

PERSONAL PRONOUNS IN
EVALUATIVE COMMUNICATION

Marie Gustafsson Sendén

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To family and friends!

Abstract

Personal pronouns represent important social categories; they are among the most common words in communication and are therefore highly interesting in studying psychological perspectives and relations. The aim of this thesis was to investigate whether pronouns are used in semantic contexts in a way that reflect psychological biases. Specifically, I have tested whether self-, group-serving- and gender biases occur when pronouns are used in natural language. To study this, I developed a structure for pronouns in social categorization where the pronouns are categorized in a self-inclusive/exclusive, an individual/collective, and a gender dimension. New methods for examining pronouns usage in language were developed in the thesis, for use in experiments and in computerized studies of large data corpora of media news. The results of this thesis showed that self-inclusive pronouns (*I*, *We*) consistently were used in more positive contexts than self-exclusive pronouns (*He*, *She*, *They*) by participants who generated messages in the lab (Study I), and by journalists in written media news (Study II). Study I revealed that the evaluative context surrounding *I* and *We* varied according to the specific communicative situation. When individuals generated messages individually, more positive contexts were selected for *I* than *We*. However in a collaborative setting, *We* occurred in contexts of similar valence as *I*. An intergroup setting magnified the differences between self-inclusive and self-exclusive pronouns (e.g., between *We* and *They* and between *I* and *He/She*). In an analysis of 400 000 news media messages, *We* occurred in more positive context than *I* (Study II). In Study III, the contexts of *He* and *She* in these media news were examined. The results showed that *He* occurred nine times more often, and in more positive contexts than *She*. Moreover, words associated with *She* included more labels denoting gender, and were more uniform than words associated with *He*. In sum, this thesis shows that studying the use of pronouns is a fruitful way to investigate social psychology phenomena. The thesis contributes to the understanding of how pronoun use convey knowledge about social cognition, attitudes, gender stereotypes, as well as interpersonal and intergroup relations.

Keywords: Pronouns in social communication, evaluative sentence generating task, self-serving bias, ingroup bias, gender bias, linguistic bias, pronouns, language, mass media.

Sammanfattning

Personliga pronomen är bland de vanligaste orden i språk samtidigt som de reflekterar psykologiskt viktiga perspektiv och grupper. Därför är det intressant att undersöka hur pronomen används i kommunikation och om sättet de används på avslöjar psykologiska värderingar. I avhandlingen undersöker jag specifikt om pronomen används på ett sätt som framhäver jaget, den egna gruppen eller på ett sätt som förstärker könsstereotyper. För att studera detta utvecklade jag en modell - "Pronomen i social kategorisering" - som visar hur grammatiska kategorier av pronomen motsvarar psykologiskt viktiga sociala dimensioner, som till exempel inkludering/exkludering, individ/kollektiv och genus. För att genomföra analyserna av de olika dimensionerna har nya experimentella och korpusbaserade metoder utvecklats. Resultaten visar att jaget och den egna gruppen framställs som mer positiva än andra individer och grupper i texter både när experimentella försök genomförs (Studie I), liksom i analyser av nyhetsmedia (Studie II). Det betyder att *Jag* och *Vi* konsekvent förekommer i mer positiva sammanhang än *Hon*, *Han* och *Dom*. Studie I visade även att värderingarna av den individuella/kollektiva dimensionen varierade beroende på hur den kommunikativa situationen såg ut. När individer formulerade meningar individuellt så skapades kommunikation där *Jag* förekom i mer positiva kontexter än *Vi*. När individer däremot formulerade meningar i situationer som innehöll samarbete så inkluderades *Vi* och *Jag* i lika positiva kontexter. I en situation där det fanns potentiella gruppkonflikter ökade skillnaderna mellan självinkluderande och självexkluderande pronomen (dvs. mellan *Vi*, *Jag* och *Hon/Han*, *Dom*). I Studie II, analyserades 400 000 engelska nyhetsmeddelanden. Liksom i Studie I, förekom *Jag* och *Vi* i mer positiva sammanhang än *Han/Hon*, och *Dom*. I den här typen av offentliga texter förekom också *Vi* i mer positiva sammanhang än *Jag*. I Studie III fokuserades könsstereotyper genom analyser av *Hon* och *Han* i samma nyhetskorpus som i Studie II. Resultaten av dessa analyser visade att *Han* förekom nio gånger så ofta som *Hon*, i kontexter som var mer positiva än *Hon*, liksom att ordvalen runt pronomen förmedlar könsstereotyper och mindre varierade beskrivningar av *Hon* jämfört med *Han*. Sammantaget visar avhandlingen att pronomen mycket väl kan användas för att förstå socialt tänkande, attityder, könsstereotyper, liksom relationer mellan individer och grupper.

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List of Studies

The present doctoral thesis is based on the following studies:

- I. Gustafsson Sendén, M., Lindholm, T., Sikström, S. (2014). Selection bias in choice of words: Evaluations of "I" and "We" differ between communication contexts but "They" are always worse. *Journal of Language and Social Psychology*, 33(1). 47-65. Doi: 10.1177/026192713495856 *
- II. Gustafsson Sendén, M., Lindholm, T., Sikström, S. (2013). Biases in news media as reflected by personal pronouns in evaluative contexts. *Social Psychology*. Doi: 10.1027/1864-9335/a000165 **
- III. Gustafsson Sendén, M., Lindholm, T., Sikström, S. (pending). "She" and "He" in news media messages: Pronoun use reflects gender biases in frequencies, as well as in evaluative and semantic contexts. *Sex Roles*

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Abbreviations

ANEW = Affective norms of English words
ESG = Evaluative sentence generating
CAT = Communication accommodation theory
LCM = Linguistic category model
LEB = Linguistic expectancy bias
LIB = Linguistic intergroup bias
LSA = Latent semantic analysis
PSC = Pronouns in social categorization
SIT = Social identity theory
SVD = Singular value decomposition

Introduction

Language is a fundamental tool in human social processes, playing a key role in sharing and influencing reality, in the transmission of cultural knowledge, and in establishing and maintaining relationships. What people say to each other strongly influences the quality of their relationships and their psychological well-being (Ireland et al., 2011; Krauss & Chiu, 1997; J. J. Lee & Pinker, 2010). Humans are surrounded by language throughout the day – in face to face interaction, but also in the media, such as newspapers, literature and the internet.

