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Do women and men use language differently in spoken face-to-face interaction? A scoping review

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Abstract

Although the question of whether women and men speak differently is a topic of hot debate, an overview of the extent to which empirical studies provide robust support for a relationship between sex/gender and language is lacking. Therefore, the aim of the current scoping review is to synthesize recent studies from various theoretical perspectives on the relationship between sex/gender and language use in spoken face-to-face dyadic interactions. Fifteen empirical studies were systematically selected for review, and were discussed according to four different theoretical perspectives and associated methodologies. More than thirty relevant linguistic variables were identified (e.g., interruptions and intensifiers). Overall, few robust differences between women and men in the use of linguistic variables were observed across contexts, although women seem to be more engaged in supportive turn-taking than men. Importantly, gender identity salience, institutionalized roles, and social and contextual factors such as interactional setting or conversational goal seem to play a key role in the relationship between speaker's sex/gender and language used in spoken interaction.

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Highlights

- State of the art at April 2020 of the relationship between speaker's sex/gender and use of linguistic and interactional variables.
- Scoping review of recent studies investigating language use in face-to-face dyadic spoken interactions in Germanic and Romance languages.
- Inconclusive evidence for overall differences between women and men in the use of linguistic and interactional variables.
- Tentative evidence for more supportive turn-taking, i.e., supportive interruptions, cooperative overlap, minimal responses, and head nods, in women than men.
- Theoretical perspectives and methods relate to studies' expectations and eventual findings on sex/gender differences in language use.
- In experimental settings, gender identity salience generates some gender differences in language use, supporting the difference approach.
- Interactional setting, conversational goal, and institutionalized role relate to women's and men's use of various discourses, supporting the dynamic approach.

Content

Introduction

In the context of flaring discussions about sex, gender, and feminism in the second half of the past century, researchers from various disciplines began to study the communication of gender stereotypes and the occurrence of diverse linguistic and interactional variables in men's and women's speech. For instance, studies focused on tentative language use (Broadbridge & Learning, 2003; Dubois & Crouch, 1975; Lakoff, 1973, 1975; McGlone & Pfiester, 2015), swearing (Bayard & Krishnayya, 2001; Stapleton, 2003), intensifiers (Fuchs, 2017), and interruptions (Dindia, 1987; Zimmerman & West, 1975). Many studies found evidence for differences in men's and women's speech (Fitzpatrick et al., 1995; Lakoff, 1973; Mulac et al., 1988; Thomson, 2006). However, findings were not always replicated by other studies, resulting in doubt and criticism regarding established assumptions that women and men use language differently (Aries, 1996; Brouwer et al., 1979; Carli, 1990; James & Clarke, 1993). Recent studies on gendered roles in employment (Ekberg & Ekberg, 2017), transgender communication therapy (Hancock et al., 2015), and the maintenance of gender stereotypes through language use (Beukeboom & Burgers, 2019), indicate a recurring scientific interest in the relationship between sex/gender and language.

The current state of empirical findings on the relationship between speaker's sex/gender and speaker's use of linguistic and interactional variables in spoken interaction is inconclusive. On the one hand, a substantial amount of new research has been conducted, often within an interdisciplinary context that shed new, nuanced light on the question if, and in what contexts, gender differences in language use emerge (Land & Kitzinger, 2011, Palomares, 2009; Stevanovic et al., 2018; Stokoe, 2012). In particular, in the discipline of health care an increasing amount of research focuses on the role of sex/gender in language use, for instance in magazines' health language (Fandrich & Beck, 2012) and physician-patient interactions (Mast et al., 2008; Van den Brink-Muinen et al., 2002). On the other hand, gender stereotypes about women's and men's language use persist: Politeness, hedging, and talkativeness are generally associated with women's language; directness, succinctness, and interrupting are believed to characterize men's language (Stokoe, 2018). These gender stereotypes are generally shared and maintained through language and media, and influence our expectations, understanding, and memory of women's and men's behavior, including women's and men's language use (Ellemers, 2018; Gray, 1992; Stokoe, 2018; Tannen, 1990).

Considering the persistence and impact of gender stereotypes, it is important to study the current empirical knowledge about women's and men's language. Women and men are still perceived and treated differently in social and institutional contexts such as the medical domain, where perceived differences may lead to inequalities and negative (health) outcomes (Arber et al., 2006; Claréus & Renström, 2019; FitzGerald & Hurst, 2017; Goudsmit, 1994). It is yet unknown to what extent language use explains these perceived differences. A first step in answering this practically relevant question is to obtain an updated status quo of empirical evidence with regard to the relationship between speaker's sex/gender and speaker's language used in spoken interaction, and to subsequently contrast these observed patterns with what is stereotypically expected of how women and men use language.

The terms 'sex' and 'gender' are often used interchangeably (Oertelt-Prigione et al., 2010). Sex refers to the biological distinction between women and men, based on chromosomes, hormones, and gene expression. It is frequently used as a dichotomous variable, but some scholars question this dimorphism Blackless et al., 2000). Gender refers to the psychosocial features of people, and involves multiple aspects (i.e., identity, role, relationships, institutional [Johnson et al., 2009]) which are complex in their operationalization. Since some of the reviewed studies focused on the effects of biological sex on language use, and other studies aimed to analyze the construction of gender, both concepts have their own relevance. Therefore, we have chosen to use the combination term sex/gender throughout the current paper. We want to emphasize that we do not aim to perpetuate sex and gender categories as universally homogeneous categories, and that we share the perspective that sex and gender intersect with other social categories in composing one's identity.

Theoretical Perspectives

Throughout the years, five main theoretical perspectives have been proposed to explain the relationship between speaker's sex/gender and speaker's language used in spoken interaction. Firstly, initiated in the second half of the 20th century, *the deficit approach* involves the assumption that women's language reflects women's inferior societal status

(Lakoff, 1973, 1975). Related to this approach is *the dominance approach*, according to which men's and women's language use reflects social power differences. Studies adhering to this approach often suggest that male social dominance is performed through language use, e.g., by means of interruptions (Zimmerman & West, 1975). Then, in the 80s, *the difference approach* entered the discussion, suggesting that differences between women's and men's language use follow sociocultural differences between women and men as two distinct subcultures (Maltz & Borker, 1982; Schieffelin & Ochs, 1986; Tannen, 1990; Thorne, 1993). Studies departing from these three theoretical perspectives often have a priori expectations of finding gender differences in language use.

As a counterreaction to the essentialist idea of gender as a fixed factor inherent to biological sex, the dynamic approach was initiated in the early '90s. According to this approach, gender is not determined by sex, but rather is a social accomplishment constructed through behavior and discourse, and interacts with other categories such as age, social class, and ethnicity. Men's and women's choices to use culturally shaped "masculine" or "feminine" language within certain communication activities or for the purpose of specific conversational goals have been described as 'indexing gender' (Ochs, 1992), 'performing gender' (Butler, 1993), or 'doing gender' (Goffman, 1976; Speer & Stokoe, 2011; West & Zimmerman, 1987). In the 21st century the most eminent perspective on sex/gender and language builds on the dynamic approach by focusing on how women and men use language to (re-)construct and present themselves in interactions in various contexts (Coates, 2016; Litosseliti, 2006).

A last and less commonly given explanation for differences in language use between women and men is the biological approach, which is not associated with a specific period. This view is based on the assumption that evolutionary processes and brain differences are the cause of differences between women and men, for instance in pitch range and vowel duration, and assertive and affiliative behavior (Andersen, 2006; Gleason & Ely, 2002; Hahn et al., 2016; Leaper & Ayres, 2007; Schulte-Rüther et al., 2008; Simpson, 2009). Recent studies, however, have argued that human brains are 'unique mosaics of features' and that brain structures cannot be classified as typical for female or male brains (Joel et al., 2019; Joel et al., 2018).

Previous Reviews

Previous reviews (Canary & Hause, 1993; James & Clarke, 1993) and prominent handbooks have critically reflected on empirical findings with regard to the relationship between speaker's sex/gender and speaker's use of linguistic and interactional variables in spoken interaction (Aries, 1996; Bergvall, 2014; Coates, 2016; Eckert & McConnel-Ginet, 2003; Ehrlich et al., 2014; Holmes & Meyerhoff, 2008; Speer & Stokoe, 2011; Tannen et al., 2015; Talbot, 1998; Weatherall, 2005). Their conclusions indicate that men's language and women's language are often more similar than different, and, confirming the dynamic approach, that gender is constructed through interaction rather than being a fixed factor determined by sex.

At the moment, a systematically conducted search to and synthetization of recent empirical findings on which linguistic and interactional variables are used by women and men is lacking. To the best of our knowledge, the last review of empirical findings on a broad range of linguistic and interactional variables was conducted by Mulac et al. (2001), who aimed to test the gender-as-culture hypothesis. Departing from the difference approach, this hypothesis suggests that women and men have learned to use language differently within the group of their own gender, or "culture," and that linguistic differences reflect style differences between the two "cultures." Mulac et al. (2001) reviewed 30 studies and identified 21 linguistic variables that were found to differ between women and men in two or more studies. However, the studies were not systematically collected, risking a biased selection of studies. Two more recent meta-analyses conducted a systematic search as well, but only focused on a few specific linguistic variables, (i.e., talkativeness, assertive speech, affiliative speech, and tentative language use [Leaper and Ayres, 2007; Leaper & Robnett, 2011]). Therefore, an overview of systematically retrieved recent empirical findings on a broad range of linguistic and interactional variables is necessary. Sample sizes, interaction types (i.e., monologues, dyadic interactions, or group interactions) and modes of communication (i.e., spoken or written) largely vary between previous studies on this topic, which add up to the ambiguous picture of the current state of empirical knowledge. For the sake of clarity and generalizability, the current study confines its scope to dyadic interactions, including

some occasional triadic interactions (e.g., a relative who is present during an interaction between a doctor and a patient).

Aim and Research Question

In addition to providing an overview of relevant findings from the early 2000s, the current review aims to cover various theoretical perspectives and a broad range of linguistic and interactional variables that were empirically examined in the disciplines of communication, linguistics, gender, and health care. Covering these extensive disciplines provides an initial multidisciplinary framework for systematically studying the relationship between speaker's sex/gender and speaker's use of linguistic and interactional variables in spoken interaction in various practically relevant contexts. The research question consists of three parts: (a) which theoretical perspectives, methods, and operationalizations were applied to study women's and men's language use, (b) which linguistic and interactional variables in language use have been studied since 2001 in relation to the sex/gender of the speakers in spoken face-to-face interactions, and (c) what do the findings show about how women and men use language?

Method

Search Strategy

Searches were conducted in six electronic databases from various disciplines: Communication Abstracts, Linguistics and Language Behavior Abstracts (LLBA), PsycINFO, Web of Science, PubMed, and EMBASE. The basic search terms were communication, language, sex, and gender, which were expanded to synonyms and related terms. Search terms were adjusted for each database. The full search strategy can be found in Appendix A.

