5.35, 6.55]
	WomenMarked	8.20 (1.38)	8.84 [8.30, 9.38]
	MenDefault	6.88 (2.42)	8.92 [8.38, 9.46]
	MenMarked	6.87 (1.71)	8.22 [7.46, 8.98]

GenSum did not significantly predicted SelfSuccess (β = - .03, t(2368) = - 1.89, p > .05). However, the interaction of GenSum and ReadingMarkers was significant (F(3, 2368) = 11.08, p < .001). Furthermore, we found GenSum had different effects on females and males across ReadingMarkers (F(3, 2368) = 44.89, p < .001, also see Graph 5.7). *Post-hoc* analysis showed the significant effects of GenSum were mainly observed in males (F(3, 2368) = 36.43, p < .001), which were not similarly observed in females (F(3, 2368) = 2.36, p > .05). Specifically, while higher GenSum predicted males' significantly higher expectation of SelfSuccess in MenDefault, a significantly different trend was observed in WomenDefault (β = 1.45, t(2368) = 10.45, p < .001). No significant different effects of GenSum were observed on males' expectation between WomenMarked and MenMarked (β = .00, t(2368) = .13, p > .05).

Graph 5.7: The predicted effects of GenSum on SelfSuccess across ReadingMarkers for females and males.



Acquaintance with successful women significantly predicted participants' expectation of SelfSuccess, overall those who had such acquaintance showed significantly higher expectation of their own success in the future compared to those without such acquaintance (β = 2.14, t(2368) = 9.60, p < .001). Again, we found a significant interaction of ReadingMarkers and Acquaintance (F(3, 2368) = 5.34, p < .01, also see Table 5.18). *Post-hoc* analysis showed in participants having Acquaintance with successful women, their expectation of SelfSuccess in WomenDefault was not significantly different from it in WomenMarked (β = - 1.31, t(2368) = - 2.07, p > .05), but this expectation was significantly lower than it in MenDefault (β = - 1.75, t(2368) = - 3.09, p < .05). As for participants without such acquaintance, we found their expectation in WomenDefault was the lowest, significantly lower than WomenMarked (β = - 3.27, t(2368) = - 12.24, p < .001), MenDefault

((*β* = - 3.63, *t*(2368) = - 13.48, *p* < .001), and MenMarked (*β* = - 3.32, *t*(2368) = - 15.05, *p* < .001). No significant differences in expectations were observed in WomenMarked, MenDefault, and MenMarked, regardless of whether participants had such acquaintance or not.

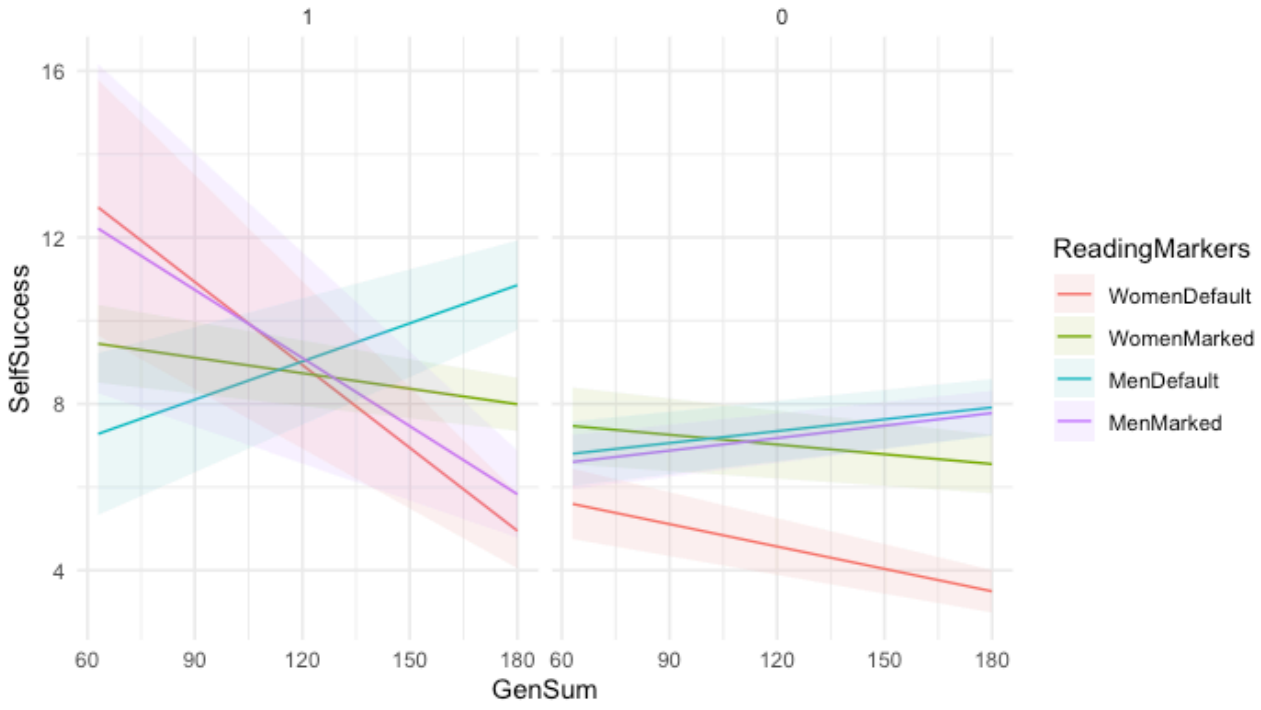
Table 5.18: Means (standard deviations), and predicted SelfSuccess (estimated marginal means) with 95% confidence intervals (95% CI) across ReadingMarkers for participants reporting yes or no Acquaintance with successful women.

Acquaintance	Condition	Mean(SD)	Estimated marginal means [95% CI]
Yes	WomenDefault	7.43 (1.77)	7.81 [6.84, 8.77]
	WomenMarked	8.00 (1.86)	8.94 [8.46, 9.41]
	MenDefault	9.20 (.99)	9.56 [9.00, 10.11]
	MenMarked	6.25 (2.50)	8.49 [7.24, 9.75]
No	WomenDefault	5.28 (3.03)	4.01 [3.70, 4.32]
	WomenMarked	7.05 (2.18)	7.28 [6.85, 7.70]
	MenDefault	6.75 (2.50)	7.64 [7.21, 8.07]
	MenMarked	6.70 (2.24)	7.32 [7.02, 7.63]

Furthermore, the significant three-way interaction between ReadingMarkers, Acquaintance and GenSum(*F*(3, 2368) = 6.45, *p* < .001; see Graph 5.8) showed GenSum had significantly different effects across ReadingMarkers between participants who were acquainted with successful women and those who were not. For participants had such Acquaintance, higher GenSum were associated with lower expectation of SelfSuccess, though the effect in WomenDefault was significantly stronger than it in WomenMarked (*β* = - .05, *t*(2368) = - 3.14, *p* < .01). Interestingly, we found MenDefault was the only condition that was associated with positive effect of GenSum in this group, in which higher GenSum predicted

higher expectation of SelfSuccess, an effect significantly different from it in WomenDefault (β = .10, t(2368) = 4.75, p < .001), WomenMarked (β = .04, t(2368) = 3.18, p < .01), and MenMarked (β = .09, t(2368) = 3.53, p < .01). As for participants without such acquaintance, higher GenSum was associated with lower expectation of SelfSuccess in WomenDefault, although this effect was not significantly different from it in WomenMarked (β = - .01, t(2368) = - 1.26, p > .05). This trend in WomenDefault was significantly different from it in MenDefault (β = - .03, t(2368) = - 3.67, p < .01) and MenMarked (β = - .03, t(2368) = - 4.10, p < .01), while the trend in WomenMarked was not significantly different from it in MenDefault (β = - .02, t(2368) = - 2.13, p > .05) and MenMarked (β = - .02, t(2368) = - 2.37, p > .05).

Graph 5.8: The predicted effects of GenSum on SelfSuccess across ReadingMarkers for participants reporting yes (1) or no (0) Acquaintance with successful women.



In summary, both females and males showed particularly lower self-expectations for achieving similar success to the exemplars when they were exposed to woman exemplars represented with default nouns. We observed that gender beliefs had minimal effects on females' self-expectations, but for males exposed to conditions with default nouns, these beliefs had a significant impact: greater egalitarian attitudes were associated with higher self-expectations when exposed to male exemplars but lower self-expectations when exposed to female exemplars. Furthermore, acquaintance with successful women largely mediated the lower self-expectations observed when participants exposed to women exemplars represented with default nouns. However, even with such acquaintance, self-expectations remained lower among participants with greater egalitarian attitudes.