Given the prominence of language in social relations, it is somewhat surprising that social psychologists have not investigated language and linguistic variables to a greater extent (Holtgraves & Kashima, 2008; Pitts & Nussbaum, 2006). Language and thought are intrinsically linked, hence the relationship between language and mind is at the heart of social psychology. However it is hardly ever explicated *how* language is involved in social influence, perception, intergroup bias and stereotyping (Fiedler, 2008).

Evolutionary theories suggest that language coevolved as humans began living in larger groups and with the enlargement of the human brain (Dunbar, 1993, 1997; Pinker, 2007). According to these theories, language evolved as social glue, promoting trust and bonding. The evolution of specific words prioritizes efficiency and function, and simple words are assumed to have better survival fitness than complex ones (Nettle, 1999).

One group of words that may have evolved precisely because of their functionality and simplicity are the personal pronouns. Personal pronouns exist in most languages, are used frequently, and reflect important social identities and categories (e.g., *I*, *We*, *She*, *He* and *They*). Personal pronouns have no specified referents but are used relative to the speaker's point of view (Ricard, Girouard, & Gouin Décarie, 1999). Since pronouns do not refer to a particular, labeled group, it seems possible that the monitoring of potential biases in language is more attenuated when people use pronouns compared to when labels denoting specific social categories (e.g., *immigrants*, *men* and *women*) are used (Chung & Pennebaker, 2007; Pennebaker, Mehl, & Niederhoffer, 2003). This means that there may be less suppression of biases due to social desirability concerns when people use pronouns compared to social category labels. Therefore, I expect pronouns to be particularly useful in research on social psychological biases in language production.

The aim of this thesis is to contribute to the understanding of the intersection of language, cognition and social interaction. The thesis will focus especially on how pronouns are used in semantic contexts and how these contexts are associated with valence. Semantics refers to the study of the relations between linguistic expressions and their meaning or reference (Naess, 1961). Due to the relative scarcity in methods for investigating the evaluative aspects of language in social psychology, an important aim of this thesis was to develop experimental as well as computerized methods for analyses of evaluations in written text.

Language, Cognition and Behavior

The question of whether the language shapes or reflects thought has a long history in philosophy. Wittgenstein (1922) stated that “the limits of my language mean the limits of my world” (p. 74, point 5.6). This is the essence of the “Sapir-Whorf-hypothesis” (Hunt & Agnoli, 1991) including linguistic relativity and linguistic determinism. According to Sapir (1921) and Whorf (1956), words and grammatical structure shape thought to the degree that thinking without words is not possible (linguistic determinism), and that people who speak different languages, think differently (linguistic relativity) (Boroditsky, 2001, 2003; Fuhrman et al., 2011). An old and popular example of this is that of the Inuit language has more words for snow than English, enabling a better discrimination of different snow qualities (Whorf, 1956). Although the empirical evidence has shown that experience and interest are far more important than language for the ability to discriminate between types of snow (Fiedler, 2008), it is still true that words facilitate perception and thinking. For example, exposing people to words facilitate recognition of semantically related words, so-called semantic priming (Meyer & Schvaneveldt, 1971), and may even lead to behavior consistent with the target word (Bargh, Chen, & Burrows, 1996; Wheeler & DeMarree, 2009). Furthermore, the wording of questions in an investigate interview might distort memories and influence judgment (Loftus, 1974; Semin & De Poot, 1997a). Moreover, children living in countries where languages include salient grammatical gender (e.g., Hebrew) develop gender identity earlier than children living in languages that are grammatically more gender neutral (e.g., English and Finnish; Guiora, Beithallahmi, Fried, & Yoder, 1982).

Another perspective on language is represented in theories like “universal grammar” (Chomsky, 1975), suggesting that language reflects thought, is innate and embedded in the human brain (Pinker, 1990). In support of this notion, national languages may differ, but words are often similarly categorized into verbs, pronouns, and nouns, and have the same type of computational machinery in constructing the syntax (Pinker, 1990). It has also been found that language production and understanding occur in specific brain regions that appear to be universal, and that vocabulary and grammar are stored in different parts of the brain (Pinker, 1997). The idea that language reflects thought is implicit in research assessing cognition through the medi-

um of language (e.g., in questionnaires or interviews), or when “slips of the tongue” (Freud, 1920) are interpreted as reflecting what was actually on the speaker’s mind.

Other discussions on language in psychology concern whether words are chosen consciously or unconsciously, whether speakers are motivated to share their inner thoughts with the listener (Clark & Brennan, 1991; Hardin & Higgins, 1996), or whether speakers try to influence the behavior of the listener (Austin, 1962; J. J. Lee & Pinker, 2010). Austin (1962) argued that in most communication, speakers are motivated to influence listeners, for example, to share the speaker’s opinions, or to carry out actions initiated by the speaker. Similarly, Fiedler (2008, p. 40) stated that “language is a tool for effective action, not for logical thinking”.

Integration of Language Perspectives

Rather than debating whether language shapes or reflect thought, it is more constructive and interesting to consider the interactive process where language both reflects and shapes cognition. Two examples including pronouns might illustrate this. When two people meet and fall in love, their word use changes. Studies have found that as the relationship becomes more intimate, partners change from using individual pronouns *I and She/He* to use the collective, self-inclusive pronoun *We* when referring to themselves and their partners (Fitzsimons & Kay, 2004). In parallel, saying and hearing *We* increases the sense of intimacy which further strengthens the positive experiences of the relation (Fitzsimons & Kay, 2004). In intimate relations, the increased use of *We* seems to be made rather unconsciously (Aron, Aron, Tudor, & Nelson, 1991; Ireland et al., 2011). In contrast, in more public and official areas, political or business leaders use *We* as a rhetorical device to build commitment and influence cohesion in groups (Chung & Pennebaker, 2007; Proctor & Su, 2011; Slatcher, Chung, Pennebaker, & Stone, 2007).