Selection Criteria

The first search for research studying the relationship between speaker's sex/gender and speaker's use of linguistic and interactional variables in spoken interaction was conducted in January 2019. An updated search was conducted in April 2020. The inclusion criteria (Appendix B) were: (a) the study's main focus is on language use, speech or communication related to the sex/gender of the speakers, (b) the study's outcomes are linguistic and interactional variables, (c) the study is empirical (i.e., involves observational research), (d) the study's material consists of audio-recorded face-to-face dyadic (and a few occasional triadic) spoken interactions involving natural speech , (e) the study's sample involves adult speakers varying in sex or gender identity, including women and men, adults whose gender identity does not match their biological sex as determined at birth, or adults whose biological sex or gender identity does not conform to the man-woman or male/female dichotomy, (f) the studied language is a Germanic language (i.e., English, German, Dutch, Frisian, Dutch African, Swedish, Danish, Icelandic, or Norwegian) or a Romance language (i.e., French, Italian, Spanish, Catalan, Portuguese, or Romanian, as well as geographically related dialects and regional languages [e.g., Sardinian]), to avoid major cultural influences, (g) the article in which the study is published is written in English or Dutch to enable data extraction and synthesis, and (h) the study is published in 2001 or later (i.e., after the latest review on linguistic variables characterizing men's and women's language use was published [i.e., Mulac et al., 2001]). With regard to methodology, all quantitative and qualitative studies meeting the inclusion criteria were included to complement the review's scope.

Study Selection

The obtained references were loaded in the citation management software program Endnote X9. Duplicates were removed following the steps for de-duplication described by Bramer et al. (2016), and all references published before the year 2000 were taken out of the reference list. For both the initial and the updated search, the first selection round consisted of screening the reference title and abstract, and was performed by two researchers seperatedly to ensure reliability. Cohen's κ was calculated to determine interrater reliability between the two raters' judgements. The second selection round involved full-text screening of the references that were identified as possibly relevant based on the title and abstract, and was performed in consultation with the authors' research group.

Data Extraction and Analysis

The data extracted from each included study were the names

of the authors, year of publication, type of study, interactional context, study method and design, operationalization of the linguistic variables, moderator variables, and results. Data extraction was done by an independent second researcher for 25% of the included studies to guarantee the first researcher's accuracy and reliability. Information about the country in which the study was conducted, the type of publication, the study's interactional context, and study's participants was quantitatively reported by means of numerical counts. Based on the data and discussions with scholars from our research group, relevant linguistic subdomains were selected to accommodate the linguistic and interactional variables into coherent and pragmatic categories (Laufer & Nation, 1995; Sacks et al., 1978; Schegloff, 2000; West & Turner, 2010). Thereafter, the studies' findings on the relationship between language use and sex/gender were synthesized according to their divergent theoretical perspectives and the various linguistic categories. The qualitative method of narrative synthesis yields an overview of the most recent findings pertaining to the relationship between language use and sex/gender. The studies were synthesized pursuing the following objectives: (a) to identify the various theoretical perspectives from which studies on the relationship between speaker's sex/gender and speaker's language use in spoken interaction departed, (b) to describe the studies' findings on the use of the linguistic and interactional variables by women and men, and (c) to discuss the associations between the studies' findings and the different theoretical perspectives, interactional settings, and methodological operationalizations.

Including and Excluding References

The first electronic database searches yielded 7,081 references. Duplicates and references published before 2001 were removed, resulting in 3,337 references to be screened on title and abstract. Two researchers independently applied the inclusion and exclusion criteria to titles and abstracts of these 3,337 references. In case of doubt of the reference's relevance, full-text articles were consulted. There was substantial agreement between the two raters' judgements, $\kappa = .775$, $p < .001$. Based on title and abstract, 3,286 references did not meet inclusion criteria or were identified as residual duplicates, resulting in 51 studies to be read in full-text; 32 studies did not meet the inclusion criteria and were removed. A concise hand-search and the use of snowballing did not yield more relevant references. During data extraction four other studies were excluded, resulting in a total of 15 studies to be included in the review.

An updated search in April 2020 yielded 3,707 additional references. After removal of duplicates, 379 references published since 2019 were screened on title and abstract. Again, two researchers independently applied the inclusion and exclusion criteria to titles and abstracts of these 379 references. In case of doubt of the reference's relevance, full-text articles were consulted. There was perfect agreement between the two raters' judgements, $\kappa = 1.00$, $p < .001$. Based on title and abstract, none of the 378 references met inclusion criteria. One last reference was read in full-text, after which it was removed because it did not meet the inclusion criteria. Therefore, no additional studies were included in the review. The overall process of study selection is shown in the flow diagram in the Prisma flow diagram (Figure 1).

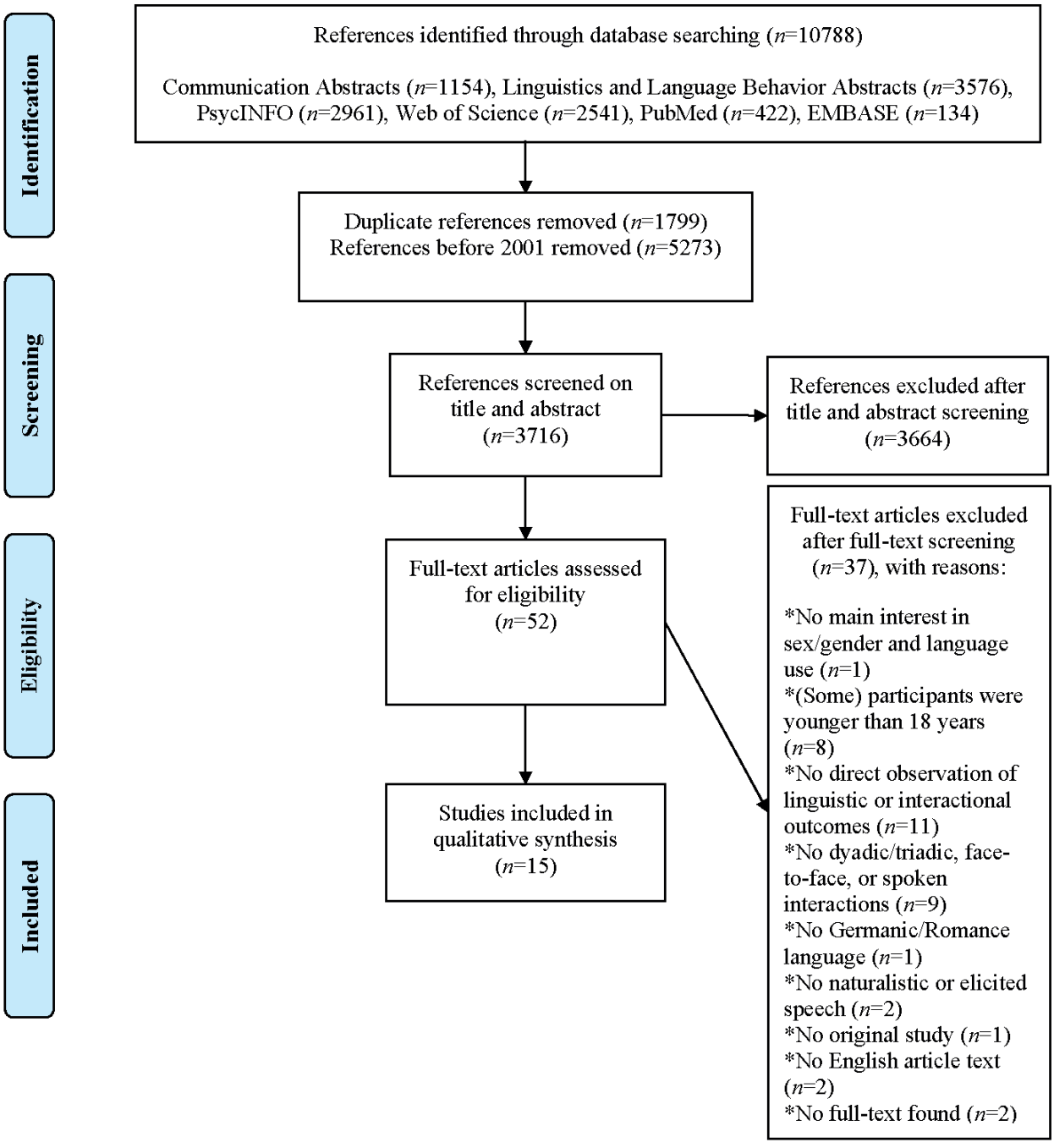
Included Studies

The fifteen included studies were conducted in the United States (n = 6), New Zealand (n = 3), Canada (n = 2), Australia (n = 1), Austria (n = 1), Sweden (n = 1), and the United Kingdom (n = 1). Thirteen studies were published in journal articles, one study was published as part of a dissertation (Pfiester, 2009), and one study was published in a book chapter (Stubbe, 2013). Study designs were either mainly quantitative (n = 13) or mainly qualitative (n = 2; Holmes, 2005; Reznik, 2004). The interactional contexts involved experimental settings (n = 7), casual conversations (n = 4), medical interviews (n = 2), a sociolinguistic interview (n = 1), and testimonies in court criminal trials (n = 1). Sample sizes ranged from 2 to 383 participants, and participants were between 18 and 83 years old. In one study (Hazenberg, 2016) the participant sample included 6 cisgender men, 5 cisgender women, 5 trans men, 5 trans women, 5 queer men, and 5 queer women. All other studies only referred to the categories women and men, or females and males. Appendix C summarizes all studies' methods, operationalizations, and the most important findings.

Results

The fifteen reviewed studies departed from diverse theoretical perspectives, particular hypotheses, and quantitative

Figure 1. Flow diagram of study selection (back to text)



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). *P*referred *R*eporting *I*tems for *S*ystematic Reviews and *M*eta-*A*nalyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

or qualitative research methods, and were conducted in various settings involving specific contextual factors (e.g., conversational goals). In order to synthesize this large variety of approaches across studies, we discuss the findings about the relationship between sex/gender and speaker's language use in five subsections. The subsections cover the various theoretical perspectives and approaches to gender and language. Merely zooming in on theoretical perspectives could not do justice to the extensive amount of specific linguistic and interactional variables assessed across the reported studies in this review. Therefore, a second section provides another perspective on the data by grouping the results into six linguistic and interactional categories, such as talkativeness and turn-taking. Appendix C summarizes all studies' methods, operationalizations, and the most important findings.