5.7 Discussions

This study explored the effects of using default gender-neutral and female-marked nouns to represent woman exemplars in traditionally male-dominated fields (e.g., scientists, fire fighters, pilots). Man exemplars introduced by exactly the same materials, represented by either default or male-marked nouns, were used as control conditions. In this discussion section, we first discuss findings on visibility of women, followed by the perceived achievements of woman exemplars, expectations for the other women, and participants' self-expectations, focusing on the interplay between conditions, participants' sex, gender beliefs, and acquaintance with successful women.

5.7.1 The effects on visibility of women

In this study, higher visibility of women was defined as participants' higher accuracy in recalling the number of woman exemplars in related conditions after several distraction tasks. We found the accuracy was significantly higher when woman exemplars were represented with female-marked nouns compared to default nouns. This result is not unexpected as female marker unambiguously highlight the exemplars' woman status (Sczesny, Formanowicz & Moser 2016).

Furthermore, when both exemplars were represented with default nouns, participants' accuracy was significantly higher in the condition with man exemplars than in the condition with woman exemplars. This difference may be attributed to gender stereotypes of nouns, specifically the male-bias in professional terms within our context (Gygax and colleagues, 2008; Gabriel, Gygax, & Kuhn, 2018). When reading about woman exemplars in male-biased professions represented with default forms, the low recall accuracy could be due to participants not recognising all exemplars were women, despite the use of common female names. Alternatively, even if some participants initially noticed the exemplars as women,

distractions from the following tasks and the inconsistency between male-biased professions and the exemplars' woman status may have led to confusion when recalling the exact number of women exemplars in related conditions.

However, gender stereotypes might not be the only reason to the low accuracy in recollecting the number of women in the WomenDefault condition considering the findings that the accuracy in both default conditions were very low compared to their corresponding gender-marked conditions. This significant difference may be related to the lower sensitivity of Chinese speakers to gender information in discourse because of the absence of grammatical gender in Chinese (Chen & Su, 2011). While Chen and Su (2011) focused on the comparison between Chinese and English speakers' attention to gender through third-person pronouns, we look forward to future research examining how different degrees of grammatical gender marking may affect attention to gender-related information during sentence comprehension.

Interestingly, we found more positive gender beliefs were linked to higher recall accuracy across all conditions, especially in recalling woman exemplars, regardless of gender-marking. In addition, positive gender beliefs had a stronger influence on women, leading to overall higher accuracy for women than men. This appears to be a new finding, but essentially it is consistent with behaviours typically observed in individuals with lower levels of Modern Sexism and NeoSexism. Individuals with more positive gender beliefs tend to support the integration of women in social activities (Swim et al, 1995; Tougas et al., 1995) and actively engage in nonsexist behaviours (Swim, Mallett, & Stangor, 2004). Our findings suggest that individuals with more positive gender beliefs may be more sensitive to figures challenging the status quo of androcentrism. In contrast to those with

stronger sexist beliefs, they were more likely to recognise that all the exemplars were women in male-dominated fields in related conditions of our study. In our previous study on attitudes toward sexist and nonsexist language (Fan & Lawyer, 2024), we also observe a stronger positive effect of gender beliefs on women's nonsexist behaviour. This difference may stem from how acknowledging existing sexism (a key aspect of our gender beliefs measure) influence women and men differently as women and men may behave on behalf of the benefits of their own group. Together with the Chen and Su's (2011) findings on gender information processing of Chinese, it is intriguing to explore further how individuals' political attitudes may influence their attention in social information processing.

Although personal acquaintance with successful women was not a variable in our analysis of the visibility of women, as illustrated in Table 5.7, participants exposed to woman exemplars, especially when those exemplars were represented with female-marked nouns, reported more instances of personal acquaintance with successful women. This is potentially related to research examining visibility of women from a different perspective: whether exposure to women exemplars, especially with feminised from, make individuals more ready to retrieve women in their mental representations (e.g. Stahlberg et al., 2001; Keith et al., 2022). While this is beyond our current research scope, we look forward to future studies exploring this topic in Chinese and other grammatically genderless languages.

5.7.2 The effects on participants' perceived achievements

Controlling for other variables, participants exposed to woman exemplars with default nouns rated the exemplars' general achievements lower and had lower expectations for other women and themselves achieving similar success, compared not only to those exposed to woman exemplars with female-marked nouns, but also to man exemplars. This difference was most significant in participants' self-expectations, where the gap between those exposed to woman exemplars with default nouns and the other conditions was most pronounced.

However, the interplay between sex, gender beliefs, and acquaintance with successful women across conditions complicates our conclusion that female-marked forms are consistently more effective in representing women in male-biased fields, or that default forms necessarily lead to backlash. Understanding how these key factors influence perceptions across contexts is key to improving the representation of women in male-dominated fields. We particularly address the mixed evaluations related to woman exemplars represented with default nouns.

5.7.2.1 Sex difference in the perception of general achievements of women

In this study, after being exposed to identical biographical passages featuring either woman or man exemplars, represented with either default or marked nouns, female participants showed broadly consistent evaluations of the exemplars' general achievements across conditions with no statistically significant differences. However, we were surprised to find that male participants evaluated woman exemplars represented with default nouns significantly lower than in the other three conditions. Moreover, both female and male participants' evaluations of woman exemplars remained consistent across all levels of gender beliefs. This suggests that while both participants' sex and gender beliefs

were included in our model, it is participants' sex (male), rather than the gender beliefs we initially hypothesised, that more directly accounts for the observed lower evaluations of WomenDefault. The interaction between sex and gender beliefs indicates that male participants' evaluations were particularly sensitive to the condition in which women were represented with default nouns. On the other hand, this supports previous findings that men, more than women, tend to show stronger negative attitudes and behaviours against women violating prescriptive gender norms (Burgess & Borgida, 1999; Glick & Fiske, 2001; Rudman & Fairchild, 2004; Budziszewska, Hansen, Bilewicz, 2014). However, given that male participants' significantly higher recognition of the achievements in the same women exemplars when represented with female-marked nouns, it is plausible that their 'sanction' specifically targets women who not only challenge gender-stereotypes but also enter the traditionally male-occupied semantic space of professions through unmarked default nouns. This higher recognition of female-marked exemplars suggests that men may acknowledge women's achievements as long as they remain labelled as exceptional with the female marker, thus preserving men's privileged status in these professions (Sczesny, Moser, & Wood, 2015).

5.7.2.2 Sex differences in the expected achievements of other women and the participants themselves

For female participants, those exposed to woman exemplars with female-marked nouns had higher expectations for other women achieving similar success to the exemplars compared to those exposed to man exemplars, though those exposed to the same woman exemplars with default nouns showed the lowest expectation. This suggests that at least exposure to woman exemplars with female-marked nouns positively influence belief in other women, supporting the 'seeing is believing' effect (Dasgupta & Asgari, 2004). If lower expectations reflect backlash to those exposed to woman exemplars with default nouns,

our analysis shows that more egalitarian gender beliefs may help resist this backlash in female participants. However, we only observe this resistance in the expectations for other women rather than the female participants themselves: female participants exposed to the WomenDefault condition reported the lowest expectations for their own future success. Although female participants showed as high recognition of the women exemplars' general achievements when represented with default nouns as the exemplars in the other three conditions, they may perceive the achievements of the women exemplars with default nouns as less attainable, leading to a stronger self-deflating effect due to the upward comparison (Hoyt & Simon, 2011). Surprisingly, even highly egalitarian female participants who had high expectations for the other women showed lower belief in their own future success in this condition. Overall, these findings were consistent with Rudman and Phelan's (2010) conclusion that seeing can help women believe in their peers, but not necessarily in themselves.

Different from female participants, male participants exposed to man exemplars with default nouns showed the highest expectations for other women, particularly in those with more egalitarian attitudes. Interestingly, male participants exposed to woman exemplars with default nouns reported the lowest self-expectations, a pattern also observed in female participants. This is somewhat unexpected, as previously only women have been found to self-deflate themselves in response to successful women in counter-stereotypical fields (Parks-Stamm, Heilman, & Hearn, 2008). Despite giving lower evaluations of woman exemplars' general achievements, male participants in the WomenDefault condition also had lower expectations for both other women and themselves, which seems contradictory. Further analysis of gender beliefs reveals a salient sex difference: while highly egalitarian female participants showed higher expectations for other women regardless of the

exemplars' sex in the conditions of default nouns, highly egalitarian male exemplars showed particularly lower expectations for both other women and themselves when exposed to the WomenDefault condition but higher expectations when exposed to the MenDefault condition. However, although male participants may hesitate to acknowledge the women exemplars' achievements when they were represented with default nouns, those with more egalitarian gender beliefs may empathise with women's struggles and their efforts taken to gain the achievement in male-dominated fields, leading to lower expectations for other women and themselves. This is not contradictory with their higher expectations when exposed to men exemplars with default nouns. Furthermore, the interaction between sex and gender beliefs are likely to explain why we observe a self-deflating effect in male participants as well. Less egalitarian men, who may not appreciate the challenges women face in achieving professional success, or who devalue women's accomplishments, may feel more confident in their own ability to reach the same level of achievements as the woman exemplars represented with default nouns.