Linguistic Social Psychology

Linguistic studies include investigations of semantic structures, word similarities, word categories, etc., whereas linguistic psychology examines psychological and neurological factors that enable humans to acquire, use, produce and comprehend language. The object of linguistic social psychology is to make language in social processes salient, and to study how individuals use language in communication to establish identities, contacts, form groups, influence others, and so forth. Below, I present some important theories and aspects of language that have been introduced within linguistic social psychology. Because many of these theories are based on social identity theory and self-categorization theory, these theories are presented first. Social identity theory (SIT; Tajfel and Turner, 1986; Turner & Tajfel 1979) is one of the most important and well-cited theories in social psychology. According to SIT, a person's identity consists of an individual and a collective part. The individual identity is comprised of the traits and characteristics that are unique to a person and unrelated to collective groups (e.g., being smart, generous or interested in travelling, etc.). The social self is derived from attachment to relational groups, such as friends, family, working groups, or to broader categories such as gender, ethnicity, nationalities, etc. According to self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) people continuously categorize themselves as well as others into groups and categories. Categorization in turn leads to comparisons between the self and the groups one belong to (ingroup), to others and groups one do not belong to (outgroup). Feeling attached to one group is often associated with distancing from other groups. The outcomes of social comparisons are most often that the self and the ingroup are considered as better than other individuals and groups (for reviews, see, Mullen, Brown & Smith 1992, Sedikides & Gregg, 2008). The processes described by SIT and self-categorization theory may be reflected by pronouns use, (e.g., by comparing *We* to *Them*, or focusing *I* or *We* in different situations) and by other factors such as accents, word choice. etc., as described below.

Communication Accommodation Theory (CAT)

In person perception and social categorization, the visual characteristics of an individual such as age, gender, and ethnicity have been given strong emphasis (Stangor, Lynch, Duan, & Glas, 1992; Stroessner, 1996). However, as described by Giles (1977), the way people talk influences categorization, evaluations and judgments more than their looks (Gluszek & Dovidio, 2010a, 2010b; Gluszek, Newheiser, & Dovidio, 2011). For example, accent, dialects, and word choice are important cues to social identity (Giles & Johnson, 1987), and influence perceptions of status and competence (Cargile, Giles, Ryan, & Bradac, 1994; Lev-Ari & Keysar, 2010). Moreover, CAT describes how people actively adjust their accents and word choice to connect to, or distance themselves from other people or groups (Cargile et al., 1994; Giles, 1977; Giles & Ogay, 2007). For example, speech divergence for example by accent, occurs in intergroup contexts when the speaker expects competitive interactions with outgroup members, whereas speech convergence is more common when the speaker is in a collaboration situation (de Montes, Semin, & Valencia, 2003). The question is whether convergence and divergence as shown by CAT is reflected also in how pronouns are used in contexts. For example, how does the context of *We* or *They* change in collaboration or competitive situations.

Linguistic Category Model (LCM)

The linguistic category model (LCM; Semin & Fiedler, 1988) describes how the abstract/concrete elements of word-choice reflects interpersonal relations and evaluations of people and actions. Abstract words are more general representing qualities and personalities, whereas concrete words do not refer to specific behavior. Abstract words indicate that an action is rather stable and caused by the actor's personality, whereas concrete words indicate that an action is temporary and caused by the situation. The LCM makes a distinction between four levels of abstraction. *Descriptive action verbs* (e.g., phone, talk, eat), the most concrete level, describes the situation very specifically, in illustrative words, without reference to the person performing the action; *interpretative action verbs* (e.g., help, hinder) add an intention and often an evaluation to the action; *state verbs* refers to either cognitive or affective mental states of the actor (e.g., understand, think, hate, disgust), and *adjectives* describe the qualities of a person (e.g., cheerful, humorous, loving, kind). In studies using LCM it has been found that word choice and abstraction seem more difficult to monitor consciously and to intentionally control than for example, explicit ratings of groups on ratings scales or in allocations of resources that are often used in research on self- and group serving biases

(Franco & Maass, 1996). Importantly, word-choice in accord with LCM levels influences the listener, such that actions described by abstract words are perceived as more stable, and as having a higher probability of being repeated than actions described with concrete words (Semin & De Poot, 1997b; Semin & Fiedler, 1988; Wigboldus, Semin, & Spears, 2000). In a study of a recruitment process, it was shown that recruitment staff used different abstraction levels in describing applicants, and that the final selection favored those described with abstract words for positive behaviors, and with concrete for negative behaviors (Rubini & Menegatti, 2008). The LCM is to my knowledge one of the most sophisticated models of biases in word choice, and of how word choice may reflect a speaker's motivation to influence social processes and evaluations. The LCM focuses however only on direct descriptions of persons and behavior, whereas the aim of this thesis is to consider all words in the contexts of the pronouns and whether for example *I* and *She* occur in contexts of different valence. The LCM has been applied in two theoretical models: the linguistic intergroup bias (LIB; Maass, Salvi, Arcuri, & Semin, 1989), and the linguistic expectations bias model (LEB; Wigboldus et al., 2000).