Studies Distinguished by Theoretical Perspectives

Firstly, the section on Gender Identity Salience describes four experimental studies in which the effects of gender identity salience, gender identity threat, and self-categorization on participants' language use and communication accommodation were tested, following the difference approach (Hancock & Rubin, 2015; Hannah & Murachver, 2007; Pfiester, 2009; Reid et al., 2003). Secondly, the section on Roles and Context discusses five quantitative studies that focused on the effects of experimental or professional roles on women's and men's manner of interacting. Two studies were conducted in a laboratory setting, testing the dominance approach and dynamic approach (Ashenfelter et al., 2009; Bortfeld et al., 2001), and three studies were conducted in an institutionalized setting (Menz & Al-Roubaie, 2008; Sleath & Rubin, 2002; Waara & Shaw, 2006). The third section, on Gender Construction, describes a study combining qualitative and quantitative methods to analyze gender construction in private casual conversations (Stubbe, 2013), and a study focusing on the construction of gender in straight, trans and queer women and men in the setting of a sociolinguistic interview (Hazenberg, 2016). Additionally, two qualitative studies analysing the construction of gender in workplace interactions are also discussed in this section (Holmes, 2005; Reznik, 2004). These four studies depart from the dynamic approach as well. Lastly, the section on Sex Differences describes two studies departing from a biological approach on sex/gender differences in language use, by observing women's and men's interaction in private casual conversations (Saucier & Elias, 2001) and in a laboratory setting (Singh, 2001).

Gender Identity Salience. Studies departing from perspectives such as gender identity salience theory (Palomares, 2004), communication accommodation theory (Giles, 2016), and self-categorization theory (Turner et al., 1987), generally aim to test the assumption that gender differences in language use emerge as a result of women's and men's gender identity salience, corresponding to the difference approach. Many of such studies are conducted in a laboratory setting, in which factors such as communication partner's sex and identity salience can be manipulated and controlled as independent variables.

In the present review, three laboratory studies departed from the theoretical perspective of Communication Accommodation Theory. This theory assumes that people converge or diverge their (non)verbal communication to the conversation partner's communication for the purpose of decreasing or increasing social differences (Hancock & Rubin, 2015; Hannah & Murachver, 2007; Pfiester, 2009). In these studies, participants interacted with two unknown communication partners, of whom at least one from the opposite sex. Participants talked about specified gender-neutral topics (Hancock & Rubin, 2015), unspecified topics (Hannah & Murachver, 2007), or listed activities and solved multiple-choice questions together (Pfiester, 2009). In Pfiester (2009), participants were primed with one out of three conditions before the start of the second conversation and corresponding task (i.e., a condition to increase stereotype threat in women, a condition to increase stereotype threat in men, or a control condition). In Hancock and Rubin (2015) and Hannah and Murachver (2007), participants were not assigned to specific conditions. Reid et al. (2003) tested the self-categorization theory, which assumes that people define themselves as members of a larger social group. For example, women and men tend to adhere to stereotypical behavioral norms in intergroup social contexts in which gender identity is salient. In Reid et al. (2003), participants were primed with gender identity salience or student identity salience before entering a mixed-sex dyad interaction about specified gender-neutral topics with an unknown communication partner. So, these studies made gender identity salient by including mixed-sex dyads and/or specific conditions in their design.

Except for the finding by Pfiester (2009) that women used

more questions than men, no main effects of sex/gender on language use were found. However, Hannah and Murachver (2007) found that, in a second conversation, men used more words and longer utterances, whereas women used more minimal responses (i.e., audible responses uttered by the listener while the other person is speaking, such as "yeah" and "hmhm") and questions. In the study conducted by Pfiester (2009), women used more hedges (i.e., short phrases which indicate that the speaker does not want to strongly assert his/her statement, such as "maybe") than men in a second conversation. Furthermore, whereas men decreased their use of back-channels over time (i.e., audible responses uttered by the listener which do not constitute an attempt to take the conversational floor, such as "I see" and "yeah"), women increased their use of back-channels from the first to the second conversation (Pfiester, 2009). These findings suggest that gender differences in language use may arise over time, at least in particular situational contexts involving unknown communication partners.

As for the effects of gender identity salience and stereotype threat, Reid et al. (2003) found that women used more tentative language (i.e., tag questions such as "right?", hedges such as "probably", and disclaimers such as "I may be wrong") and spoke longer than men when gender identity was salient. Moreover, Pfiester (2009) found that women under gender stereotype threat used more back-channels than men. With regard to communication accommodation, Hannah and Murachver (2007) found that women were more likely to use a facilitative speech style (i.e., determined by the frequency of minimal responses) than men in the second conversation. Communication partners used fewer minimal responses, fewer tag questions, more words, and longer utterances, when interacting with a facilitative speaker. Pfiester (2009) found that women accommodated more than men, but, again, only in the second conversation. Hancock and Rubin (2015) did not find differences in speech accommodation between women and men, which may be due to the use of trained communication partners. Hancock and Rubin (2015) did report an effect of communication partner's sex on language use: participants made more interruptions and used more dependent clauses when they interacted with a female communication partner.

To summarize, gender differences were found in second conversations in mixed-sex dyads, in conditions of gender stereotype threat, or when gender identity was salient, which all relate to circumstances in which participants were made aware of their gender identity and could define themselves in terms of the larger social group (i.e., women or men). These results are in line with the difference approach. This gender salience may subsequently have led to adherence to gender-stereotypical use of particular linguistic and interactional variables. The one exception is Hancock and Rubin (2015), who reported no differences between women and men in language use. In this study participants interacted for a relatively short time of three minutes in one same-sex dyad and one mixed-sex dyad, which possibly inhibited gender salience and subsequent tendency to adhere to gender-linked language schemata.

Roles and Context. Five studies quantitatively analyzed the effects of contextual factors on language use and nonverbal communication. Instead of considering sex/gender as an a-priori factor influencing one's language use, in particular when gender identity is salient, most of the studies in this section depart from the idea that differences in language use are the result of specific interactional roles and other contextual factors (e.g., gender, ethnicity, and education). This idea corresponds to the dynamic approach (Coates, 2016). Additionally, some studies in this section tested the dominance approach, which assumes that social gender roles or power differences influence one's language use. Ashenfelter et al. (2009) and Bortfeld et al. (2001) experimentally manipulated the roles of the participants, whereas Menz and Al-Roubaie (2008), Sleath and Rubin (2002), and Waara and Shaw (2006) conducted studies in which participants had institutionalized roles in a medical or courtroom setting. So, all five studies investigated language use in interactions in which the speakers have specific interactional roles.

Ashenfelter et al. (2009) tested the male dominance hypothesis (i.e., that men's social dominance and power over women is reflected in differences in interactional behavior [Thorne & Henley, 1975]). Participant's dominance was assessed using a 26 items questionnaire. In hypothetical job interviews, low dominant participants played the role of an interviewee, and high dominant participants played the role of the interviewer. All participants interacted in one same-sex and one mixed-sex dyad, and there were as many low/high dominant women as low/high dominant men. Participants in a laboratory study conducted by Bortfeld et al. (2001) interacted four times in mixed-sex dyads, either with their spouses or with strangers. The setting was a referential communication task in which roles (i.e., director vs. matcher) and topics (i.e., photographs of children vs. abstract geo-

metric tangrams) varied between interactions. Bortfeld et al. (2001) did not base their study on a theoretical perspective. They were interested in the interplay between cognitive, social, and situational factors on women's and men's language use.

Three studies analyzed the language use of women and men in institutional interactions in which interlocutors have predetermined roles (Menz & Al-Roubaie, 2008; Sleath & Rubin, 2002; Waara & Shaw, 2006). In light of the discussion about the relationship between gender, power, and dominance, Menz and Al-Roubaie (2008) analyzed the nature of interruptions in physician-patient interactions in an outpatient clinic in Austria. Sleath and Rubin (2002), on the other hand, did not explicitly depart from a specific theoretical perspective in their study to patients' and physicians' questions about depression or anxiety during primary care consultations in the United States. However, based on the fair amount of contextual variables they included in the analyses, they seem to adhere to the dynamic approach to gender and language. Waara and Shaw (2006) analyzed the first two and half minutes of testimonies in a Swedish courtroom context. Analyses were conducted in light of the dynamic approach, expecting an interplay between gender and other contextual factors such as income, professional status (i.e., police officer vs. civilian), and level of education.

Ashenfelter et al. (2009) found that women made faster and more extensive vertical and horizonal head movements than men. Moreover, the low-dominant participants made faster and more extensive vertical head movements than the high-dominant participants. Since the effects of male sex and high dominance on head gestures did not interact, the male dominance hypothesis was not confirmed in this study. In Bortfeld et al. (2001), men used more disfluent speech than women, in particular more fillers (e.g., "um") and repeats. An interaction between sex/gender and role indicated that men used even more fillers than women in the role of director, especially when discussing photographs of children.

Menz and Al-Roubaie (2008) did not find gender differences for failed and non-supportive interruptions, but they found that female patients and physicians used more supportive interruptions than men. Furthermore, professional status (i.e., interns vs. senior physicians) and role (i.e., patients vs. physicians) were associated with patients' and physicians' interruption patterns. Physicians used more non-supportive interruptions than patients, and patients made more failed interruptions than physicians, in particular with senior physicians. Sleath and Rubin (2002) found no main effects of speaker's sex/gender on language use. However, physicians were more likely to ask closed-ended questions about anxiety in consultations with male patients. Additionally, the contextual factors ethnicity (i.e., non-Hispanic white vs. Hispanic patients), number of prior visits, and patient's emotional health, affected physicians' questions about anxiety. Waara and Shaw (2006) found that male courtroom professionals used more interruptions than female courtroom professionals, in particular with male witnesses. With regard to communication partner's sex, courtroom professionals used more supporting utterances with same-sex witnesses. As for witnesses' language use, it was not the speaker's sex/gender, but the professional status that affected language use, presumably caused by a difference between police officers and civilian witnesses in experience and familiarity with the courtroom context.

To summarize, findings by Ashenfelter et al. (2009) and Menz and Al-Roubaie (2008) did not confirm the dominance approach in which it is assumed that gender differences in language use reflect power differences and social roles of women and men. Conversely, Waara and Shaw (2006) found that male courtroom professionals used more interruptions than female courtroom professionals, which may confirm the dominance approach, but these differences were not tested for significance. When roles in task-oriented interactions were experimentally manipulated, Bortfeld et al. (2001) found that men used more disfluencies than women, especially in the role of director and when discussing photographs of children. Interestingly, participants in this study interacted four times in mixed-sex dyads, which resembles a situation of gender identity salience, as discussed in the previous section. With regard to the dynamic approach, findings by Sleath and Rubin (2002) and Waara and Shaw (2006) indicate that institutionalized roles and specific contextual factors can overrule gender identity salience and subsequent gender differences in language use. Yet, Ashenfelter et al. (2009) and Menz and Al-Roubaie (2008) found that women used more head nods and supportive interruptions than men. In these two studies, the effects of speaker's sex/gender may have overruled the experimentally manipulated roles of job interviewer and job interviewee, and the institutionalized roles of physician and patient. These findings provisionally indicate that women are more cooperative in their language use, in different contexts, and in various roles.

Gender Construction. Four studies focused on the construction of speaker's sex/gender through interaction in sociolinguistic interviews (Hazenberg, 2016), private casual conversations (Stubbe, 2013), or work-related conversations (Holmes, 2005; Reznik, 2004). In these studies, gender is considered to be fluid and changeable within various contexts with divergent interactional purposes. Like the quantitative studies discussed in the previous section, the studies in this section also depart from the dynamic approach to gender and language, but conduct a more qualitative analysis (Coates, 2016).