5.7.2.3 Influence of acquaintance with successful women and gender beliefs across conditions

In general, we found personal acquaintance with successful women had positive effects on participants' evaluations of exemplars, as well as their expectations of other women and themselves, compared to those without such acquaintance across all conditions. These findings are consistence with the positive effects of personal access to successful women on perceptions of women (Dasgupta & Asgari, 2004). In addition, compared to the acquaintance group, perceptions of the no-acquaintance group were more strongly influenced by their gender beliefs. Consistent with previous findings (Fan & Lawyer, in prep), gender beliefs positively influenced perceptions of exemplars with default forms and negatively influenced those with marked forms. Particularly, the influence of such

acquaintance on participants' expectations for other women's and their own future achievements is worth further discussion.

In terms of expectations for other women, personal acquaintance with successful women is likely to mediate participants' expectations regardless of exemplar sex or representation. Furthermore, this acquaintance combined with exposure to woman exemplars tend to stabilise participants' expectations, even with different levels of egalitarian attitudes. This positive effect may come from stronger identification with the successful women (Hoyt & Simon, 2011). For those acquainted with successful women but exposed to man exemplars, more egalitarian attitudes played a significant role in boosting expectations for the other women. In contrast, participants without such acquaintance group showed the highest expectations when exposed to the MenDefault condition but the lowest in the WomenDefault condition, despite the positive influence of egalitarian attitudes in both cases. These findings suggest that personal acquaintance with successful women is key to fostering confidence in women's professional success (Dasgupta & Asgari, 2004), although this confidence may need to be enhanced by higher egalitarian attitudes after the immediate exposure to man exemplars in our study.

As for expectations for participants' own future achievements, those with personal acquaintance showed similar self-expectations when exposed to woman exemplars regardless of representation. However, despite that the acquaintance group had significantly higher self-expectations than the no-acquaintance group when exposed to the WomenDefault condition, these expectations were still significantly lower than when exposed to the MenDefault condition. Moreover, gender attitudes had opposite influences in these two conditions, though the effect was stronger in the acquaintance group:

egalitarian attitudes correlated with higher self-expectations in the MenDefault condition, but with lower self-expectations in the WomenDefault condition. Acknowledgedly, participants with more egalitarian attitudes, who have a deeper understanding of women's unequal status in our society, tend to recognise the systemic barriers women face in male-dominated professions (Swim et al., 1995; Tougas et al., 1995). When exposed to the MenDefault condition, these participants' self-expectations were not discouraged as their personal acquaintance with successful women can help to create a symmetrical image of women and men achieving similar success in related fields. However, when exposed to woman exemplars, personal acquaintance with successful women deepens their recognition of the disproportionate efforts required for the exemplars in our study to succeed, especially when these women were represented with default nouns which symbolically place them in a semantic space historically occupied by men (Stanley,1977). Therefore, these highly egalitarian participants may perceive the women exemplars' achievements as exceptionally difficult to attain (Parks-Stamm, Heilman, & Hearn, 2008; Hoyt & Simon, 2011), and consequently lower their self-expectations.

5.7.3 General discussions

In summary, we found female-marked nouns were especially effective in increasing visibility of women in male-dominated fields. In addition, the overall evaluations of woman exemplars represented with default nouns were lower than those with female-marked nouns, especially in participants' expectations for other women and themselves achieving similar success. However, this does not necessarily imply that the female-marked form is a superior choice. The lower evaluations of woman exemplars with default nouns indicate men's negative reactions to women challenging the prescriptive gender norms. The lower expectations in this condition indicate highly egalitarian participants' awareness of challenges women face in entering into the semantic space traditionally dominated by men.

It is important to note that in this study we controlled for the names of exemplars by intentionally selecting names traditionally perceived as typical female or male. However, in contemporary Mainland China, many names do not reveal clear gender information. In some cases, the perceived gender of a name may not be consistent with the individual's actual gender. For example, the real name of one of our exemplars, a pilot named 余旭 'Yu, Xu' contains the character 旭 meaning 'sunrise', which does not indicate gender directly. In such cases, female-marked representation of women may play an even more significant role in increasing recognition of women in male-dominated fields compared to the gender-neutral representation.

On the other hand, it is worth further explorations how consistently female-marked nouns, compared to default nouns, can yield the overall benefits of exposure to successful woman exemplars in counter-stereotypical fields while mediating potential backlash. Importantly,

the nouns in our study are professions highly associated with men, where female-marked forms are particularly highly accepted (Fan & Lawyer, *in prep*). It is plausible that these female-marked nouns do not directly indicate negative connotations as 女司机 ‘female driver’ (Li & Luo, 2020) or 女博士 ‘female doctor’ (Peng et al., 2021), so we did not observe obvious negative effects of these nouns on perceptions of women. In our previous study on attitudes toward sexist and nonsexist language in Chinese (Fan & Lawyer, 2024), we found a distinct difference in perceiving the use of 女科学家 ‘female scientist’ and 女司机 ‘female driver’: while 女科学家 ‘female scientist’ was generally not judged as sexist language, 女司机 ‘female driver’ was consistently judged as sexist. This distinction may partly explain why female-marked nouns in this study, such as 女科学家 ‘female scientist’, 女消防员 ‘female firefighter’, and 女警察 ‘female police officer’ appeared to have a more positive effect in representing woman exemplars in male-nominated professions. Unlike expressions such as 女司机 ‘female driver’ or 女博士 ‘female PhD’, which have shown signs of stigmatisation in public discourse, the female-marked nouns in our materials are more often associated with positive and respectful representations. It is likely that participants have been more frequently exposed to empowering or neutral uses of these female-marked terms in media and everyday contexts. As a result, these particular female-marked terms were more readily accepted and did not appear to trigger negative perceptions of women in the way that more stigmatised terms might. It is worth to conduct further research to examine whether the results of this study hold when exploring perceptions of female-marked professions with potential negative connotations or even fictitious professions in the same or similar contexts.

5.8 Conclusion

This study examined the effects of exposure to woman exemplars in counter-stereotypical fields, represented with either gender-neutral or female-marked professional terms in simplified Chinese, on individuals' perceptions of women and themselves. It also explored factors including participants' sex, personal acquaintance with successful women, and gender beliefs as contributing variables in shaping these perceptions.

Overall, woman exemplars represented female-marked nouns showed advantages over those represented with gender-neutral nouns in the following aspects. First, visibility of women in male-dominated fields increased as participants recalled exemplars as women more accurately when they were represented with female-marked nouns. This suggests that explicit female-marking enhanced participants' attention to woman exemplars in counter-stereotypical fields. Second, evaluations of the exemplars' achievements were more positive among male participants when women were represented with female-marked nouns. However, this likely reflects a subtle bias among men against women represented with gender-neutral nouns, potentially because gender-neutral term can be a linguistic symbol of women's entry into traditionally male domains, which implicitly challenges the existing social hierarchy (Stanley, 1977). Third, participants exposed to female-marked exemplars showed higher expectations for other women achieving similar success. However, it is important to highlight that combining short-term exposure (e.g., biographies of woman exemplars) and long-term exposure (e.g., personal acquaintance with successful women) encouraged equally high expectations for other women, regardless of representations. Finally, participants exposed to female-marked woman exemplars showed higher self-expectations. By contrast, exposure to woman exemplars with default nouns can lead to self-deflating effect (Hoyt & Simon, 2011). However,

considering this effect was particularly observed among highly egalitarian participants, the lower self-expectations reflect a deeper understanding of the systemic challenges women face in achieving an equal status to men (both achievements and titles) rather than a direct backlash due to exposure to counter-stereotypical women with gender neutral representation.

In conclusion, this study underlines the complex effects of exposure, participants' sex, and gender beliefs on perceptions of women represented in counter-stereotypical fields. While female-marked representation of woman exemplars in male-dominated fields may hold advantages in today's context, as societal beliefs on gender equality evolve, the perceptions disadvantages related to gender neutral representation of women are subject to change as well. Ultimately, we support neutralisation as the optimal strategy for reaching gender-inclusivity in language (Gabriel, Gygax, & Kuhn, 2018), although full neutralisation may not yet be practical in China's current context, where gender stereotypes are still embedded in certain nouns (Fan & Lawyer, in prep) and the overall gender attitudes remain less egalitarian especially among men (Fan & Lawyer, 2024). However, consistent with Rudman and Phelan's (2010) perspective, the civilisation of our society is developing. Ongoing monitoring public attitudes will be key to understanding the society shifts and adapting different inclusivity strategies accordingly. In addition, in an era of big data, a promising research direction could be tailoring language strategies to individual gender attitudes, although this approach would need to be balanced with ethical considerations. When gender stereotypes in professions are relentlessly violated so that it is as common for women to be fire fighters as for men to be nurses; when acquaintance with women achieving high success in all professions is commonplace; when women truly

hold up the half sky in China, we may be ready for full neutralisation in gender representation.