Linguistic Intergroup Bias (LIB)

According to the LIB (Maass et al., 1989), word choices are effects of social identities and group categorization, and depend on whether the target person belongs to the speakers own group or not. Positive behavior is described by more abstract words if the actor belongs to the speaker's group, and in more concrete words if the actor belongs to an outgroup ("*I*'m cooperative", "*He* supports"). For negative behavior, the pattern is reversed (e.g., "*I* pushed her" versus "*She* is aggressive"). Self-enhancement and ingroup protection have been suggested as underlying motivations behind LIB (Maass, Ceccarelli, & Rudin, 1996; Maass, Milesi, Zabbini, & Stahlberg, 1995). Studies have shown that the LIB is stronger in social comparison situations, threatening situations (Franco & Maass, 1996; Maass et al., 1996; Maass et al., 1995), and when there is strong coherence in a group (Moscatelli, Albarello, & Rubini, 2008; Rubini, Moscatelli, Albarello, & Palmonari, 2007). Expressing LIB has also been found to increase speakers' self-esteem (Maass et al., 1996). Because studies have found that linguistic intergroup biases are more difficult to control intentionally than attitude assessments about social groups (Franco & Maass, 1996), LIB has been suggested to be an implicit measures of prejudice (von Hippel, Sekaquaptewa, & Vargas, 1997, 2008). Numerous studies have confirmed the LIB by activating different social identities and intergroup relations (e.g., nationalities, immigrants versus native inhabitants, sports teams, political positions), in different lan-

guages (e.g., Italian, English, and Czech), with different response formats (e.g., multiple choice or free format), in experimental research, as well as in mass media analyses (for reviews, see Maass, 1999; Wigboldus et al., 2000). Coding word-choice according to LCM is quite a sophisticated process. The studies conducted within this thesis could be said to be more general, such that pronouns are used as proxies for ingroups and outgroups and biases are considered at the most basic dimension in human perception and judgment, that is, valence (Osgood, Suci & Tannenbaum, 1957).

Linguistic Expectancy Bias (LEB)

Differences in the abstraction/concreteness-dimension might also be a result of whether a behavior is expected or not, as described in the LEB (Maass et al., 1995; Wigboldus et al., 2000). Actually, expectancy has been found to be more important than a motivation for self- and group enhancement (Maass et al., 1995). For example, stereotypical behavior often equals expected behavior and are therefore referred to in more abstract words than unexpected behavior. Thus, a woman crying may be described as sensitive or emotional, whereas a man crying is described as just crying or wiping away some tears from his eyes (Wigboldus et al., 2000). In intergroup relations, the expectancy bias described in LEB and the intergroup bias described in LIB would result in the same choices of words, because the outgroup is typically expected to perform more negative behaviors than the ingroup. However, in judgments of, for example, gender stereotypical behavior, LIB would consider both the gender of the speaker and the gender of the person to be described in predicting hypotheses, whereas LEB would include only the gender of the person to be described (Wigboldus & Douglas, 2007; Wigboldus et al., 2000). Whether expectancies and stereotypes influence word choice are investigated in Study III.

Expansion of the LCM - Nouns versus Adjectives

The original model of LCM indicated that nouns should be categorized as adjectives (Coenen, Heudebeuw, & Semin, 2006). However, recent research has examined the role of nouns as compared to adjectives as referring to social categories in expressions of intergroup biases (Carnaghi et al., 2008; Graf, Bilewicz, Finell, & Geschke, 2012). On the surface, nouns (e.g., “Kim is *a Swede*”) and adjectives (e.g., “Kim is *Swedish*”) seem to convey the same content, but research suggests that nouns have more inductive potential, and more strongly indicate group membership than adjectives (Carnaghi, et al., 2008). Studies also demonstrate that using nouns compared to

adjectives when describing nationalities enhances stereotypic inferences and ingroup bias (Graf et al., 2013). These findings are particularly pertinent in the context of the current thesis, since nouns and pronouns are semantically, as well as syntactically, more similar than pronouns and verbs or adjectives. Thus, pronouns (e.g., *We*) and nouns (e.g., *Swedes*) both denote categories to which people belong rather than characteristics of the categories, and they can be substituted in sentences without changing the syntax (e.g., *We* can be substituted by *Swedes* in the sentence *We are beautiful*). Hence, it could be assumed that as nouns, pronouns may be particularly potent in eliciting social psychological biases.

Gender Theories in Language

Gender can be studied from many different perspectives in language. First, it can be noted that collective knowledge about stereotypes relies on communication of these stereotypes. Gender stereotypes can be reflected, transmitted and reinforced in word choice, for example by describing women as relation-oriented, weak or sensitive, and men as leaders, or as aggressive and assertive (Fiske, 2012; Fiske & Taylor, 1991; Sutton, 2010). Indeed, empirical studies (Kashima, Klein, & Clark, 2007) have shown that people are motivated to share stereotypical rather than counter-stereotypical information, implying that ambiguous or counter-stereotypical descriptions are omitted from communication (Kashima, 2000; Lyons & Kashima, 2003). Languages also differ with regard to how salient gender is in words and syntax (Stahlberg, Braun, Irmen, & Sczesny, 2007). For example, some languages do not specify gender in any pronouns, whereas other languages specify both first, second and, third person pronouns, in the singular and plural. In English (and Swedish), only third person pronouns are specified in accord with gender. In analyses of pronouns and language, a “male bias” in language has been found (Prewitt-Freilino, Caswell, & Laakso, 2012; Stahlberg et al., 2007), such that words related to men are more often used as the norm (Hegarty & Buechel, 2006). For example, when there are balanced words for male and female roles (e.g. actor/actress), the male form is used in the plural, and when referring to groups of mixed sexes (Stahlberg et al., 2007). The feminine form can only be used in references to women. Male words are also more common than female words. For example, *He* is the 11th most common word in English, whereas *She* appears in 46th place (Hegarty & Buechel, 2006). In study III, gender biases in language will be examined by computerized methods using the contexts around *He* and *She* in a news media corpus. Frequency, as well as word choice and the evaluative contexts will be examined.

Pronouns

Evolutionary theories suggest that language evolved as humans began living in larger groups, and with the enlargement of the human brain. It is suggested that language evolved as a social glue, promoting trust and bonding (Dunbar, 1993, 1997; Pinker, 2007). Because human evolution involves competition between social groups, it seems reasonable to assume that words denoting social categories were of critical importance. It has also been suggested that the evolution of specific words is a function of efficiency and applicability, such that simple words have higher survival fitness than complex ones (Nettle, 1999). In support of this notion, personal pronouns exist in most languages, and are among the most frequent words. The personal pronouns are used relative to the speaker's point of view (Ricard et al., 1999), which makes them especially interesting for social psychology research. The speaker's perspective is also confirmed in developmental research that has found that children learn individual first personal pronouns (*I*) before second (*You*) and third (*She, He*) personal pronouns, and that acquisition of first, second, and third personal pronouns is associated with coordination and perspective-taking in children (Ricard et al., 1999).