Next to sex/gender, Stubbe (2013) focused on the contextual factor ethnicity, and analyzed language use in same-sex private conversations between Pakeha women and men and Maori women and men, who all spoke New Zealand English. The most recent study in our review is the sociolinguistic interview study conducted by Hazenberg (2016). In this study, the author analyzed the language use of young Canadian trans women and men, and queer women and men. Topics of conversations were unspecified, but the interviewer elicited some emotionally neutral topics such as travelling. Taking social and contextual factors and interlocutors' interactional goals into account, Holmes (2005) studied the mentoring strategies of female and male managers in 20 workplace interactions in different organizations in New Zealand. Reznik (2004) analyzed the nature of interruptions in three minutes of an interaction between two colleagues (one woman and one man). The study departed from the performative theory of gender that suggests that gender is not a fixed category, but rather is socially constructible through behavior and interaction (Butler, 1988).

Stubbe (2013) found that Pakeha men used most verbal feedback overall, followed by Pakeha women, Maori men, and Maori women. Additionally, regardless of ethnicity, cooperative overlap occurred somewhat more frequently in female dyads, whereas minimal responses were slightly more common in male dyads. Furthermore, most minimal responses in female dyads (in particular in Pakeha dyads) were supportive in nature, whereas most minimal responses in male dyads were neutral. When combining all instances of cooperative overlap and supportive minimal responses into one category (i.e., explicit supportive high-involvement feedback), Stubbe (2013) found that women, again in particular Pakeha women, used more explicit supportive feedback responses than men. Furthermore, as for the placement of minimal responses, it was found that minimal responses uttered at non-boundary points, so during a stream of talk, were mostly supportive in nature (as compared to neutral minimal responses). Again, this pattern was mainly present in the dyads with Pakeha women. Verbal feedback was mostly given in conversations in which both speakers were highly involved in the topical construction of the interaction, and in which topics were more personal, as compared to conversations in which one of the speakers controlled the interaction, and in which topics were rather neutral. Laughter, a nonverbal form of supportive feedback, occurred in all interactions and did not differ between women or men. Stubbe (2013) interpreted the study's findings in light of a broad functional perspective, suggesting that speakers have a range of interactional and multi-functional recourses available and that they choose the form that is most appropriate within the ongoing interaction. Additionally, Stubbe (2013) described how the co-construction of factors such as gender and ethnicity is associated with differences in language use, and that "doing gender" is only one aspect of "doing identity".

Hazenberg (2016) found that trans men used most intensifiers overall, followed by queer women, queer men, trans women, straight women, and straight men. Striking differences between straight women and straight men were the preferred use of "pretty" over "so" by men, and the preferred use of "so" over "pretty" by women. Queer women and queer men also preferred the use of "so" over "pretty", whereas trans women and trans men used "pretty" and "so" almost equally often. Furthermore, straight women had the highest centre of gravity (i.e., the weighted average frequency of energy expended in the production of the speech segment /s/) followed by queer women, trans women, queer men, trans men, and straight men. The findings may reveal stereotypes of gendered distinctions in communication. This would indicate that speakers tend to use specific linguistic features to adhere to "masculine" or "feminine" language norms when expressing their social gender identity.

Holmes (2005) identified five mentoring strategies, of which three strategies could be considered a stereotypically "feminine" style of mentoring (i.e., the approving strategy, the advising strategy, and the indirect coaching strategy), and of which two strategies could be considered a stereotypically "masculine" style of mentoring (i.e., the procedural strategy, and the corrective strategy). The qualitative analysis showed that these five strategies were not exclusively associated with women or men, and demonstrated how doing mentoring or leadership and doing gender can effec-

tively be reconciled. Reznik (2004) analyzed one data fragment in which the interlocutors discuss downloading music files from the internet and some other topics. In the fragment, five interruptions were made, all by the female speaker. Two of the interruptions were cooperative, whereas the other three interruptions were competitive. Although the analysis merely covered three minutes of one conversation, Reznik (2004) aimed to demonstrate that both gender and power are fluid and can be considered performative in the interactional context. Feminine and masculine mentoring strategies and conversational power can be exploited by both female and male speakers, varying between different interactional contexts and purposes.

To summarize, taking into account social and contextual factors and speakers' conversational purposes, the studies in this section analyzed how speakers construct their gender identity by making use of the extensive range of linguistic and interactional variables and strategies. By using specific linguistic forms, speakers can construct the gender identity they want to convey; for instance a gender identity that fits masculine or feminine norms (Hazenberg, 2016). With regard to another important aspect within the dynamic approach, findings by Stubbe (2013) show how the construction of gender interacts with other varying social categories, such as speaker's ethnicity. In work-related settings in which institutionalized roles and power differences are present, Holmes (2005) and Reznik (2004) concluded that traditionally masculine linguistic behavior (e.g., a corrective mentoring strategy and competitive interruptions) should not be considered as exclusively used by male speakers. These conclusions suggest that gender identity salience does not necessarily generate gender differences in language use, at least not in non-experimental settings in which other social and contextual variables have an important influence as well. The studies discussed in the previous section used quantitative methods to measure the effects of roles and contextual factors on language use. The methods discussed in the current section were rather qualitative, and were more focused on the construction of gender through language use. These studies aimed to answer the question of how gender identities are constructed by women and men through language use, without statistically comparing the use of linguistic and interactional variables. Nonetheless, the quantitative results found by Stubbe (2013) showed that women used significantly more supportive minimal responses and cooperative overlap than men. This finding is in line with the findings by Ashenfelter et al. (2009) and Menz and Al-Roubaie (2008) indicating that women might more engaged in supportive turn-taking than men.

Sex Differences. The last two studies (Saucier & Elias, 2001; Singh, 2001) departed from the biological approach on gender and language, according to which differences in language use may reflect differences in women's and men's brains. Saucier and Elias (2001) observed and analyzed women's and men's hand gestures in private casual conversations, departing from evolutionary biological theories. They coded whether participants gestured with their right or left hand, whether they spoke or listened during gesturing, and whether the gesture was a free movement or a self-touching movement. The laboratory study by Singh (2001) did not explicitly depart from a theoretical perspective with regard to the relationship between sex/gender and language use. Yet, the author mentions potential differences between women and men in their language organization in the brain, which may result in differences in spoken conversation. By means of the word-frequency measurement approach, which is based on the idea that speech follows some particular statistical laws, word-frequency and lexical richness were directly compared in female and male participants. Participants were asked questions about neutral and informal topics (e.g., hobbies and current activities) by an unknown communication partner.

Saucier and Elias (2001) did not find any main effects of speaker's sex/gender on hand gestures. However, in the male participants some patterns emerged that were absent in the female participants. With regard to gesturing hand and interactional role, men gestured more with the right hand when speaking and more with the left hand when listening. As for gesturing hand and type of gestures, men made more free movements with the right hand and more self-touching movements with the left hand. Saucier and Elias (2001) interpreted their findings in the light of potential biological sex differences in cerebral functional lateralisation. In the study conducted by Singh (2001), women and men did not differ in a variety of vocabulary and type-token ratios. However, men used longer phrases and more new or alternative words (i.e., were lexically richer) than women. Additionally, whereas rates of nouns and adjectives were somewhat higher in men, women tended to use more pronouns and verbs.

To summarize, the two studies discussed in this section were conducted in light of the idea that differences between women's and men's brains may produce differences in lan-

guage use, in particular hand gesturing patterns and lexical richness. Participants' cognitive functions and brain structures were not examined in these studies, leaving it unclear whether the observed differences were the result of brain differences between the sexes. In contrast to studies departing from the dominance approach, difference approach, and dynamic approach, Saucier and Elias (2001) and Singh (2001) considered potential differences in language use as a result of merely biological sex, without taking the psychosocial aspects of gender into account. The absence of a discussion of social and contextual factors, such as communication partner's sex and conversation length (Singh, 2001) or age, topic, and the relationship between interlocutors (Saucier & Elias, 2001), make it difficult to compare these two studies with the studies discussed in the previous sections.

Linguistic and Interactional Variables

Next to departing from various theoretical perspectives, the included studies cover a considerable number of linguistic and interactional variables. In the present review, and based on the data and linguistic literature, the variables were accommodated in six categories (Laufer & Nation, 1995; Sacks et al., 1978; Schegloff, 2000; West & Turner, 2010): (a) *talkativeness and lexical richness*, (b) *turn-taking*, (c) *turn production disfluencies*, (d) variables realizing *modality* and *modifiers*, (e) *questions*, and (f) *nonverbal behavior and paralanguage*. In this second section, we have grouped the evidence across the reported studies with regard to gender differences for each of the linguistic categories. Appendix C provides an overview of the most important findings for the investigated linguistic and interactional variables.

Talkativeness and lexical richness. Six studies included general quantifications of talkativeness or lexical richness in their analyses (Bortfeld et al., 2001; Hancock & Rubin, 2015; Hannah & Murachver, 2007; Reid et al., 2003; Singh, 2001; Waara & Shaw, 2006). Singh (2001) found that men formed longer phrases and used more new words than women. As for variables indicating lexical density, one of the components of lexical richness, Singh (2001) found that men used more nouns and adjectives, and that women used more pronouns and verbs. Conversely, Hancock and Rubin (2015) did not find gender differences in the use of pronouns or self-references. As for talkativeness, Bortfeld et al. (2001), Hannah and Murachver (2007), and Waara and Shaw (2006) did not find differences between women and men. Two studies reported differences in specific experimental conditions; when primed with gender salience, women spoke longer than men (Reid et al., 2003), and men used more words and longer utterances than women in the second mixed-sex conversation (Hannah & Murachver, 2007).

Turn-taking. Six studies examined the use of interruptions, albeit with varying operationalizations (Hancock & Rubin, 2015; Hannah & Murachver, 2007; Menz & Al-Roubaie, 2008; Reid et al., 2003; Reznik, 2004; Waara & Shaw, 2006). Interruptions often occur in the form of overlapping speech, which was studied as a separate interactional variable in four studies (Bortfeld et al., 2001; Hannah & Murachver, 2007; Stubbe, 2013; Waara & Shaw, 2006). Six studies investigated supportive feedback, performed by the use of various interactional variables such as minimal responses (Hannah & Murachver, 2007; Stubbe, 2013), back-channeling (Menz & Al-Roubaie, 2008; Pfiester, 2009), verbal reinforcers (Reid et al., 2003), and supportive utterances (Waara & Shaw, 2006). Whereas most studies did not find differences, one study found that women used cooperative overlap more than men (Stubbe, 2013), and Menz and Al-Roubaie (2008) found that women made more use of supportive interruptions. Waara and Shaw (2006) observed that male courtroom professionals interrupted more than female courtroom professionals, and that courtroom professionals used more supportive utterances with same-sex witnesses. However, these differences were not tested for significance. Likewise, all five interruptions in the fragment that was analyzed by Reznik (2004) were made by the female speaker. Still, neither this small number nor the study's aim imply that women use more interruptions than men. Furthermore, some studies' findings suggested differences between women and men in giving feedback, in particular in the type of minimal responses (Stubbe, 2013), more use of minimal responses by women in the second conversation (Hannah & Murachver, 2007), and more back-channels by women in the second conversation when primed with gender stereotype threat (Pfiester, 2009). As for the communication partner's sex, Hancock and Rubin (2015) found that both women and men made more interruptions when interacting with a female communication partner, and Waara and Shaw (2006) observed that male courtroom professionals more often interrupted male witnesses than female witnesses.