Chapter 6 General discussions

6.1 Summary of the findings and implications

6.1.1 Study 1 (Chapter 3)

In Study 1, we developed the first general inventory of attitudes toward sexist and nonsexist language in Chinese (IASNL-G Chinese) and provided the first empirical evidence of these attitudes among younger individuals. First, our findings showed that attitudes measured by IASNL-G Chinese, participants' sex (female and male), and gender beliefs (Modern Sexism, Neosexism) were positively correlated. Using Principle Component Analysis, we restructured gender beliefs into three factors namely, recognition/ denial of existing sexism, neosexism, and empathy for women's unequal status. We then applied multiple linear regression models to explore how these gender beliefs, along with age and sex, influenced IASNL-G Chinese results.

Overall, we found age was a significant predictor to general attitudes, with younger participants in this study showing a stronger preference for language reform and gender-inclusive language. Notably, we observed a persistent gender difference in the results of IASNL-G Chinese, tied to participants' degrees of recognising the continuing sexism in today's society. Even after accounting for differences in gender beliefs, age, and education, females with higher acknowledgment of ongoing sexism scored higher in IASNL-G Chinese scores reflecting more favourable attitudes toward eliminating sexist language and using gender-inclusive language, while male's scores were minimally affected. Further analysis of the sub-sections of the IASNL-G Chinese showed that greater acknowledgement of sexism among females was associated with their increased recognition of sexist language and a stronger willingness to use gender-inclusive

language. In contrast, this acknowledgement led to a decreased willingness among males to use inclusive language. Consequently, this difference amplified the gap between female and male's general attitudes toward sexist and nonsexist language, highlighting the importance of considering the potentially distinct motivations that drive women and men to use or avoid gender-inclusive language in China.

In summary, the findings of Study 1 provide a comprehensive understanding of young people's attitudes in mainland China toward language reform, recognition of sexist language, and willingness to use gender-inclusive language. Furthermore, these findings shed light on the relationships between these attitudes toward sexist and gender-inclusive language and factors including age, sex, and gender beliefs. Finally, these findings serve as a foundation for our subsequent research targeting on perceptions of gender-marked nouns and gender-neutral unmarked nouns, guiding both data collection and analysis.

6.1.2 Study 2 (Chapter 4)

In Study 2, we examined individuals' perceptions of a specific form of sexist language - asymmetrical gender marking of nouns. Particularly, we explored the acceptability of gender-marked nouns used for professional terms (e.g., nurse or firefighter) when such gender markers are grammatically unnecessary and referentially redundant compared to the grammatically standard gender-neutral default nouns (zero-marking). Participants evaluated the acceptability of different representations and how they associated the corresponding nouns with women and men. Using a cumulative link mixed model, we analysed potential differences in the acceptability of female and male referent representations and examined how nouns' gender stereotypes, participants' social beliefs, and decades of birth influenced their (in)acceptability.

Overall, our findings showed that redundant female marking was more accepted than the corresponding male marking, even when the other factors were held constant, mirroring the real-world tendency to represent women through overt female marking (Menegatti & Rubini, 2017; Xu, 2018). Furthermore, only the acceptability of default nouns addressing female referents and the acceptability of redundant male marking were influenced by nouns' gender stereotypes. These findings suggest a common linguistic practice of representing males with default nouns and females with female-marked nouns, regardless of gender stereotypes. Importantly, these different perceptions, however, tend to be shaped by individuals' general social beliefs about gender equality and language inclusivity. Participants with less egalitarian attitudes were more likely to accept overt gender marking and less likely to accept gender-neutral default nouns. Conversely, those with more supportive social beliefs were more inclined to accept default nouns and less inclined to accept overt gender marking.

This study is the first know systematic quantitative investigation of gender-marked nouns in Chinese. It highlights that asymmetrical gender marking is not solely influenced by gender stereotypes but also reflects broader gender and language beliefs, further supporting the strong link between such asymmetry and linguistic sexism (Stahlberg et al., 2007). In addition, our data of nouns' gender stereotypes and the acceptance of redundant female-marked professional terms provide empirical support for the experimental design of Study 3. The scale results can also be independently used to support the selection and design of stimuli for other independent experiments. The findings from our Study 1 and Study 2, which explored the relationships between sex, gender beliefs, and attitudes toward sexist and gender-inclusive language, guided our focus in Study 3 on the complex

interplay between sex and gender beliefs in shaping perceptions of different representations of women and men.

6.1.3 Study 3 (Chapter 5)

In Study 3, we continued to explore perceptions of gender-marked and gender-neutral default nouns focusing on woman exemplars in male-dominated professions (e.g., female pilot vs. pilot). Each participant was randomly assigned to a single condition of the four: 12 woman or man exemplars represented with either default nouns or female-marked nouns. We measured recall accuracy for the number of women or men, evaluations of the exemplars' achievements, and expectations for the other women and themselves achieving similar success to explore the potential advantages and backlashes of representing counter-stereotypical women with female-marked versus default nouns.

Using a binomial logistic regression model, we found that female-marked nouns increased the visibility of women in male-dominated fields, as participants recalled the number of women more accurately than with those with gender-neutral representations. This findings echoed Gabriel and colleagues' (2018) observations that nouns with strong stereotypical associations can result in biased representations, undermining the intended gender neutrality of the supposed gender-neutral forms.

Using multiple linear regression models, we analysed differences in the evaluations and expectations across conditions and examined how participants' sex, personal acquaintance with successful women, and gender beliefs contributed to shaping these perceptions. First, we found male participants were less likely to recognise women's achievements when represented with default nouns, suggesting a subtle bias against gender-neutral representation. This bias may stem from the challenge gender-neutral

nouns pose to traditional social hierarchies, as they symbolise women entering semantic spaces historically dominated by men (Stanley, 1977). Second, participants exposed to female-marked exemplars had higher expectations for other women achieving similar success. Notably, combinations of short-term exposure (e.g., biographies of woman exemplars) and long-term exposure (e.g., personal acquaintance with successful women) contributed to equally high expectations, regardless of representations. Finally, exposure to woman exemplars with default nouns can lead to self-deflating effect (Hoyt & Simon, 2011) compared to female-marked nouns. However, this effect was observed primarily among highly egalitarian participants, suggesting that the lower self-expectations reflect a deeper awareness of the systemic barriers women face in attaining equal status with men - both in achievements and titles - rather than a direct backlash against counter-stereotypical women represented with gender-neutral nouns.

In summary, Study 3 is the first known to explore how subtle differences in representing counter-stereotypical women (female-marked vs. default nouns) influence audience perceptions. It highlights the importance of considering diverse factors such as audience sex, gender beliefs, and personal acquaintance with successful women. Based on current societal dynamics, we found that female-marked form (as long as the marked noun carries no obvious negative connotations) performs better than default form in enhancing women's visibility in male-dominated fields while mitigating potential backlash such as negative reactions from men or self-deflating effects especially among highly egalitarian audience. However, with the development of society, with greater gender equality and the breakdown of gender biases in professions, the use of default nouns to achieve true gender inclusivity is promising in the future.

6.2 Gender differences and the role of gender beliefs

Throughout this PhD project, gender beliefs were consistently measured using the Chinese-adapted versions of the Modern Sexism Scale (Swim et al., 1995) and the Neosexism Scale (Tougas et al., 1995). Modern sexists support for occupational gender segregation perceived biological differences between women and men and deny the existence of continued sexism in society. Neosexists are featured in hostility toward initiatives supporting women's rights, and endorse the current social hierarchy to maintain patriarchal interests.

In Study 1, principal component analysis was used to restructure the two scales into three components: recognition/denial of continued sexism, neosexism and empathy for women's unequal status. This restructuring provided a foundation for understanding which specific dimensions of gender beliefs influence particular aspects of language attitudes. However, due to the distinct variable and data analysis requirements of subsequent studies, this categorisation was not carried forward in later experiments.

In Study 2, given the strong correlations between participants' sex, gender beliefs, and language attitudes, a composite score was created by combining their scores on the Modern Sexism Scale, Neosexism Scale, and INSAL-G Chinese Scale. This single value represented each participant's overall attitude toward gender equality and language inclusivity.

In Study 3, the complexity of the variables and models precluded further differentiation of gender beliefs.Instead, the combined scores from the Modern Sexism Scale and Neosexism Scale were used as a unified indicator of gender beliefs. This approach

facilitated the examination of broader trends in the relationships between gender beliefs, perceptions of gender-neutral and gender-marked nouns, and audience responses to counter-stereotypical representations of women.