In comparison to explicit communication including specific social categories (e.g., immigrants, men, and women), pronouns seem to be used more automatically, with less self-monitoring than words denoting explicit social categories (Chung & Pennebaker, 2007; Pennebaker et al., 2003). This means that examining the use of these words in language provides a non-reactive way to explore social psychological processes. Thus, pronouns are useful as research objects to grasp implicit biases about social categories in language production.

Pronouns in Psychology Research

Pennebaker and colleagues established a research paradigm within psychology, in which they studied pronouns with a focus on analyses of frequencies (see, for example, Campbell & Pennebaker, 2003; Chung & Pennebaker, 2007; Cohn, Mehl, & Pennebaker, 2004; Pennebaker, 2011). Pennebaker and colleagues studied and found that variations in personality, mood, and status are associated with differences in the frequency of pronoun use (Chung &

Pennebaker, 2007; Cohn et al., 2004; C. H. Lee, Kim, Seo, & Chung, 2007; Pennebaker, 2011). For example, people who often use pronouns in communication were found to be more socially oriented, and interested in others than people who did not use pronouns very often. In one study, Campbell and Pennebaker (2003) investigated the use of pronouns among people who were taking part in a program of expressive writing as a way of treating traumas. The results showed that those who changed the perspectives in their writing, as indicated by flexible pronoun use, recovered faster than those who consistently wrote from an *I*-perspective (Campbell & Pennebaker, 2003).

In a further line of research, pronouns have been used to activate individual or collective identities. According to SIT (Tajfel & Turner, 1986), a person's identity consists of an individual and a collective part. In a study by Brewer and Gardner (1996), individual and collective identities were activated by instructing participants to circle either, *We*, *They/it* or *I* in a text. After this priming procedure, the participants took an identity test (i.e., the twenty statement test; Kuhn & McPartland, 1954). Those who previously had circled *We* in the text, indicated more collective identities than those who circled *I* or *They/it* (Brewer & Gardner, 1996; Gardner, Gabriel, & Lee, 1999). Furthermore, those who circled *I* indicated more individual traits and characteristics (Gardner et al., 1999). These studies highlight the connection between pronouns, and individual and social identities.

In neuroscience, researchers have also shown interest in pronouns. Neuroimaging data have shown that using and thinking about pronouns were related to activations of different areas in the brain. For example, self-referential thought using first personal pronouns (*I*) activated different brain areas to thought referring to third personal pronouns (*She/He*; Ames, Jenkins, Banaji, & Mitchell, 2008; Walla, Greiner, Duregger, Deecke, & Thurner, 2007).

In contrast to previous research on pronouns in social psychology, this thesis focuses on pronouns in their semantic contexts, that is, the meaning of the words around the pronouns, and how these contexts may vary in valence depending on psychological biases. In the next section (p. 29), a model of pronouns in social categorization will be presented together with the hypotheses. However, I first present a summary of earlier studies that have included the personal pronouns that are used in this thesis (e.g., *We*, *I*, *She*, *He* and *They*).

”We”

We is the most frequently studied personal pronoun in psychology. The use of the word *We* is supposed to induce a feeling of a common faith and future among speakers and listeners (Agnew, Van Lange, Rusbult, & Langston,

1998; Fitzsimons & Kay, 2004). In analyses of American blogs on the internet after nine-eleven in 2001, there was an increase in the use of *We* (Cohn et al., 2004), possibly reflecting a need for keeping the nation together and reestablishing a common fate. Moreover, commitment and quality in partner relations are benefited by the use of *We* (Fitzsimons & Kay, 2004; Sillars, Shellen, McIntosh, & Pomegranate, 1997; Simmons, Gordon, & Chambless, 2005), such that higher frequencies of *We* were associated with stronger commitment in the relationship and experiences of higher quality in the relationship. Studies have further demonstrated that successful problem solving, for example in conflict resolution in intimate partner relations, or in collaboration between aircraft pilots, is associated with a more frequent usage of *We* (Sexton & Helmreich, 2000; Simmons et al., 2005)

Another situation that may increase the usage of *We* is when speakers want to become associated with success. Cialdini et al. (1976) found that sport supporters basked in the reflected glory of their sportsteam by talking about their teams as *We* when the team was successful but not when the team failed.

In temporary contacts between people, *We* might also be used as a politeness strategy, and a way of decreasing the distance between the speaker and the listener (Brown & Levinson, 1987). For example, a study on physician-patient interactions (Aronsson & Sätterlund-Larsson, 1987) showed that physicians facilitated collaboration with the patient by using *We* to include the patient (e.g., “Shall *we* take the test now”). In a similar way, it has been found that politicians use *We* in persuasion to establish common ground with voters (Halmari, 2005; Tausczik & Pennebaker, 2010). Physicians and politicians both belong to groups with high status, and in fact, high status per se seems to be associated with a more frequent use of *We* (Pennebaker, 2011). It should be noted that a speaker must be sensitive to the listener’s attitude while using *We*. If a listener does not trust a person or feel attachment to a group or a speaker, using *We* might instead increase the listener’s suspicion and distance to the speaker (Pennebaker, 2011).

As described earlier, research has also demonstrated that repeated exposure to *We* in a text activated more collective identities, whereas exposure to *I* resulted in more individualistic identities (Brewer & Gardner, 1996; Gardner et al., 1999). In line with this finding, research also shows that people with relatively stronger collectivistic identities (e.g., Koreans), prefer to use the collective pronoun *We*, whereas people with relatively stronger individualistic identities (e.g. Americans) prefer to use *I* (Na & Choi, 2009).

In this thesis, it is expected that *We* will be used in rather positive contexts. Of special interest is whether the evaluative semantic contexts around *We* changes as a consequence of whether individual or social aspects of a person’s identity become activated.