Turn-production disfluencies. Five studies investigated turn production disfluencies (Bortfeld et al., 2001; Hancock & Rubin, 2015; Pfiester, 2009; Reid et al., 2003; Waara &

Shaw, 2006). Only one of these studies found a gender difference, namely, that men produced more disfluencies, in particular fillers and repeats (Bortfeld et al., 2001). No gender differences were found in Hancock and Rubin (2015) and Pfiester (2009) in the use of fillers and filled pauses, in Reid et al. (2003) in the use of hesitations, and in Waara and Shaw (2006) in the use of pauses and pause fillers.

Modality and modifiers. Six studies analyzed the use of modality, which refers to variables indicating a degree of certainty or possibility, and modifiers, which are variables that modify the meaning of an utterance by adding explanation, emphasis, or extra information (Hancock & Rubin, 2015; Hannah & Murachver, 2007; Hazenberg, 2016; Pfiester, 2009; Reid et al., 2003; Waara & Shaw, 2006). Pfiester (2009) found that women used more hedges in the second conversation, Reid et al., (2003) found that women used more tentative language use when gender identity was salient, and Hazenberg (2016) found that women and men used different types of intensifiers. No gender differences were found either in Hancock and Rubin (2015) in the use of tag questions, hedges, justifiers, dependent clauses, negations, and intensive adverbs, or in Hannah and Murachver (2007) in the use of tag questions, or in Waara and Shaw (2006) in the use of hedges. With regard to the communication partner's sex, Hancock and Rubin (2015) found that speakers used more dependent clauses when interacting with a female communication partner.

Questions. The use of questions was analyzed in four studies (Hannah & Murachver, 2007; Pfiester, 2009; Reid et al., 2003; Sleath & Rubin, 2002). Findings in one study suggested more use of questions (including tag questions) by women than men overall (Pfiester, 2009), and Hannah and Murachver (2007) found that women used more questions (excluding tag questions) than men in the second conversation. Reid et al. (2003) and Sleath and Rubin (2002) did not find differences between women and men in asking questions. However, regarding the communication partner's sex, physicians used close-ended questions more often with male patients than with female patients (Sleath & Rubin, 2002).

Nonverbal behavior and paralanguage. Eight studies examined nonverbal behavior or paralanguage (Ashenfelter et al., 2009; Hancock & Rubin, 2015; Hannah & Murachver, 2007; Hazenberg, 2016; Pfiester, 2009; Reid et al., 2003; Saucier & Elias, 2001; Stubbe, 2013). No evidence was found for overall gender differences in laughter (Reid et al., 2003; Stubbe, 2013). With regard to gestures, Saucier and Elias (2001) observed asymmetries in manual gesturing in men but not in women, and Ashenfelter et al. (2009) found that women made faster and more extensive vertical and horizontal head movements than men. Furthermore, women and men were found to differ in vocal quality, with women pronouncing the discourse particle "so" with a higher centre of gravity than men (Hazenberg, 2016). Hancock and Rubin (2015) and Hannah and Murachver (2007) did not find gender differences in speech accommodation, but Pfiester (2009) found that women accommodated more than men, although only in the second conversation and when objectively measured.

Lastly, Holmes (2005) identified five mentoring strategies. Each one is characterized by multiple variables from the linguistic categories mentioned above, such as minimal responses, discourse markers and pronouns. Although the strategies can be used by both women and men, three of these strategies are generally considered a feminine style of mentoring: (a) the approving strategy, characterized by giving compliments, repeats, positive feedback, and minimal responses; (b) the advising strategy, characterized by the use of discourse markers and modifiers; (c) the indirect coaching strategy, characterized by the use of discourse markers, hesitations, hedges, and the pronoun "we". The two other strategies are generally considered a masculine style of mentoring: (d) the procedural strategy, characterized by questions, comments, self-references, distant pronouns, and little explicit responses; (e) the corrective strategy, characterized by questions, exclamations, comments, tag questions, and minimal responses.

Discussion

The present paper has systematically retrieved and reviewed fifteen empirical studies from different theoretical perspectives investigating the relationship between sex/gender and language use in face-to-face interactions, and provided an overview of recent empirical findings on a broad range of linguistic and interactional variables. A few gender differences in language use emerged in experimental settings in which gender identity was salient, in second mixed-sex conversations, or when speakers were constructing their gender identity through language use. Some findings point to institutionalized roles and social and contextual variables that may overrule gender identity salience and subsequent gender

differences in language use. The inconclusive findings can be explained by the different theoretical perspectives and subsequent diversity of methods used by the studies, and the variety in operationalizations of the linguistic and interactional variables. Implications for theory and the role of gender in specific linguistic and interactional variables are discussed below.

Theoretical Perspectives

The fifteen studies departed from different theoretical perspectives, involving various objectives, hypotheses, and research methods. With regard to gender differences in social roles and power, which constitute a central assumption in the dominance approach, the review's findings did not provide evidence for more dominant language use in men. Similarly, no evidence was found for the biological approach on sex/gender and language use, which supports recent conclusions that women's and men's brains do not largely differ (Joel et al., 2018, 2019). In some laboratory studies, gender differences were found when gender identity was salient, in conditions of gender stereotype threat, or in second conversations in mixed-sex dyads. These findings corroborate assumptions from the difference approach that women and men belong to distinct social subcultures that have their own language (e.g., Maltz & Borker, 1982; Schieffelin & Ochs, 1986). However, findings from some non-laboratory studies indicate that institutionalized roles and other social and contextual factors can overrule gender identity salience and subsequent gender differences in language use. The finding that women and men can actively construct their own identity through language use supports the dynamic approach to gender and language (e.g., Coates, 2016; Litosseliti, 2006).

It is interesting to note that some studies' findings on gender differences in language use solely occurred in specific conditions such as experimentally manipulated gender stereotype threat (Pfiester, 2009) or gender identity salience (Reid et al., 2003), or at specific times (e.g., in the second conversation, Hannah & Murachver 2007; Pfiester, 2009). Hannah and Murachver (2007) suggest that participants might be more likely to hold on to cues and to accommodate their language use to the communication partner's language use when interacting with strangers in unfamiliar settings. In a second conversation, however, participants have become more familiar with the context and their communication partner, resulting in automatically applying their usual speech style (p. 277-278).

Some of the reviewed studies observed differences in language use that were not associated with speaker's sex/gender, but with other factors, such as communication partner's sex (Hancock & Rubin, 2015; Sleath & Rubin, 2002; Waara & Shaw, 2006). Likewise, Menz and Al-Roubaie (2008) reported that factors such as position (i.e., physician vs. patient) and status (i.e., intern vs. senior physician) affected language use. Physicians used more non-supportive interruptions than patients. Additionally, patients made more failed interruptions than physicians, in particular when the physician was a senior. Waara and Shaw (2006) observed an effect of courtroom experience and professional status on language use. Compared to civilians, police officers used more pause fillers and a different overall speech style. This finding is in line with previous results reported by O'Barr and Atkins (1980) who studied witnesses' language use in American criminal court trials. O'Barr and Atkins (1980) found that the use of variables characteristic of women's language as described by Lakoff (1975) was in fact more related to social status, occupation, and experience than to speaker's sex/gender. O'Barr and Atkins (1980) proposed to rename women's language as "powerless language" that is not necessarily characteristic of men's or women's speech.

Lastly, when looking beyond the homogeneity of the terms women and men, the review's findings indicate that an individual is not just "a woman" or "a man", but that sex/gender intersects with other social categories (Crenshaw, 1989). In the studies by Hazenberg (2016), Stubbe (2013), and Waara and Shaw (2006), it is adequately shown that sex/gender is one of the many social variables that compose one's identity. Overall, the review's findings demonstrate that theoretical perspective and interactional setting matter in expecting, finding, and subsequently interpreting gender differences in language use.

Linguistic and Interactional Variables

Some linguistic and interactional variables have previously been stereotypically associated with women's language use (e.g., talkativeness, hedges, tag questions, politeness, disfluency, and modifiers) whereas others have been stereotypically associated with men's language use (e.g., profanity, direct language, and interruptions [Haas, 1979; Stokoe, 2018; Talbot, 2008]). In contrast to these stereotypes, the review's

findings hardly provide support for associations between the use of linguistic and interactional variables and speaker's sex/gender.

In the previous review conducted by Mulac et al. (2001), the researchers classified gender-discriminating language variables (i.e., variables that differentiated gender in two or more studies) into three categories. If the variable was used more by men or women in all studies in which the variable was investigated, it was categorized as respectively male or female. If some studies reported that the variable was more used by men and other studies reported more use of the variable by women, the researchers classified the variable as 'equivocal'. Applying this categorization by Mulac et al. (2001) to our findings, none of the linguistic variables in our review could be categorized as male or female. The variable questions differentiated gender in two experimental studies (Hannah & Murachver, 2007; Pfiester, 2009), but two other studies' findings on this linguistic variable did not provide evidence for gender differences in asking questions (Reid et al., 2003; Sleath & Rubin, 2002). Yet, when we look at the data and the six categories from a broader perspective, we might tentatively conclude that women are more engaged in supportive turn-taking than men. Supportive turn-taking expresses engagement with the ongoing interaction while retaining the flow of the communication and taking all interlocutors' interests into account. In various contextual settings involving divergent roles and other social and contextual factors, women used more supportive interruptions (Menz & Al-Roubaie, 2008), more cooperative overlap and supportive minimal responses (Stubbe, 2013), more minimal responses (Hannah & Murachver, 2007), more back-channel responses (Pfiester, 2009), and faster and more extensive head nods that might express affirmation (Ashenfelter et al., 2009) than men. We found no evidence for consistent differences on other linguistic variables in the present review.

Limitations and Future Directions

The current review focused on studies investigating dyadic spoken interactions, meaning that empirical findings on men's and women's speech in monologues, group interactions, and written interaction remained out of scope. Likewise, to avoid complex interactions with major cultural influences, the current review concentrated on Germanic and Romance languages, leaving a generous amount of research focusing on other languages out of scope. Furthermore, almost all reviewed studies were conducted in English speaking countries, except for two studies that were conducted in Austria and Sweden. Although this relative homogeneity in research data reduces the influence of culture on the findings, it limits the review's conclusions to Germanic languages and relatively prosperous Western contexts. A synthetization of a large number of studies investigating different communication modes, varying group sizes, and multiple languages from various cultures in one paper would be unfeasible, and would lead to even more trouble in synthesizing the great diversity in operationalizations and findings. Future reviews could focus on men's and women's language use in other languages and new interactional settings.