Across all three studies, analyses of the relationships between participants' sex, gender beliefs, and their attitudes toward and perceptions of sexist and gender-inclusive language revealed a consistent pattern: when controlling for age and education, individuals with more egalitarian gender beliefs exhibited more favourable attitudes toward gender-inclusive language, particularly in relation to gender-neutral representations of women, as examined in Studies 2 and 3.

In terms of gender differences, our findings indicate that some disparities can be mediated by gender beliefs as both females and males are influenced in similar ways, but females generally show stronger effects than males. In study 1, high recognition of continued sexism strongly accelerated females' supportive attitudes toward language reform, while the effects for males were minimal. Both females and males with higher recognition of sexism showed improved ability to identify sexist language, but the impact was more pronounced for females. Similarly, in study 3, females with more positive attitudes toward gender equality showed lower expectations to other women achieving similar success as the counter-stereotypical women represented with female-marked nouns in the experiment, while no significant effects were observed for males. These findings highlight that both women' favourable attitudes toward language-inclusivity and resistance to sexist and biased language are more strongly influenced by their egalitarian beliefs compared to men.

However, some gender differences persisted even when females and males showed similar levels of gender beliefs, suggesting deeper motivational and structural distinctions between women and men. In Study 1, even when gender beliefs were controlled, females consistently showed more favourable attitudes toward language reform and gender-inclusive languages than males. In addition, females with higher recognition of continued sexism showed a greater willingness to use gender-inclusive language, while males with similar recognition levels showed lower willingness. In Study 3, perceptions of exemplars in male-dominated professions further illustrated this persistence. All the other variables kept constant, females perceived the exemplars as equally successful across conditions, regardless of the exemplars' sex or representation (gender-neutral default noun vs. gender-marked noun). In contrast, males perceived woman exemplars represented with default nouns as less successful than the exemplars in other conditions, regardless of their own gender beliefs. This bias among males against default representations of counter-stereotypical women highlights a subtle resistance to the symbolic inclusion of women in historically male-dominated semantic spaces. Moreover, having been exposed to woman exemplars represented with default nouns, females with more egalitarian attitudes showed higher expectations for other women achieving similar success, while males with similar attitudes showed lower expectations. This reflects that females may view such successes of woman exemplars as inspiring and indicative of progress toward gender equality, leading to optimism about broader social change. In contrast, males may perceive the gender-neutral representation of women in counter-stereotypical fields as a symbol of the systemic challenges still faced by women in achieving such successes.

These findings provide a foundation for further investigation into the motivations behind the use or rejection of sexist and gender-fair language, particularly in the context of

understanding the interplay between gender differences and gender beliefs. The reconstruction of the Modern Sexism scale and the Neosexism scale in Study 1 offered valuable insights into the nuanced patterns of influence of dimensions of gender beliefs. Specifically, neosexism and empathy consistently shaped participants' behaviour across genders, while recognition or denial of continued sexism demonstrated opposing effects between females and males. These opposing influences highlight how the same belief system can manifest differently depending on gender, reflecting divergent perspectives shaped by social structure. Future research could delve into understanding which gender differences are subject to mediation by gender beliefs and which disparities persist regardless of belief agreement. This knowledge could inform targeted strategies to promote linguistic and social inclusivity. By addressing not only overt resistance but also subtle biases rooted in divergent gender beliefs, such strategies could bridge the gap between female and male perspectives, fostering a broader cultural shift toward gender equality.

6.3 Gender-neutral default form versus female-marked form

Combining the findings of the three studies, this project found the subtle differences in perception between redundant and overt gender-marking. In Study 1, in the section of IASNL-G Chinese - recognition of sexist language - we observed a paradox: why are expressions like 屠呦呦是我国顶尖女科学家 'Tu Youyou is China's top female scientist' and 肇事者是一位女司机 'the person involved in the accident was a female driver' both classified under the same category of sexist language - overt female-marking, yet differ significantly in their perceived levels of sexism?

One explanation lies in the context-dependent interpretation of overt female marking as we pointed out in the discussion of Study 3. In contexts with obvious hostility, such as a car accident, the linguistic practice of emphasising the subject being a female by an overt female-marker is widely recognised as sexist. However, when referring to women in counter-stereotypical roles, many still default to add a female-marker. This subtle gender bias is often taken for granted as a social norm rather than sexism. As the surprising observation in Study 2, even though the gender-neutral default form is the grammatically standard form for representing both women and men, this default form is less acceptable when representing women in male-biased professions. This ingrained bias may explain why, in Study 3, participants with egalitarian gender beliefs did not strongly favour female-marked representations of counter-stereotypical women.

Currently, using female-marked forms to represent successful women in male-dominated fields primarily serves to enhance women's visibility. By ensuring recognition of these women's achievements, the use of female-marked terms acts as a tactical compromise, offering a buffer against potential hostility from some men toward women entering

traditionally male-dominated semantic spaces. Nonetheless, without a balanced approach to feminisation strategies, the continued use of female-marked terms risks reinforcing associations rooted in gender stereotypes, which could inadvertently exacerbate linguistic biases over time.

Due to the scope of this PhD research, the focus has been limited to examining one specific form of gender marking, namely the female marker 女, since they are among the most commonly used expressions. However, if the implicit meanings embedded in terms like *female + profession* have become deeply entrenched across various contexts, it may be wise to seek alternative representations to mitigate the risks of reinforcing such associations. For instance, using a paired format like 颜宁，女，生物科学家 'Yan Ning, female, bioscientist' and 施一公，男，生物科学家 'Shi Yigong, male, bioscientist' could help achieve symmetrical representation while maintaining visibility for women. This approach not only highlights gender but also avoids reinforcing the biases associated with *female + noun* constructions, offering a more balanced and inclusive representation of professional identities.

6.4 The role of gender stereotypes

Based on the previous discussion, it is clear that research on perceptions of asymmetrical gender marking and the exploration of more inclusive representations of women are closely related to the processing of gender stereotypes embedded in nouns.

In this project, Study 2 revealed that gender stereotypes significantly influenced the acceptance of redundantly male-marked forms for men but did not affect the acceptance of default forms for men. In contrast, the acceptance of female default forms and female-marked forms for women showed a reversed pattern. This highlights the phenomenon of *male-as-default* hind in the gender-neutral grammatical structure of Chinese nouns. However, the goal of this research is not merely to identify the *semantic space* of nouns as a factor influencing perceptions. More crucially, it seeks to shift this space, creating a more inclusive linguistic framework.

In addressing asymmetrical gender marking and increasing women's visibility while mitigating potential backlashes, the most critical step lies in alleviating gender bias at its roots. Our findings from Study 3 indicate that even short-term exposure to successful women can elevate expectations for other women, particularly when short-term exposure is paired with long-term exposure (e.g. acquaintance with counter-stereotypical women). Future research could build on this by investigating whether such exposure influences individuals' implicit gender stereotypes. In fact, Study 3 incorporated an Implicit Association Task (IAT) to assess potential shifts in the same participants' implicit gender stereotypes following exposure to the stimuli used in this study. We look forward to gaining insights from these IAT results and comparing them with the explicit attitudes observed, which could deepen our understanding of the interplay between explicit and implicit gender

perceptions. Finally, while this study focused on successful women in stereotypically male-dominated fields, future research should also consider how exposure to men achieving success in stereotypically female professions, along with the use of default and male-marked representations, may influence individuals' explicit and implicit attitudes. Such comparisons could deepen the understanding of gender representations and individuals' perceptions of these representations across diverse contexts, further enriching the study of gender-neutral and gender-marked language and their social impact.

6.5 Impacts of this PhD project

6.5.1 Impacts on academic research

This PhD project marks a pioneering effort in the study of sexist and gender-inclusive language in Chinese, with three groundbreaking contributions. Study 1 is the first to examine attitudes toward sexist and nonsexist language in China and establishes a foundational understanding of how language users' sex, gender beliefs, and perceptions of societal sexism influence their attitudes toward language reform and inclusivity. Study 2 systematically investigates perceptions of gender-neutral and gender-marked nouns when the referent's sex is explicitly indicated. The findings highlight the influence of both nouns' gender stereotypes and individuals' beliefs about equality and inclusivity on the asymmetrical acceptance of gender-marking in Chinese nouns, linking this asymmetry to broader patterns of linguistic sexism. Study 3 explores how representations of counter-stereotypical women (female-marked vs. default nouns) shape perceptions of women's achievements and influence audience self-perceptions. It identifies advantages of female-marked forms in the current societal context while outlining conditions for the broader practice of default nouns in the future, providing a critical foundation for advancing gender-fair language strategies in Chinese. Together, these studies fill a key research gap in the linguistic research of Chinese - a language spoken by about 20% of the global population. They not only advance our understanding of the interplay between language, gender, and social beliefs but also provide valuable insights into the broader implications of linguistic sexism and inclusivity.