“I”

Theoretically, first-person singular pronouns (e.g., *I*, *me*, *my*) are supposed to reflect an individualistic identity (Na & Choi, 2009), an actor perspective (Brunye, Ditman, Mahoney, Augustyn, & Taylor, 2009), and self-focus (Simmons et al., 2005). For example, *I* pronouns have been used to prime individual identities and values (Brewer & Gardner, 1996; Utz, 2004). As described above, an individualistic identity is associated with a more frequent use of *I* pronouns (Na & Choi, 2009).

When examining frequencies in pronoun use in natural language, Pennebaker and colleagues found that narcissists, depressed people, women, and low status groups used *I* more frequently than others (Campbell & Pennebaker, 2003; Chung & Pennebaker, 2007; Pennebaker, 2011; Pennebaker et al., 2003). It has even been shown that poetry by authors with a history of attempted suicides included more *I* than poetry by authors who had not made such attempts (Stirman & Pennebaker, 2001). For narcissists and depressed, the more frequent usage of *I* is suggested to be a consequence of self-focus, whereas for women and low status people it is suggested to be a result of the subordinate positions for these groups.

A positive aspect of using *I* has also been found in studies on partner relations. While *We* was associated with better quality in talking *about* the relation and in problem-solving (Fitzsimons & Kay, 2004; Simmons et al., 2005), daily communication *between* partners that included *I*-talk was associated with relationship satisfaction and stability (Slatcher, Vazire, & Pennebaker, 2008), in comparison to using *Me* or *You*, which was considered as more passive word-choice.

“He” and “She”

In psychological research including pronouns, *He* and *She* occur in two types of studies. In one line of studies, third personal pronouns are used as a way to represent other people to separate what *is me* (*I*) from what *is not me* (*He*; e.g., Brunye et al., 2009). This usage is relevant for the first two studies in the current thesis. In another line of research, *He* and *She* are used to investigate gender stereotypes (e.g., Twenge et al., 2012). This usage is relevant for the third study in this thesis.

“He”/“She” to represent other people

In contrast to studies on *I* and *We*, research on the third personal singular pronouns *He* and *She* as reflecting “other people” is scant. One experiment investigated whether pronouns influence mental images of a behavior by using *I* or *He* in the descriptions of the behavior. Participants were given short written descriptions either with *I* or *He* in the texts (*I cut the apple* or

He cuts the apple), and an instruction to combine the texts with pictures taken from either an actor or an observer perspective. When *I* was used in descriptions, participants chose pictures representing an actor perspective whereas when *He* was used, participants chose pictures in accord with an observer perspective (Brunye et al., 2009).

First and third singular pronouns were also compared in a study on egocentrism (Pahl, 2012). In this study, participants read a text including either *He* or *I*, together with an instruction to circle the pronouns. Afterwards, participants were told they should take part in a quiz against another person, and they were asked to bet on whether or not they would win the quiz. Results showed that participants with a primed self-focus, those who had circled *I*, made higher bets on winning the quiz, than participants who were primed with a focus of the other (*He*). It should be noted that both these experiments (Brunye et al., 2009; Pahl, 2012) used *He* but not *She* as stimuli-words.

“He” & “She” to represent gender

Although there are several languages that do not mark gender for any pronoun (e.g., Mandarin, Turkish, Finnish), many languages do (e.g., English, Swedish, French; Prewitt-Freilino et al., 2012; Stahlberg et al., 2007). The most common gendered pronouns are third personal pronouns *He* and *She*. Historically, *He* has been used as the generic form, representing people in general (Stahlberg et al., 2007). Since the seventies, this biased word use has been reformed and for example, the APA manual (APA, 2012, p. 73) is explicit on this point:

“Sexist bias can occur when pronouns are used carelessly, as when the masculine pronoun he is used to refer to both sexes or when the masculine or feminine pronoun is used exclusively to define roles by sex (e.g., the nurse ... she).”

The ratio of male and female pronouns in written texts has been used as an indicator of gender equality. Twenge, Campbell, and Gentile (2012) examined a large corpus of American books (Google book data base) published in the 20th century. The ratio of male pronouns has changed from 4.5 to 2 male pronouns for each female pronoun and this change has been associated with female attainment in education and participation in the labor force.

Pronouns have also been used to investigate the influence of gender stereotypes on reading. Gender stereotypes are common beliefs about men and women, including roles as well as traits (Glick & Fiske, 1996; Wade & Brewer, 2006). Studies have reported that reading and understanding a text are affected by whether there is a stereotypical match between a pronoun and the behavior. For example, “The *figure skater* [*weight lifter*] attended a press conference before the latest competition. *She* [*He*] said that there was every

reason to expect a gold medal”. Research shows that reading a sentence including *figure skater* and *She* was read faster and more fluently than *figure skater* and *He*, whereas the opposite is true for the *weightlifter* (Kennison, 2003; Kennison & Trofe, 2003; Kreiner, Sturt, & Garrod, 2008). In a corpus-based study (Lenton, Sedikides, & Bruder, 2009), it was found that pronouns were also associated with gender stereotypes also in natural language, such that masculine pronouns were more strongly associated with neutral and masculine professional roles than with feminine roles, whereas feminine pronouns were more strongly associated with feminine roles, than masculine or neutral roles.

“They”

The last pronoun that is examined in this thesis is *They*. To my knowledge there are no studies or theories that describe the use of *They* on its own, but rather studies that have used *They* as an outgroup marker, and as a contrast to *I* or *We*. For example, (Perdue, Gurtman, Dovidio, & Tyler, 1990) used *They* in contrast to *We* to test ingroup favoritism.

In one study, Tavis (1999) compared the use of *I* and *They* with positive and negative behaviors. In these studies, participants were asked to write down behaviors that could be judged as good or bad, and to describe whether the behavior was more common for themselves or for others. If participants assumed that the behavior was more common for themselves, they had to start the sentence with *I*, whereas if the behavior was more common for other people, they had to start the sentence with *They*. The results showed that participants combined *I* more often with positive behaviors and *They* more often with negative behaviors. The abstraction level of the behavior was coded in accord with LCM (Semin & Fiedler, 1988). In line with the findings on LIB, positive behavior of *I* was more abstract than positive behaviors of *They*, whereas negative behavior of *They* was more abstract than negative behavior of *I*.