The divergent operationalizations of the linguistic variables made it difficult to synthesize the studies' findings, and might partially explain the inconclusive evidence. For example, Menz and Al-Roubaie (2008) reported more use of supportive interruptions by women, whereas Hancock and Rubin (2015) and Hannah and Murachver (2007) reported no differences between women and men in interruptions, without differentiating between supportive and non-supportive interruptions. More consistency in operationalization in future research might yield a more coherent picture of the relationship between sex/gender and language use. Recognizing the significance of the dynamic approach to gender and language, we suggest researchers in the field to be as exact as possible when operationalizing the linguistic and interactional variables of interest. The variety in nature and function of linguistic variables can be acknowledged by distinguishing between, for instance, supportive and non-supportive interruptions, tag questions and questions, neutral and supportive minimal responses, and various intensifiers. Furthermore, specific operationalizations (e.g., a clear definition with multiple examples) will benefit studies' reliability and will facilitate replication.

At first sight, this literature review did not observe divergent patterns when comparing dyad composition or publication characteristics (Anderson & Leaper, 1998; James & Clarke, 1993; Leaper et al., 1998; Leaper & Ayres, 2007). In order to analyze potential moderating factors such as studied language, dyad composition, conversation length, and study sample in more detail, we suggest to conduct a meta-analysis in the way it was done by Leaper and Robnett (2011). A substantial amount of related research has been conducted in the medical domain, in which validated coding systems

such as RIAS (Roter, 1991) are used to analyze instrumental and affective aspects of communication behavior (e.g., giving information or showing concern [Bertakis & Azari, 2012; Hall & Roter, 2002; Sandhu et al., 2009; Van den Brink-Muinen, 2008]). These coding systems contain fixed protocols and extensive coding schemes with a few subcategories in which relevant variables such as nonverbal behavior and back-channelling are coded. Unfortunately, such studies were not captured with our search strategy, because the few relevant variables were not mentioned in the studies' abstracts. Additionally, our systematic searches did not yield unpublished studies, making it difficult to circumvent the file-drawer issue.

Lastly, the choices for the six categories into which the linguistic variables were classified were based on the data, consultations with fellow researchers, and relevant linguistic subdomains (Laufer & Nation, 1995; Sacks et al., 1978; Schegloff, 2000; West & Turner, 2010). We are aware that our classification is not definitive and that other studies could improve it. Nevertheless, we believe that the presented overview of linguistic and interactional variables could serve as a starting point for future coding schemes and content analyses of women's and men's language use in various contexts.

The inconclusiveness of the empirical findings may be due to various operationalizations of the linguistic and interactional variables. Albeit, the inconclusiveness of the findings is more plausibly a result of the diversity of the studies' theoretical perspectives, purposes, and contextual settings. Our review has shown that an extensive number of linguistic and interactional variables has been studied in the past twenty years from various theoretical perspectives involving specific research aims and methods. The different approaches make it challenging to replicate previous findings. Nevertheless, the variety of approaches demonstrates that the relationship between speaker's sex/gender and language used in spoken interaction is a complex one, and that it is presumably moderated by study's theoretical purposes and contextual factors. We recommend researchers on this topic to make their theoretical perspectives and aims, and the study's social and contextual variables explicit, and to discuss the potential moderating effects of these factors on the study's findings. By integrating empirical findings from various approaches as initiated in the present scoping review, we can substantially improve our understanding of the relationship between sex/gender and language use.

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Appendix A. Search strategies (back to text)

Communication Abstracts

S1	SU communication OR linguistics OR language OR gender identity OR sex OR sex factors OR sex roles	132,599
S2	AB (communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR "verbal behavior" OR language OR linguistic* OR wording* OR "word use" OR "language use" OR "language variation" OR "linguistic variation" OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*) N4 (gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR woman OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping)	3,834
S3	TI (communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR "verbal behavior" OR language OR linguistic* OR wording* OR "word use" OR "language use" OR "language variation" OR "linguistic variation" OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*) OR KW (communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR "verbal behavior" OR language OR linguistic* OR wording* OR "word use" OR "language use" OR "language variation" OR "linguistic variation" OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*)	71,349t
S4	TI (gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR women OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping) OR KW (gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR woman OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping)	14,748
S5	S3 AND S4	2,894
S6	S2 AND S5	1,316
S7	S1 AND S6	1,154

Linguistics and Language Behavior Abstracts

S1	mainsubject(communication OR linguistics OR language OR gender identity OR sex OR sex factors OR sex roles)	403,173
S2	ab(communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR "verbal behavior" OR language OR linguistic* OR wording* OR "word use" OR "language use" OR "language variation" OR "linguistic variation" OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*) AND ab(gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR woman OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping)	29,183

S3	ti(communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR "verbal behavior" OR language OR linguistic* OR wording* OR "word use" OR "language use" OR "language variation" OR "linguistic variation" OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*) OR if(communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR "verbal behavior" OR language OR linguistic* OR wording* OR "word use" OR "language use" OR "language variation" OR "linguistic variation" OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*)	272,828
S4	ti(gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR women OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping) OR if(gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR woman OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping)	16,102
S5	S3 AND S4	6,822
S6	S2 AND S5	4,588
S7	S1 AND S6	3,576
	PsycINFO	
S1	exp *Communication/ OR exp *Linguistics/	311,524
S2	exp *Gender Identity/ OR exp *Sex/ OR exp *Sex roles/	124,084
S3	S1 AND S2	6,648
S4	(communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR verbal behavior OR language OR linguistic: OR wording: OR language variation OR linguistic variation OR discourse OR discursive OR discourse marker: OR speech OR talk OR sociolinguistic:).ti,ab.	777,678
S5	("word use" OR "language use").ti,ab.	4,401
S6	S4 OR S5	777,783
S7	(gender OR gender identity OR gender ideology OR gender ideologies OR gender factor: OR gender role: OR sex OR sex factor: OR sex role: OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR woman OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype: OR stereotyping).ti,ab.	941,92
S8	S6 AND S7	141,447
S9	S3 AND S8	2,961
	Web of Science	
S1	WC=(Communication OR Language &Linguistics OR Linguistics OR Psychology OR Sociology OR Women's Studies)	3,011,267

S2	TS=((gender NEAR/3 communicat*) OR (gender NEAR/3 counselling) OR (gender NEAR/3 counseling) OR (gender NEAR/3 conversation) OR (gender NEAR/3 "verbal behavior") OR (gender NEAR/3 linguistic*) OR (gender NEAR/3 wording*) OR (gender NEAR/3 "word use") OR (gender NEAR/3 "language use") OR (gender NEAR/3 "language variation") OR (gender NEAR/3 "linguistic variation") OR (gender NEAR/3 discourse) OR (gender NEAR/3 discursive) OR (gender NEAR/3 discourse marker*) OR (gender NEAR/3 speech) OR (gender NEAR/3 talk))	6,061
S3	TS=((sex NEAR/3 communicat*) OR (sex NEAR/3 counselling) OR (sex NEAR/3 counseling) OR (sex NEAR/3 conversation) OR (sex NEAR/3 "verbal behavior") OR (sex NEAR/3 linguistic*) OR (sex NEAR/3 wording*) OR (sex NEAR/3 "word use") OR (sex NEAR/3 "language use") OR (sex NEAR/3 "language variation") OR (sex NEAR/3 "linguistic variation") OR (sex NEAR/3 discourse) OR (sex NEAR/3 discursive) OR (sex NEAR/3 discourse marker*) OR (sex NEAR/3 speech) OR (sex NEAR/3 talk))	2,898
S4	TS=((male NEAR/3 communicat*) OR (male NEAR/3 counselling) OR (male NEAR/3 counseling) OR (male NEAR/3 conversation) OR (male NEAR/3 "verbal behavior") OR (male NEAR/3 linguistic*) OR (male NEAR/3 wording*) OR (male NEAR/3 "word use") OR (male NEAR/3 "language use") OR (male NEAR/3 "language variation") OR (male NEAR/3 "linguistic variation") OR (male NEAR/3 discourse) OR (male NEAR/3 discursive) OR (male NEAR/3 discourse marker*) OR (male NEAR/3 speech) OR (male NEAR/3 talk))	2,428
S5	TS=((female NEAR/3 communicat*) OR (female NEAR/3 counselling) OR (female NEAR/3 counseling) OR (female NEAR/3 conversation) OR (female NEAR/3 "verbal behavior") OR (female NEAR/3 linguistic*) OR (female NEAR/3 wording*) OR (female NEAR/3 "word use") OR (female NEAR/3 "language use") OR (female NEAR/3 "language variation") OR (female NEAR/3 "linguistic variation") OR (female NEAR/3 discourse) OR (female NEAR/3 discursive) OR (female NEAR/3 discourse marker*) OR (female NEAR/3 speech) OR (female NEAR/3 talk))	2,524
S6	TS=((stereotyp* NEAR/3 communicat*) OR (stereotyp* NEAR/3 counselling) OR (stereotyp* NEAR/3 counseling) OR (stereotyp* NEAR/3 conversation) OR (stereotyp* NEAR/3 "verbal behavior") OR (stereotyp* NEAR/3 linguistic*) OR (stereotyp* NEAR/3 wording*) OR (stereotyp* NEAR/3 "word use") OR (stereotyp* NEAR/3 "language use") OR (stereotyp* NEAR/3 "language variation") OR (stereotyp* NEAR/3 "linguistic variation") OR (stereotyp* NEAR/3 discourse) OR (stereotyp* NEAR/3 discursive) OR (stereotyp* NEAR/3 discourse marker*) OR (stereotyp* NEAR/3 speech) OR (stereotyp* NEAR/3 talk))	1,192
S7	S2 OR S3 OR S4 OR S5 OR S6	13,802
S8	TI=(communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR "verbal behavior" OR language OR linguistic* OR wording* OR "word use" OR "language use" OR "language variation" OR "linguistic variation" OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*)	1,461,895
S9	TI=(gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR woman OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping)	1,361,058
S10	S8 AND S9	24,902
S11	S7 AND S10	5,291
S12	S1 AND S11	2,541

PubMed

S1	"Communication"[Majr] OR "Linguistics"[Majr]	213,549
S2	"Gender Identity"[Majr] OR "Sex"[Majr] OR "Sex factors"[Majr]	20,676
S3	S1 AND S2	631
S4	communication[tw] OR communicate[tw] OR communicating[tw] OR interact[tw] OR interaction[tw] OR counselling[tw] OR counseling[tw] OR conversation[tw] OR verbal[tw] OR "verbal behavior"[tw] OR language[tw] OR linguistic*[tw] OR wording*[tw] OR "word use"[tw] OR "language use"[tw] OR "language variation"[tw] OR "linguistic variation"[tw] OR discourse[tw] OR discursive[tw] OR discourse marker*[tw] OR speech[tw] OR talk[tw] OR sociolinguistic*[tw]	1,681,472
S5	gender[tw] OR gender identity[tw] OR gender ideology[tw] OR gender ideologies[tw] OR gender factor*[tw] OR gender role*[tw] OR sex[tw] OR sex factor*[tw] OR sex role*[tw] OR biological sex[tw] OR biological sexuality[tw] OR sexual identity[tw] OR sex differentiation[tw] OR man[tw] OR men[tw] OR male[tw] OR masculine[tw] OR masculinity[tw] OR woman[tw] OR women[tw] OR female[tw] OR feminine[tw] OR femininity[tw] OR gender-specific[tw] OR sex-specific[tw] OR stereotype*[tw] OR stereotyping[tw]	11,972,294
S6	S4 AND S5	612,866
S7	S3 AND S6	422