Beyond these empirical studies, this project identifies key issues of asymmetrical representations in Chinese (as discussed in Chapter 2) and proposes avenues for future exploration (as discussed in Chapter 3 to 6). These include advancing implicit association

task methodologies, further examining perceptions of gender roles across varied representations, and investigating how the brain processes the social information embedded in nouns and pronouns, with particular attention to the role of individuals' gender beliefs. In this sense, this research serves as both an inspiration and a catalyst for further studies in sexist and gender-fair language in Chinese. Moreover, this project establishes a foundational reference for future exploration into languages closely related to Chinese, such as Japanese and Korean, as well as other grammatically genderless languages such as Turkish or Hungarian. By bridging linguistic, psychological, and cultural contexts, it contributes to the broader fields of linguistics and gender studies, offering methodological framework and theoretical insights for future research in this domain.

6.5.2 Impacts on society

Currently, the only official guidance on regulating sexist language and promoting gender-fair language in Chinese is *The United Nations' Guidelines for gender-inclusive language in Chinese.* While this guideline is valuable, it primarily provides broad recommendations designed for official UN and governmental documents, leaving a significant gap in its applicability to everyday contexts such as media, business advertising, and interpersonal communication. This PhD project offers a cognitive perspective to inform such efforts, providing a foundation for future research that could extend to practical applications. These findings hold the potential to inspire companies, advertisers, and other practitioners to adopt more inclusive language in their work.

During the literature review, we noted that several influential works on gender bias in Chinese and asymmetrical gender marking were authored by men (Sun, 2010; Huang, 2015, Pan, 2024). We acknowledge the crucial contributions of male scholars to advancing

gender equality and recognise their academic capability in this field. Among these, there are exceptional researchers conducting significant studies on sexism within the Chinese context (e.g., Peng, 2022; Peng, Wu, & Chen, 2022).

However, as highlighted in the discussions of Nüshu in section 2.5, Chinese in the sense of the Han Language is deeply entrenched in a patriarchal, male-centred worldview. In this context, the fact that both the principal investigator and the primary supervisors of this PhD project are women underscores the distinct female perspective in research on linguistic sexism and gender-inclusive language research. We draw inspiration from Japanese sociologist Teruko Inoue's definition of women's studies as "academic research *of women*, *by women*, and *for women*" (as cited in Ehara, Yanagida, & Long, 1993, p. 61). Through this project, we aim to amplify women's voices and encourage other women to join us in advancing gender equality in language.

During data collection, I encountered unfounded criticisms of my work and character. Initially, these challenges elicited my anger and uncertainty. However, over time, I learned to analyse these behaviours through the lens of my research findings and relevant literature, using them to identify potential areas for future study. This process has strengthened my resolve to continue exploring linguistic sexism and gender-inclusive language with greater depth and determination.

More often, I was profoundly moved to observe that many participants, particularly young women, began to reflect on issues such as linguistic sexism and gender-inclusive language after engaging with this PhD project. Inspired by Chizuko Ueno, Japan's most prominent feminist sociologist, who introduced the concept of "one person, one

transformation”[56], advocating that every woman should dedicate her efforts to changing at least one man's perspective to promote gender equality (Ueno & Tabu, 2021), I interpret this concept more broadly. I hope that even if a single individual reads even if one section of this PhD thesis, feels inspired, and contributes to advancing gender equality and inclusive language in Chinese, my research will have achieved a meaningful societal impact. As the *Records of the Three Kingdoms* states, “Let no small evil tempt you to act, let no humble good deter your hand”. I firmly believe that even the smallest changes and the faintest voices, when combined, can create a tremendous impact.

This research project has also fostered my personal growth. As a Chinese researcher shaped by years of linguistic training in Western academia, it was only during the development of this PhD proposal that I began to critically examine issues of linguistic sexism in Chinese from linguistic and social psychological perspectives. Initially, a key motivation for my pursuing a PhD was to earn the title of 'Doctor,' a designation free from the constraints of titles associated with age or marital status. I believed that, when circumstances permitted, every woman should pursue a doctorate to transcend these societal labels. However, today, completing this research has reinforced my conviction that no woman should be constrained by any title - this freedom should be universally accessible, not remain a privilege exclusive to a select few such as doctors or professors.

In conclusion, I hope the discussions in my PhD thesis ignite profound introspection and inspire meaningful dialogues in many minds. I hope my findings become a powerful tool, empowering others to advocate for change with conviction and resolve. I hope my work is the spark that kindles a blazing fire, inspiring more and more women to explore this field

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[56] The original text in Japanese is 一人一殺, in Chinese 一人一杀, literally meaning ‘one person, one kill’.

and courageously raise their voices in the pursuit of gender equality. May this research light the way for a brighter, more inclusive future.

Chapter 7 General Conclusion

Addressing a significant research gap, this PhD project examines attitudes toward sexist and nonsexist language in Chinese and explores how gender-neutral and gender-marked representations, especially those featuring the female marker, shape perceptions of social roles. Beginning with an analysis of asymmetrical representations of women in contemporary use of Mandarin and simplified Chinese, this research focuses on younger individuals born between 1980 and 2004 in mainland China and comprises three quantitative studies.

Study 1 marks the first known empirical investigation into attitudes toward sexist and nonsexist language in China. We identified an overall trend indicating that younger individuals exhibited more favourable attitudes toward language reform and gender-inclusive language. Notably, a persistent gender difference emerged in these attitudes, related to participants' recognition of ongoing sexism in today's society. Specifically, a higher recognition of sexism was associated with a greater willingness among females to use gender-inclusive language, whereas males demonstrated a lower willingness. Consequently, this difference widened the gap between female and male's general attitudes toward sexist and nonsexist language. These findings highlight the importance of understanding the distinct motivations that drive women and men to adopt or resist gender-inclusive language in Chinese.

Study 2 represents the first systematic exploration into the acceptability of gender-marked nouns used for professional terms (e.g., nurse or firefighter) when such gender markers are grammatically unnecessary and referentially redundant compared to the standard gender-neutral default nouns (zero-marking). The study found that using default nouns to

represent women in male-dominated fields was less acceptable, whereas redundant female-marked nouns were consistently accepted regardless of the nouns' inherent gender stereotypes. Importantly, this acceptance was not solely driven by the encoded gender stereotypes of gender-neutral nouns but was also significantly influenced by individuals' broader attitudes toward gender equality and language inclusivity. Participants with more supportive social beliefs were more inclined to accept default nouns and less likely to accept redundantly gender-marked nouns, regardless of the referents' sex. The findings provide robust evidence that asymmetrical gender marking in Chinese nouns is closely associated with linguistic sexism.

Study 3 breaks new ground by investigating how different linguistic representations of counter-stereotypical women (female-marked vs. default nouns) influence perceptions of these women, as well as the audience's perceptions of other women and themselves. It provides a comprehensive framework for understanding the interplay between representation strategies, short-term exposure (e.g., biographies), long-term exposure (e.g., personal acquaintance with successful women), and audience characteristics (sex and gender beliefs). Our findings highlight the advantages of using female-marked nouns to represent women in male-dominated fields within the current social climate. Specifically, such representations enhanced the visibility of women in male-dominated fields and mitigated potential backlash, including negative behaviours from males and self-deflating effects among highly egalitarian audiences. However, the study also reveals that under certain conditions, such as the combination of short-term and long-term exposure to successful women, default nouns can be equally effective. Thus, this study lays the groundwork for developing context-sensitive, gender-fair language strategies in Chinese.

Collectively, these studies contribute to bridging theoretical and methodological gaps in sociolinguistics and psycholinguistics, offering valuable insights into the complex relationships between language, gender, and social beliefs especially in Chinese context. By illuminating how nuanced linguistic choices and social beliefs shape perceptions, this work not only advances the academic fields of linguistics and gender studies but also provides actionable knowledge to inform language policy in everyday practices. In doing so, it contributes to broader societal efforts toward linguistic inclusivity and gender equality, inspiring future research and fostering a more inclusive linguistic landscape.