They has also been used as a stimulus in studies that test construal level theory (CLT; Trope & Liberman, 2003). According to CLT, mental imaginary is based on distances in space, time, relations and, probabilities, and perceptions of such different distances are interrelated. The distances are egocentric such that the reference point is the self, the here and the now. Accordingly, it was hypothesized and found that pronouns including the self (*We*) were recognized more quickly when presented close to participants, whereas pronouns not including the self (*They*) were recognized more quickly when presented farther away (Liberman & Trope, 2008).

Pronouns in Social Categorization (PSC)

Within this thesis, I propose a model for pronouns called “Pronouns in Social Categorization” (PSC). The PSC includes important social categorizations such as self-inclusion versus self-exclusion, individuality versus collectivity, and gender. The PSC is used to structure the pronouns and explain the motivations for people to use pronouns in evaluative contexts.

In the inclusiveness dimension, first personal pronouns (*I*, *We*) are categorized as self-inclusive, and third personal pronouns (*He*, *She*, *They*) as self-exclusive. The second dimension reflects categorization of people as individuals or collectives, such that singular pronouns (*I*, *He*, *She*) correspond to individual levels of social categorization, and plural pronouns (*We*, *They*) reflect collective levels. I call this the individual/collective dimension. Among individual self-exclusive pronouns, there is also a third aspect including gender (*He*, *She*; see Table 1).

Table 1: Model of pronouns in social categorizations (PSC) ¹

	Self-inclusive (1 st personal pronouns)	Self-exclusive (3 rd personal pronouns)
Individual (Singular)	I	He/She
Collective (Plural)	We	They
Gender		He & She

Note: Grammatical categorization within parenthesis.

The aim of this thesis is to examine whether pronouns are associated with semantic contexts of different valence in ways that reflect psychological perspectives and biases. The research involves experimental studies, where participants generate sentences, and studies of natural language such as written media news messages. Below I describe how evaluations might be embedded in written statements. Thereafter follows a more detailed description of the dimensions, and the predicted patterns for how pronouns will be used

¹ Second personal pronoun *You* were not included since it is not possible to test the individual/collective dimension for this word.

in evaluative contexts. Finally, I describe how different communicative situations might influence this pattern.

Evaluative Communication and Linguistic Biases

Language is a vessel for transferring evaluative messages about intergroup relations (Osgood, Suci, & Tannenbaum, 1957; Sutton, 2010), including explicit as well as implicit content. Explicit content is, for example, evaluative adjectives in explicit person or group descriptions (e.g., “Swedes are beautiful”, “Danes are ugly”), whereas implicit information includes subtle differences in word choice, for example by linguistic abstraction (Maass et al., 1995; Maass et al., 1989; Semin & Fiedler, 1988; Wigboldus et al., 2000).

Linguistic biases in abstraction levels seem to be more difficult to control than explicit judgments about groups. In a study by Franco and Maass (1996), linguistic biases were compared to traditional assessments of ingroup bias, such as trait evaluations or resource allocation. Basketball fans of two different teams were compared: the first supporter team was known for being rather aggressive, and the second team for considering aggressive behavior unacceptable. The results demonstrated that the aggressive fans showed stronger ingroup bias on traditional assessment, whereas the fans of both groups showed the same degree of linguistic biases (Franco & Maass, 1996). Thus, it has been suggested that linguistic bias as described in LIB and LEB is an implicit indicator of prejudice, such that the bias occurs without the speaker’s intentional control (von Hippel et al., 1997, 2008).

LIB and LEB include analyses of the abstraction level people use when describing the behavior of different groups. However, evaluations of people or behavior can be expressed in language by means other than direct descriptions. For example, describing a specific person in a positive context (e.g., together with beautiful people at a nice party) might implicitly convey a message that this person should be evaluated positively. In a similar vein, I suggest that evaluative differences between social categories can be expressed in language, not only when groups or persons are described or compared, but also as a general bias in the semantic context of social categories.

In this thesis, it is argued that people are biased in their choice of semantic context for pronouns in ways that reflect fundamental social psychological biases (self-, group-serving biases, and gender stereotypes). Some of these biases are relatively stable, whereas other biases are affected by motivations in specific communicative situations, as will be described further below.

The Inclusiveness Dimension

The inclusiveness dimension of the PSC model concerns whether a pronoun includes the self (*I, We*), or is self-exclusive (*She/He, They*). This distinction is used to examine whether the use of these pronouns reflects one of the most studied phenomena in social psychology, namely self- and group-serving biases (see, for example, Brewer, 1979, 2007; Cortes, Demoulin, Rodriguez, Rodriguez, & Leyens, 2005; Critcher, Helzer, & Dunning, 2011; Sedikides & Gregg, 2008; Tajfel & Turner, 1979; Tavis, 1999). People rate themselves more positively than they rate other people, and rate their own groups more positively than other groups. Group-serving biases appear in real groups as well as in experimental groups. Research has shown that merely categorizing people who do not know each other into groups based on trivial criteria, the so-called minimal group paradigm (Tajfel & Turner, 1979), leads to group-serving biases in the form of more favorable judgments of, or by the allocation of more resources to the ingroup as compared to the outgroup (e.g., Brewer, 1979; Mullen, et al, 1992).

In the social psychological literature, I have found one study that used pronouns to examine self- and group-serving biases (Perdue et al., 1990). In a first experiment, participants were presented with ingroup words (*We* and *Us*) and outgroup words (*They* and *Their*), together with nonsense syllables (e.g., *xkt, djif*). The task was to determine which word in the pair was a real word. In a subsequent task, participants were asked to judge the pleasantness of the nonsense syllables. The results showed that words paired with ingroup pronouns were more positively rated than words paired with outgroup pronouns. The second and third experiments used subliminal priming of ingroup and outgroup pronouns. After subliminal exposure to the pronouns, participants were instructed to decide whether a subsequent adjective was positive or negative. Reaction times to positive adjectives were shorter following ingroup pronoun primes than outgroup pronouns, whereas negative adjectives reversed this pattern. Individual pronouns - *Me* and *You*- were also included in the studies but without significant effects. The lack of effect for the individual pronouns could be due to the use of the pronoun *You* which does not distinguish between the individual and the collective level. In the PSC model used in the current thesis, the individual equivalents to *They* are *He/She* rather than *You*. Hence, *He and She* are included as proxies for individual self-exclusive pronouns.