Embase

S1	exp interpersonal communication/ OR exp verbal behavior/ OR exp verbal behaviour/ OR exp linguistics/ OR exp language/ OR exp speech and language/	84,256
S2	exp gender identity/ OR exp sex factor/	24,325
S3	S1 AND S2	230
S4	(communication OR communicate OR communicating OR interact OR interaction OR counselling OR counseling OR conversation OR verbal OR verbal behavior OR language OR linguistic* OR wording* OR language variation OR linguistic variation OR discourse OR discursive OR discourse marker* OR speech OR talk OR sociolinguistic*).ti,kw,ab.	1,823,914
S5	("word use" OR "language use").ti,kw,ab.	1,419
S6	S4 OR S5	1,823,970
S7	(gender OR gender identity OR gender ideology OR gender ideologies OR gender factor* OR gender role* OR sex OR sex factor* OR sex role* OR biological sex OR biological sexuality OR sexual identity OR sex differentiation OR man OR men OR male OR masculine OR masculinity OR woman OR women OR female OR feminine OR femininity OR gender-specific OR sex-specific OR stereotype* OR stereotyping).ti,kw,ab.	4,501,216
S8	S6 AND S7	271,752
S9	S3 AND S8	134

Appendix B. In- and exclusion criteria (back to text)

Study characteristics	Description	Inclusion	Exclusion
Study focus	Study's focus and main aim.	Comparative studies that aim to investigate the relationship between linguistic/ interactional variables and the sex and/or gender of the speaker.	Studies that do not initially aim to investigate the relationship between language use and the sex and/or gender of the speaker.
Outcomes	Study's outcome variables of interest.	Verbal and nonverbal linguistic and interactional variables such as (not restricted to): framing, hedging, word choice, use of metaphors, turn-taking, head movements, laughing, etc.	General communicative behavior without specifying linguistic or interactional variables (e.g. agenda-setting, information exchange, empathy).
Study method	Study's method and analysis.	Quantitative and qualitative empirical studies, i.e., based on observational analyses, such as discourse analysis or conversation analysis.	Theoretical studies that do not analyze observed data.
Participants	Speakers whose language use is being studied.	All speakers are 18 years or older. Comparison of speakers varying in sex or gender identity.	(Some) speakers are younger than 18 years, or do not vary in sex or gender identity.
Data (1)	Number of speakers and visibility.	Dyadic (and a few occasional triadic) face-to-face interactions.	Group interactions, monologues, and interactions via telephone or radio.
Data (2)	Communication mode.	(Transcripts of) (video- or) audio-recorded (non)verbal natural communication, including elicited speech (e.g., in experimental settings or interviews).	Written communication (online and off-line) and sign language.
Data (3)	Studied language.	Germanic or Romance languages such as (not restricted to): English, Swedish, Italian, and French.	Languages from other language families, such as Arabic, Baltic or Slavic.

Report characteristics	Inclusion	Exclusion
Year of publication	Studies from 2001.	Studies until 2000.
Publication language	Articles written in English or Dutch.	Articles not written in English or Dutch.
Publication status	Published studies or accepted for publication, book chapters, dissertations, or case reports.	Handbooks, papers under review, commentary, letters to the editor, or editorials.

Appendix C. Summary of reviewed studies (back p. 48) (back p. 50) (back p. 55)

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Ashenfelter et al. (2009)	USA	Male dominance hypothesis and interactional roles. Laboratory setting. Audio- and videotaped 7-minute conversations consisting of hypothetical job interviews. Same-sex and mixed-sex dyads. *BS:* participant's sex (male vs. female); dominance (high vs. low, 26 items questionnaire); task role (interviewer (high dominance) vs. interviewee in job interview (low dominance)). *WS:* communication partner's sex (male vs. female). *Participants:* 64 males and 64 females (undergraduates). Two trials per participant.	***Vertical and horizontal head movements.*** Measuring amplitude and velocity of vertical head movements (e.g., nods) and horizontal head movements (e.g., shakes).	F+
Bortfeld et al. (2001)	USA	Interested in the interplay between cognitive, social and situational factors on language use. Laboratory setting. Audiotaped task-oriented interactions in mixed-sex dyads. Referential communication task with mixed factorial design. *BS:* age (young vs. middle aged vs. older); speaker's sex (male vs. female), relationship (married vs. strangers). *WS:* domain familiarity (photographs of children vs. black and white abstract geometric tangrams); task role (director vs. matcher). *Participants:* 48 males and 48 females (24 pairs of strangers, and 24 married couples). Four trials per pair. Three age groups (young, M=28, SD=10; middle aged, M=47, SD=11; older, M=67, SD=2).	***Word counts:*** all words, including fillers, repeats and restarts. ***Overlapping speech.*** ***Disfluent speech:*** - ***Repeats*** (repetitions of words or phrases, e.g., *just on the left left side*) - ***Restarts*** (e.g., *imme- just below the left side*) - ***Fillers*** (e.g., *uh, ah, um, er*) - ***Editing expressions*** (e.g., *I mean, rather, that is, sorry, oops*); too rare, not included in analyses.	No differences found. No differences found. M+ (in particular fillers and repeats).

In the column *findings*, *M*+ and *F*+ indicate whether the linguistic variable in the study was found to be more used by male (*M*+) or female speakers (*F*+).

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Hancock & Rubin (2015)	USA	Communication Accommodation Theory. Laboratory setting. Audio- and videotaped elicited 3-minute conversations with a trained communication partner (4 males and 4 females; 21-32 years old), who steered the conversation topic to cellular phones or reality television. Same-sex and mixed-sex dyads. Repeated measures design. *BS:* speaker's sex (male vs. female). *WS:* communication partner's sex (male vs. female), topic (cellular phones vs. reality television). *Participants:* 20 males (18-59 years old, M=26, SD=10.5) and 20 females (18-51 years old, M=23.5, SD=9.7). Two trials per participant.	***Pronouns*:** words that represent beings, objects, or things (*I, me, he, her, people, persons, someone, him, her, it,* etc.), not including the filler *you know*.	No differences found.
			***Self-references*:** the word *I* when referring to self (speaker), not including the filler *I mean*.	No differences found.
			***Interruptions*:** breaking into a person's turn in an apparent attempt to take over the conversation, regardless of whether the interruption was successful in doing so (not including back-channels […] and self-interruptions/ self-corrections).	No differences found. More with female conversations partners.
			***Fillers and filled pauses**:* words and phrases used without inherent semantic intent or to maintain speaker role, e.g., *you know, I mean, it's like, umm, uhh, like*.	No differences found.
			Tag questions: a question that follows an assertion used as a request for support or validation of the preceding statement, e.g., *isn't it?, aren't they?, hasn't it?*.	No differences found.
			Hedges: a word or phrase that changes how absolute or certain a statement is (e.g., *sort of, somewhat, kind of, probably, about)*, […] or a verb or verb phrase that indicates a speaker's uncertainty in a fact or assertion (e.g., *wonder, speculate, think, suppose).*	No differences found.
			Justifiers: reasons given for a previous statement by the speaker. May begin with words such as *because, so, hence, therefore, in which case, in that case.*	No differences found.
			***Dependent clauses**:* phrase that contains a subject and verb but cannot stand alone as a full sentence. Usually begins with a subordinating conjunction (*because, since, when, although, if*) or a relative pronoun (*who, which, that*).	No differences found. More with female conversation partners.
			Negations: turning an affirmative statement into its opposite denial, e.g., *using not, don't, can't*, etc.	No differences found.
			Intensive adverbs: expressions of how complete a quality is, that modify a verb, adjective, phrase, clause, or another adverb (e.g., *very, really, quite, entirely, a little, a bit, pretty,* and *more*).	No differences found.
			Speech accommodation: changing communication behaviour to indicate attitudes toward the communication partner.	No differences found.

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Hannah & Murachver (2007)	New Zealand	Communication Accommodation Theory. Laboratory setting. Audio- and videotaped conversations without specified topics (a list with example topics or conversational prompts was provided), duration of approximately 8 minutes. Mixed-sex dyads (same-sex dyad was used as warm-up conversation). Repeated measures design. *BS:* participant's sex (male vs. female), speech style (facilitative vs. nonfacilitative, based on a high or low minimal response frequency). *WS:* conversation (first mixed-sex vs. second mixed-sex). *Participants:* 24 males (M=44 years old) and 24 females (M=45 years old) (30-60 years old). Two trials per participant.	***Total number of words**:* not including minimal responses.	M+ (only in second conversation).
			***Number of speaking turns**:* not including minimal responses or unsuccessful interruptions.	Not analyzed as a separate dependent variable.
			***Mean length of utterance*:** total number of words / number of speaking turns.	M+ (only in second conversation).
			Successful interruptions: in which the speakers yields the floor before completing the utterance.	No differences found.
			Overlapping speech: where a speaker begins speaking before the previous speaker has completed their utterance.	No differences found.
			***Minimal responses**:* any audible response that was uttered by the listener while the other person was speaking, not including minimal response tokens used as a precursor to speech (e.g., *aha, mmmm, yeah*).	F+ (only in second conversation).
			***Tag questions**:* when a statement is ended with a question such as *isn't it?, aren't they?, hasn't it?*.	No differences found.
			***Questions**:* not including tag questions.	F+ (only in second conversation).
			***Accommodation**:* when speakers adjust their communication toward (convergence) or away from (divergence) their speaking partners. Measured by the effect of participant's speaking style (facilitative vs. nonfacilitative) on the communication partner's use of minimal responses, total number of words, mean length of utterance, tag questions, successful interruptions, overlap, questions.	No differences found. Communication partners used fewer minimal responses, fewer tag questions, more words, and longer utterances when talking to a facilitative speaker.
Hazenberg (2016)	Canada	Construction and expression of gender identity, dynamic approach. Sociolinguistic interviews. Dyadic (and triadic) conversations from the Ottawa Trans Corpus, in which the respondents could talk about whatever they wanted, although the interviewer did use conversational prompts to elicit conversation about high school, jobs and travelling (emotionally neutral topics). *Speakers:* 6 straight men, 5 straight women, 5 queer men, 5 queer women, 5 trans men, 5 trans women (18-38 years old).	***Intensifiers:*** modifiers that precede adjectives, to scale up or boost the quantity of the adjective.	M+ (*'pretty'*) and F+ (*'so'*). Trans men used most intensifiers overall, straight men used least intensifiers overall.
			Centre of Gravity: the weighted average frequency of energy expended in the production of the speech segment /s/.	F+

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Holmes (2005)	New Zealand	Doing gender and doing leadership can be reconciled, dynamic approach. Workplace interactions. Qualitative linguistic analysis of 20 one-to-one audiotaped authentic workplace interactions between leaders and subordinates in four different organizations, in which mentoring was likely to occur. *Speakers:* 3 male managers, 2 female managers, 2 male subordinates, and 3 female subordinates.	***The approving strategy:*** compliments, repeats, positive feedback and minimal responses. ***The advising strategy:*** discourse markers, modifiers. ***The indirect coaching strategy:*** discourse markers, hesitations, hedges, pronoun we.	Could be identified as characterizing a more 'feminine' style of mentoring, but is not exclusively associated with men or women.
			The procedural strategy: questions, comments, self-references, distant pronouns, little explicit responses. ***The corrective strategy:*** questions, exclamations, comments, tag questions, minimal responses.	Could be identified as characterizing a more 'masculine' style of mentoring, but is not exclusively associated with men or women.
Menz & Al-Roubaie (2008)	Austria	Gender and dominance in institutional interactions with predetermined roles. Medical setting. Qualitative context-bound-in-depth analysis and quantitative analysis of 48 recorded medical interviews. *Speakers:* 3 male and 4 female physicians in an outpatient clinic (3 senior physicians and 4 interns), 24 male and 24 female patients with cardiovascular disorders / heart disease.	***Interruptions:***	
			- Failed interruptions, i.e., when someone attempts in vain to attain the right of speech.	No differences found.
			- Supportive interruptions, i.e., statements that were expressed simultaneously and borne by cooperative and interactional moves.	F+
			- Non-supportive interruptions, i.e., simultaneous speech sequences accompanied by a subject's or addressee's change.	No differences found.
			Back-channelling.	Not reported.