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Appendix 1: The complete questionnaire of gender beliefs

Appendix 1.1 The Modern Sexism Scale

	The Chinese adaptation (as presented in the attitude questionnaire)	**The original English version** (with annotations on the alterations in the Chinese adaptation)
1	当今中国已经没有对于女性的歧视问题了。	Discrimination against women is no longer a problem in the United States. (‘the United States’ was changed into ‘China’ in the Chinese adaptation)
2	女性经常因为性别歧视错失好工作。*	Women often miss out on good jobs due to sexual discrimination. *
3	电视里很少有歧视女性的内容。	It is rare to see women treated in a sexist manner on television.
4	总体来说我们社会对丈夫和妻子是平等对待的。	On average, people in our society treat husbands and wives equally.
5	当今社会男女已经可以达到相同的成就了。	Society has reached the point where women and men have equal achievement.
6	我很理解当代中国女性因为性别不平等而产生的愤怒。*	It is easy to understand the anger of women's groups in America. * (this item was changed into ‘It is easy to understand women's anger with gender inequality’ in the Chinese adaptation)
7	我很好理解为什么女性群体依然很关注女性的发展机会在社会中受限的问题。*	It is easy to understand why women’s groups are still concerned about societal limitations of women’s opportunities. *
8	过去几年中，现实生活中女性的待遇问题并没有政府和新闻媒体里说的那么严重。	Over the past few years, the government and news media have been showing more concern about the treatment of women than is warranted by women’s actual experiences.

*reversed scores for the results

Appendix 1.2 The Neosexism Scale

	The Chinese adaptation (as presented in the attitude questionnaire)	**The original English version** (with annotations on the alterations in the Chinese adaptation)
1	当今中国，职场上对于女性的性别歧视问题已经不存在了。	Discrimination against women in the labour force is no longer a problem. (‘in today’s China’ was added in the Chinese adaptation)
2	我认为目前的就业体系对女性来说是不公平的。*	I consider the present employment system to be unfair to women. *
3	某些特定的领域不需要录取女性，女性也不必去争取这些职位。	Women shouldn’t push themselves where they are not wanted.
4	N/A	Women will make more progress by being patient and pushing too hard for change. (this item was taken out from the Chinese adaptation)
5	我觉得和女领导挺难共事的。	It is difficult to work for a female boss.
6	女性对于两性平等的诉求太夸张了。	Women’s request in terms of equality between the sexes are simply exaggerated.
7	过去几年，女性从社会上得到的好处很多，已经超过她们应得的了。	Over the past few years, women have gotten more from government than they deserve. (‘government’ was changed into ‘society’ in the Chinese adaptation)
8	像医学等花费高又辛苦的大学专业不应该录取女性，因为反正她们很多人工作几年就不做了，就要去照顾家庭和孩子了。	Universities are wrong to admit women in costly programmes such as medicine, when in fact, a larger number will leave their jobs after a few years to raise their children.
9	很多男性为了不让人觉得他性别歧视，就会过度照顾女性。	In order not to appear sexist, many men are inclined to overcompensate women.
10	很多时候公司碍于社会压力，不得不聘用资历不够的女性	Due to social pressures, firms frequently have to hire underqualified women.
11	一个公正的就业体系，会把男性和女性平等看待。*	In a fair employment system, men and women would be considered equal. *

*reversed scores for the results

Appendix 2: Reading passages of exemplars in Study 3

Passage 1 - 消防员 'fire fighter'

Exemplar's true identity: 消防员彭娟 'fire fighter Peng Juan'

Original text as presented in the experiment:
彭娟/彭杰，（女/男）消防员，任职于湘潭市吉安路消防特勤站。能训练、能出警、能指挥，长期活跃在第一线从事灭火和救援工作。无论酷暑寒冬，只要警铃响起，45秒内必定穿戴完毕10多件、总重量超过30斤的消防战斗装备乘车出发。

English translation:
Peng Juan/Peng Jie, a (female/male) firefighter, serves at the Ji'an Road Firefighting and Rescue Station in Xiangtan City. (She/He) is capable of training, dispatching, and commanding, and has been active in the front line of firefighting and rescue work for a long time. Regardless of the scorching heat or bitter cold, as long as the alarm rings, (she/he) can dress in over ten pieces of firefighting gear weighing more than 30 kilograms within 45 seconds, and depart by vehicle.

Passage 2 - 科学家 'scientist'

Exemplar's true identity: 数学家范金燕 'Mathematician Fan Jinyan'

Original text as presented in the experiment:
金燕/金岩，（女/男）科学家，于上海交通大学数学科学院任教。主要研究方向为非线性最优化的理论和方法研究，是科学计算和计算数学的核心问题。研究成果被国内外工程界广泛应用于化学、航空、电力系统、经济规划等领域。

English translation:
Jin Yan/Jin Yan, a (female/male) scientist, teaches at the School of Mathematical Sciences at Shanghai Jiao Tong University. (Her/His) main research direction is the theoretical and methodological study of nonlinear optimisation, which is a core problem in scientific computing and computational mathematics. (Her/His) research achievements have been widely applied in the fields of chemistry, aerospace, power systems, and economic planning, both domestically and internationally.

Passage 3 - 外卖骑手 ‘food delivery rider’

Exemplar’s true identity: 美团外卖骑士长蒋小溪 ‘Meituan Delivery Team Leader Jiang Xiaoxi’

Original text as presented in the experiment:
蒋茜/蒋东，外卖（女/男）骑手，就职于美团外卖。深圳疫情期间带领22人团队坚守岗位，满足居民对生活物资、必需品等的配送需求，维持城市的正常运转。自2018年工作至今，配送历程超过10万公里，曾获得美团深圳送单榜第一名。

English translation:
Jiang Xi/Jiang Dong, a (female/male) food delivery rider, works for Meituan Delivery. During the Shenzhen epidemic, (she/his) led a team of 22 people to stay at their posts, meeting the residents' demands for the delivery of daily necessities and essential items, and maintaining the normal operation of the city. Since 2018, (she/he) has traveled over 100,000 kilometers in (her/his) deliveries and has been awarded first place in the Meituan Shenzhen delivery rankings.

Passage 4 - 飞行员 ‘pilot’ (1)

Exemplar’s true identity: 飞行员余旭 ‘pilot Yu Xu’

Original text as presented in the experiment:
余丽/余力，（女/男）飞行员，八一飞行表演队成员。2009年以优异成绩毕业正式编入作战部队。曾在新中国成立60周年阅兵式担任教-8梯队三中队右二僚机，并在国际海事与航空展等重大活动中展现过高超的飞行技术。

English translation:
Yu Li/Yu Li, a (female/male) pilot, is a member of the August 1st Aerobatics Team. (She/He) was officially assigned to the combat troops after graduating with excellent results in 2009. (She/He) served as the deputy lead pilot in the right wing of the third flight of the JL-8 formation during the 60th anniversary of the founding of the People's Republic of China military parade, and has demonstrated exceptional flying skills in major events such as international maritime and aviation exhibitions.

Passage 5 - 飞行员 ‘pilot’ (2)

Exemplar’s true identity: 飞行员宋寅 ‘pilot Song Yin’

Original text as presented in the experiment:
林珊/林山，（女/男）飞行员，交通运输部东海第一救助飞行队成员。驾驶海上搜救直升机扎根救助一线，执行过近300起救援任务，成功营救超过200名遇险人员。也曾参与“闽连渔66678”着火船救助，神舟九号十号发射应急保障任务等重大项目。

English translation:
Lin Shan/Lin Shan, a (female/male) pilot, is a member of the first East China Rescue Flying Team under the Ministry of Transport. (She) pilots a maritime search and rescue helicopter and has been rooted in the front line of rescue, completing nearly 300 rescue missions and successfully rescuing more than 200 people in distress. (She) has also participated in major projects such as the rescue of the "Minlianyu 66678" burning ship, and emergency support missions for the launch of the Shenzhou-9 and Shenzhou-10 spacecraft.

Passage 6 - 老板 ‘boss’ (1)

Exemplar’s true identity: 企业家王凤英 ‘entrepreneur Wang Fengying’

Original text as presented in the experiment:
王凤/王峰，长城汽车（女/男）老板。积极带领长城汽车从中国汽车制造企业向全球化科技出行公司转型。同时，基于所在行业的深入实践与调研，作为人大代表多次就中国汽车高质量发展提出有效建议。

English translation:
Wang Feng/Wang Feng, (female/male) boss of Great Wall Motors. (She/He) actively leads the company's transformation from a Chinese automobile manufacturer to a global technology travel company. Based on (her/his) in-depth practice and research in the industry, (she/he) has made effective proposals for the high-quality development of China's automobile industry as a representative of the National People's Congress.

Passage 7 - 老板 ‘boss’ (2)

Exemplar’s true identity: 企业家石金博 ‘entrepreneur Shi Jinbo’

Original text as presented in the experiment:
石玲/石斌，李群自动化（女/男）老板。2013年研发出全球首台高性能驱控一体并联机器人，成为上海国际工业博览会的一大亮点。成功突破高性能工业机器人、高速实时视觉检测等技术瓶颈，形成自主知识产权成果20余项。

English translation:
Shi Ling/Shi Bin, (female/male) boss of Li Qun Automation. In 2013, (she/he) developed the world's first high-performance parallel robot with integrated drive control, which became a highlight of the Shanghai International Industry Fair. (She/he) has successfully broken through technical bottlenecks such as high-performance industrial robots and high-speed real-time visual inspection, and has formed more than 20 independent intellectual property rights achievements.