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Pfiester (2009)	USA	Communication Accommodation Theory. Laboratory setting. Audiotaped task-oriented conversations, in which activities were listed (4 minutes, first conversation) and multiple-choice questions were solved (8 minutes, second conversation). Mixed-sex dyads. *BS:* participant's sex (male vs. female); communication partner's sex (male vs. female); sex role identity (high vs. low, 40 items of the BSRI); test group ('Logical Intelligence Test', meant to increase stereotype threat in women, 'Social Intelligence Test', meant to increase stereotype threat in men, or 'Problem-solving Task', used in the control condition). *WS:* conversational context (pre- and post-manipulation). *Participants:* 60 male and 60 female (undergraduates, 18-23 years old, M = 19.28).	***Back-channelling:*** brief vocal responses uttered by the listener which do not constitute an attempt to take the conversational floor and are usually intended to show apparent interest in having the partner continue talking, e.g., *uh-huh, yeah,* and *I see*.	No overall differences found. F+ (when primed with logical intelligence). Female participants increased their use of back-channels over time. Male participants decreased their use of back-channels over time.
			Fillers: vocalized utterances by the speaker that are not necessary for comprehension, e.g., *uh*, *um*, *you know*, and *like*.	No overall differences found. Most decrease over time in female participants when primed with social intelligence. Most decrease over time in male participants when primed with logical intelligence or in the control-group.
			Hedges: short phrases which indicate the speaker does not want to strongly assert his/her statement, often used to avoid conflict and/or to speak cautiously (e.g., *sort of, I don't know, maybe*).	F+ (only in second conversation).
			***Questions*:** including tag questions, excluding directives.	F+
			***Speech accommodation**:* a difference in some index of language use observed in two or more situations. Objectively measured with the variables back-channels, questions, hedges, and fillers. Subjectively measured with two scales assessing participants' perceived partner's accommodation behaviour.	F+ (only in second conversation, and when objectively measured).

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Reid et al. (2003)	Australia	Self-categorization theory. Laboratory setting. Audio- and videotaped conversations in which gender-neutral topics were discussed (e.g., "Capital punishment should be instituted in Australia"), duration of 10 minutes. Mixed-sex dyads. Experimental-correlational design. *BS:* participant's sex (male vs. female), identity salience (gender (man/woman) vs. student (university/high school)). *Participants:* 21 males and 21 females (undergraduates).	***Speaking time.***	F+ (only if gender salience was high).
			Interruptions:	
			- Successful*;* when the original speaker was stopped from completing an utterance and when the interrupter completed an utterance.	No differences found.
			- Unsuccessful**;** if either or both of these criteria were not met.	No differences found.
			Verbal reinforcers**:** e.g., *uh huh*, *yeah*.	No differences found.
			Fillers: forms with no apparent semantic intent, e.g., *like, you know*.	Not reported.
			Hesitations**:** e.g., *uh, um, oh, well, let's see, now, so, you see*.	No differences found.
			Repetitions or stuttering**:** e.g., *I, I, I, think that […].*	Not reported.
			Tentative language use:	F+ (only if gender salience was high).
			- Tag questions (e.g., *isn't it?, doesn't it?, you know?, right?, don't you think?).*	
			- Hedges (e.g*., I don't know, probably, pretty much, y'know, kinda, I think, I guess).*	
			- Disclaimers (e.g., *I think, seems to be, I may be wrong, I'm not sure, I mean, I suppose).*	
			Intensifiers*:* e.g., *quite, so, definitely, absolutely, I fully fully agree with that.*	Not reported.
			Topic-relevant and personal questions*.*	No differences found.
			Laughter*.*	No differences found.
Reznik (2004)	USA	Gender and power are fluid and changeable, dynamic approach. Workplace interactions. Qualitative conversation analysis of 3 minutes of a longer conversation in the office. The two speakers discuss downloading music files from the Internet, and some other topics. *Speakers:* 1 male and 1 female (graduated students in their mid-twenties).	***Interruptions*****:** including both *cooperative overlap* (i.e., words of agreement and support and anticipation of how their sentences and thoughts would end), and *competitive overlap* (i.e., usurping or switching the topic). Turns that do not wait for the speaker to construct a turn construction unit or even a first possible completion point.	Interruptions (both cooperative and competitive) were all made by the female speakers, but should not be considered as depending on interlocutor's gender.

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Saucier & Elias (2001)	Canada	Evolutionary and neurological sex differences, biological view. Private casual conversations. Observational study of 100 natural dyadic conversations whereby the speakers were not aware of being recorded, duration of 3 minutes per conversation. *Speakers:* 50 males and 50 females, conversing with either a male (n=50) or a female (n=50).	***Manual gesturing.*** *Not including bimanual gestures.* *Free movement* = hand moves freely in the air without touching the body. *Self-touching movement* = hand touches body, e.g., playing with hair or biting fingernails.	No overall differences found. Males gestured more with the right hand when speaking, and more with the left hand when listening. Males made more free movements with the right hand, and more self-touching movements with the left hand. These patterns were not observed in the female participants.
Singh (2001)	UK	Sex differences in the brain, biological view. Laboratory setting. Audiotaped free and spontaneous one-to-one conversations, in which subjects were asked about their hobbies, life experiences, current activities, and other topics. Analysis of word-frequencies per 100 words by means of the Oxford Concordance Program (OCP). *BS:* speaker's sex (male vs. female). *Participants:* 13 males and 17 females (all above 50 years old).	***CSU (Clause-like Semantic Units) statistics, phrase length:*** the minimum number of words in a grammatically cohesive string with semantic meaning.	M+
			***Type-token ratio*:** the ratio of the total vocabulary used to the overall text-length.	No differences found.
			***W-Brunet's Index*:** how varied the vocabulary is for a given piece of text.	No differences found.
			***R-Honoré Statistic*:** tests the propensity of a speaker to choose between the alternatives of employing a word used previously or employing a new word.	M+
			Rates for nouns.	M+
			Rates for adjectives.	M+
			Rates for pronouns.	F+
			Rates for verbs.	F+
Sleath & Rubin (2002)	USA	Interested in the effects of social and contextual variables on language use. Medical setting. Content analysis of physician-patient interactions in primary care. *Speakers:* 13 male and 14 female physicians (26-39 years old), 122 male and 261 female patients (18-83 years old).	***Patients' questions about depression or anxiety.***	No differences found.
			Physicians' open-ended questions about depression or anxiety .	No differences found.
			Physicians' closed-ended questions about depression or anxiety.	No differences found. More with male patients and patients who had fewer prior visits.

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Stubbe (2013)	New Zealand	Functional perspective, co-construction of identity involving factors such as gender and ethnicity. Private casual conversations. Data from a sub corpus (8 dyads) from the Wellington Corpus of Spoken New Zealand English (WSC). Quantitative content analysis and qualitative contextual analysis. Same-sex conversations. *Speakers:* 4 Pakeha males, 4 Pakeha females, 4 Maori males, 4 Maori females (40-60 years old).	***Cooperative overlap:*** includes brief interjections, sentence completions, echoes and repetitions, through to more extended segments of simultaneous or actually overlapping speech which may include paraphrases, comments, elaborations and questions. Usually align and/or affiliate with the content of the other speaker's utterance in some way, and are sometimes followed by an indication of support from the primary speaker.	F+
			Minimal responses	
			- Supportive minimal responses*:* expressing meanings such as sympathy, interest, surprise, and explicit or enthusiastic agreement. Are marked paralinguistically by extended pitch span, raised voice range and higher volume and/or by rapid repetition.	F+
			- Neutral minimal responses: affectively and referentially neutral in tone. Typical functions might include signalling attention, understanding, a willingness to keep listening, or the negotiation of a topic shift.	M+
			Laughter.	No differences found.

Author	Country	Theoretical perspective, study design and method	Operationalization	Findings
Waara & Shaw (2006)	Sweden	Interested in the interplay between gender and other social and situational factors on language use, dynamic approach. Testimonies in court criminal trials. Quantitative study of 31 testimonies (analysis of the initial 2.5 minutes of each testimony, i.e., examination phase, starting from the first question posed by either the prosecutor or the defense lawyer depending on who called the witness to testify). *Speakers:* 15 male and 16 female Swedish witnesses, 13 female and 18 male Swedish court professionals.	***Amount of speech****:* i.e., total length of speech in seconds, number of words, number of utterances, words per utterance, and length of utterance, also including supporting utterances and simultaneous speech.	No differences found.
			Interruptions (only analyzed descriptively).	M+ (pattern observed in court professionals' speech). Most with male witnesses.
			Simultaneous speech (only analyzed descriptively).	No differences found.
			Supporting utterances (only analyzed descriptively).	No differences found. More supportive utterances when interacting with same-sex witnesses.
			Pauses: silent gaps in speech. A very large part of them are "thought pauses", i.e., when a speaker does not know what to say and needs time to think, and "hesitation pauses", i.e., when a speakers knows what to say but not how to say it.	No differences found.
			Pause fillers: utterances such as *eh*, interjected between words or parts of words in an utterance.	No differences found.
			Hedges: a group of linguistic devices that supposedly soften utterances by signalling imprecision and non-commitment, e.g., *I don't know, I think, maybe, I guess, and I suppose.*	No differences found.
			Questions (only analyzed descriptively).	Not reported.

In the column **Findings**, M+ and F+ indicate whether the linguistic variable in the study was found to be more used by male (M+) or female speakers (F+).

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