Passage 8 - 警察 ‘police officer’ (1)

Exemplar’s true identity: 特警郭子睿 ‘SWAT Guo Zirui’

Original text as presented in the experiment:
郭琳/郭明，（女/男）警察，任职于国家级反恐部队猎鹰突击队。曾出色完成一系列安保、处突特殊任务，为维护社会稳定作出突出贡献。在长期的艰苦训练下练就了出色的远距离精确狙击技术，可以做到350米外的精确盲狙。

English translation:
Guo Lin/Guo Ming is a (female/male) police officer serving in the National Anti-Terrorism Falcon Commando, a national-level special forces unit. (She/He) has successfully completed a series of security and special tasks, making outstanding contributions to maintaining social stability. Through long-term and arduous training, (she/he) has developed excellent long-range precision sniper skills, capable of accurately blind-firing at a distance of 350 meters.

Passage 9 - 警察 ‘police officer’ (2)

Exemplar’s true identity: 缉毒警宋巍 ‘Anti-drug police Song Wei’

Original text as presented in the experiment:
宋薇/宋伟，（女/男）警察，任职于北京市丰台公安分局刑侦支队禁毒大队。带领探组投身禁毒一线，曾破获重大特大毒品案件近百起，抓获涉毒嫌疑人650余人，缴获各类毒品41公斤，并积极从事对涉毒人员的引导教育工作。

English translation:
Song Wei/Song Wei, a (female/male) police officer, serves in the Narcotics Brigade of the Criminal Investigation Detachment of the Fengtai Public Security Sub-bureau in Beijing. Leading the team, (she/he) has been dedicated to the front line of drug control and has solved nearly 100 major and significant drug cases, arrested over 650 drug suspects, and seized 41 kilograms of various drugs. (She/He) is also actively engaged in guiding and educating individuals involved in drug use.

Passage 10 - 研究员 ‘researcher’

Exemplar’s true identity: 研究员李辉芬 ‘researcher Li Huifen’

Original text as presented in the experiment:
李芬/李飞，（女/男）研究员，任职于中国卫星海上测控部。在航天远洋测控一线钻研航天测控任务数据处理、关键模型的研发工作。在和团队成员的共同努力下，有效解决了长期以来制约海上数据精度的难题，实现技术跨越。

English translation:
Li Fen/Li Fei, a (female/male) researcher, works at the China Satellite Maritime Tracking and Control Department. (She/He) has been dedicated to the research and development of data processing and key models in space-based maritime tracking and control tasks. Through collaborative efforts with (her/his) team, they have effectively solved the long-standing problem of low data accuracy at sea, achieving a technological breakthrough.

Passage 11 - 院士 ‘member of Chinese Academy of Sciences or Engineering’

Exemplar’s true identity: 冶金与金属材料科学家李依依 ‘metallurgy and metal materials scientist Li yiyi’

Original text as presented in the experiment:
李慧/李辉，（女/男）院士，从事冶金与金属材料研究工作。带领团队突破了中国装备制造业中关键材料的生产瓶颈，为三峡水轮机、动车高铁转向架实现国产化，以及核电用大型容器的高质量生产做出了重大贡献。

English translation:
Li Hui/Li Hui, (female/male) member of Chinese Academy of Engineering, works in the field of metallurgy and metal materials research. (She/He) has led a team to break through the production bottleneck of key materials in China's equipment manufacturing industry, making significant contributions to the domestic production of the Three Gorges hydropower turbines, high-speed train bogies, and high-quality production of large nuclear power containers.

Passage 12 - 程序员 ‘programmer’

Exemplar’s true identity: 程序员梁戈碧 ‘programmer Liang Gebi’

Original text as presented in the experiment:
梁碧/梁波，（女/男）程序员，任职于微软中国。身处技术领域多年，不仅创立并领导微软中国云计算创新中心，还见证和参与了微软共有云服务在中国正式商用到本地开发到全过程。目前在微软的云平台上开发区块链技术。

English translation:
Liang Bi/Liang Bo, a (female/male) programmer, works at Microsoft China. With years of experience in the technology field, (she/he) not only founded and led the Microsoft China Cloud Computing Innovation Center, but also witnessed and participated in the entire process of Microsoft's shared cloud services being officially launched, developed locally and so on in China. Currently, (she/he) is developing blockchain technology on Microsoft's cloud platform.

Appendix 3: Ethical Approvals

I confirm that I have the required University of Essex ethical approval for the research conducted as part of my research degree and contained within this thesis, the forms are listed as the following:

Study 1 (Chapter 3 Attitudes toward sexist/nonsexist language in Chinese) and Study 2 (Chapter 4 Asymmetrical gender marking of Chinese personal nouns: when genderless language becomes gender-biased) are approved by Ethics **ETH2021-1111** (p. 260) and **ETH2324-1239** (p. 261).

Study 3 (Chapter 5 A rose by any other name? The impact of gender marking on perception of successful women in counter-stereotypical fields.) is approved by Ethics **ETH2122-0959** (p. 262) and **ETH2324-1238** (p. 263)**.**

Ethics ETH2021-1111: Ms Xiaoduan Fan

Date Created	15 Mar 2021
Date Submitted	07 Apr 2021
Date of last resubmission	12 Apr 2021
Academic Staff	Ms Xiaoduan Fan
Category	Professional Services Staff
Supervisor	Dr Laurel Lawyer
Project	Asymmetrical gender markedness of Chinese personal nouns
Faculty	Social Sciences
Department	Language and Linguistics
Current status	Signed off under Annex B

Ethics application

Project overview

Title of project
Asymmetrical gender markedness of Chinese personal nouns

Do you object to the title of your project being published?
No

Applicant(s)
Ms Xiaoduan Fan

How would you like to submit your application?

Supervisor(s)
Dr Laurel Lawyer

Proposed start date of research
27 Apr 2021

Expected end date
30 Jun 2023

Will this project be externally funded?
No

Will the research involve human participants?
Yes

Will the research use collected or generated personal data?
Yes

Ethics ETH2324-1239: Ms Xiaoduan Fan

Date Created	26 Apr 2024
Date Submitted	26 Apr 2024
Date of last resubmission	10 May 2024
Academic Staff	Ms Xiaoduan Fan
Category	Professional Services Staff
Supervisor	Dr Laurel Lawyer
Project	Asymmetrical gender markedness of Chinese personal nouns
Faculty	Social Sciences
Department	Language and Linguistics
Current status	Signed off under Annex B

Ethics application

Project overview

Title of project
Asymmetrical gender markedness of Chinese personal nouns

Do you object to the title of your project being published?
No

Applicant(s)
Ms Xiaoduan Fan

How would you like to submit your application?

Supervisor(s)
Dr Laurel Lawyer

Proposed start date of research
25 May 2024

Expected end date
10 May 2027

Will this project be externally funded?
No

Will the research involve human participants?
Yes

Will the research use collected or generated personal data?
Yes

Ethics ETH2324-1238: Ms Xiaoduan Fan

Date Created	26 Apr 2024
Date Submitted	26 Apr 2024
Date of last resubmission	10 May 2024
Academic Staff	Ms Xiaoduan Fan
Category	Professional Services Staff
Supervisor	Dr Laurel Lawyer
Project	Neutralisation or Feminisation? That's a question.
Faculty	Social Sciences
Department	Language and Linguistics
Current status	Signed off under Annex B

Ethics application

Project overview

Title of project
Neutralisation or Feminisation? That's a question.

Do you object to the title of your project being published?
No

Applicant(s)
Ms Xiaoduan Fan

How would you like to submit your application?

Supervisor(s)
Dr Laurel Lawyer

Proposed start date of research
28 May 2024

Expected end date
13 May 2027

Will this project be externally funded?
No

Will the research involve human participants?
Yes

Will the research use collected or generated personal data?
Yes

Ethics ETH2122-0959: Ms Xiaoduan Fan

Date Created	02 Mar 2022
Date Submitted	10 Mar 2022
Academic Staff	Ms Xiaoduan Fan
Category	Professional Services Staff
Supervisor	Dr Laurel Lawyer
Project	Neutralisation or Feminisation? That's a question.
Faculty	Social Sciences
Department	Language and Linguistics
Current status	Signed off under Annex B

Ethics application

Project overview

Title of project
Neutralisation or Feminisation? That's a question.

Do you object to the title of your project being published?
No

Applicant(s)
Ms Xiaoduan Fan

How would you like to submit your application?

Supervisor(s)
Dr Laurel Lawyer

Proposed start date of research
25 Mar 2022

Expected end date
31 Jul 2023

Will this project be externally funded?
No

Will the research involve human participants?
Yes

Will the research use collected or generated personal data?
Yes

Will the research involve the use of animals?