Based on the vast evidence for self- and group-serving biases (Mullen et al., 1992; Sedikides & Gregg, 2008), it is expected that people will select a more positive semantic context for self-inclusive (*I & We*) than self-exclusive pronouns (*She/He & They*) when using the pronouns in written language. Although this pattern is expected to be stable across different communication settings, the magnitude of the differences may change.

Individual and Collective Dimension

The idea that people categorize themselves and others, both as individuals and as group members, also has a long history in social psychology. According to social identity theory (Tajfel & Turner, 1979; Tajfel & Turner, 1986), people's identities consist of two parts; an individual and a social identity. The individual identity includes personal and physical traits (e.g., being honest, nervous, and tall), whereas the social identity is derived from groups or roles that the individual belong to (e.g., being a mother, a Swede, a psychologist). In more recent research, the social identity has also been divided into a collective identity associated with membership of larger groups (e.g., a Swede) and a relational identity based on relational attachments (e.g., being a mother; Brewer & Chen, 2007; Brewer & Gardner, 1996).

There is no overall psychological theory that is directly applicable in predicting potential differences in the evaluative contexts around individual and collective pronouns. One line of research suggests that the individual self (*I*) rather than the collective (*We*) is the primary motivational base for self-definition. A typical finding is that people who are asked to describe their characteristics often list more individual than collective attributes (Gaertner, Sedikides, & Graetz, 1999) of their identity regardless of the culture they belong to (del Prado et al., 2007; Gaertner et al., 2012). In addition, a meta-analysis (see, for example, a meta-analysis of Gaertner, Sedikides, Vevea, & Iuzzini, 2002) has shown an individual primacy. For example, individuals reacted more strongly to negative feedback given to the individual self than to the group one belongs to.

Nevertheless, in some situations, this pattern can change. A relational self might become activated when people interact in dyads or small groups on a personal basis, and this may lead to an extension of the self to include other people (Brewer & Gardner, 1996; del Prado et al., 2007). Moreover, studies on attributions of performances suggest that when people judge a group performance in a confidential setting, they exaggerate their own importance in the group ($I > We$), whereas in a public setting, the group is boasted about ($We > I$; Baumeister & Ilko, 1995; R. S. Miller & Schlenker, 1985).

While research thus to some extent has documented evaluative differences between the individual and collective level among self-inclusive pronouns, no study has, to my knowledge, examined such biases among self-exclusive pronouns (*She/He* vs. *They*). Therefore, notions from research on prejudice, and on dual information processing in social cognition (Allport, 1954/1979; Brewer & Harasty Feinstein, 1999; Dovidio, Glick, & Rudman, 2005; Fiske, Lin, & Neuberg, 1999) are used to derive predictions regarding the evaluative contexts of these pronouns. Allport's contact theory (1954/1979) suggests that a contact with individual outgroup members may reduce intergroup hostility and derogation of the outgroup (N. Miller, 2002),

because individual outgroup members do not evoke negative evaluations to the same extent as their groups do. Studies on dual processes in impression formation separate category-related from person-specific information processing (Brewer & Harasty Feinstein, 1999; Fiske et al., 1999; Fiske & Neuberg, 1990). Categorical processing refers to top-down processes, such that an impression is formed through the lenses of the social categories associated with the person. Person-specific processing on the other hand, involves bottom-up processes such that people base their impression on the actual details of the target at hand. Studies have shown that information processing based on individual characteristics leads to more positive evaluations of a person, compared to processing based on categorical information (Fiske et al., 1999). Hence, research suggests that outgroup derogation is more pronounced at the group- compared to the individual level. Based on these findings, I predict that in the current studies, *He* and *She* will occur in more positive contexts than *They*.

Taken together, it seems reasonable that as a default, a more positive semantic context will be chosen for the individual as compared to the collective pronouns. This pattern might be moderated by the situations where the statements are produced as specified below.

Situational Influence on Evaluative Contexts

While self-inclusive pronouns are consistently expected to be associated with more positive contexts than self-exclusive pronouns, it seems reasonable that the evaluative contexts of individual and collective pronouns may vary as a result of changes in the communicative situation, for example whether the setting involves conflict or cooperation, or whether communication is private or public. Below, I describe four different prototypical situations where such changes may occur.

Individual situations

As reviewed above, studies have shown that the individual self is often primary to the collective self (del Prado et al., 2007; Gaertner et al., 2012; Gaertner et al., 2002), such that people list more individual than collective aspects of the self (Gaertner et al., 1999), and react more strongly to threats to the individual than to the groups the individual belongs to. Moreover, studies show that people self-enhance more in private than public situations (Baumeister & Ilko, 1995; R. S. Miller & Schlenker, 1985). From this line of research, it is assumed that the valence around pronouns will favor the individual rather than the group in individual situations where no other people are salient, such that contexts of *I* will be more positive than contexts of *We*.

Interpersonal situations

As described earlier, a relational self might be activated in situations involving cooperation (Brewer & Gardner, 1996; Gaertner et al., 2012). The relational, or, interpersonal, self-concept is associated with situations where people interact in dyads or small groups on an individuated basis, showing a mutual concern for the interests of the other (Baumeister & Leary, 1995; Brewer & Gardner, 1996). There are indications that when relational aspects of the self-concept become activated, motivational focus may extend to include both *I* and others in a *We*, for example in partner relations (Brewer & Gardner, 1996; Fitzsimons & Kay, 2004). Such extension could also be the result of a strategy to establish a collaborative, interpersonal relation with an interaction partner (Aronsson & Sätterlund-Larsson, 1987; Brown & Levinson, 1987; Wilson, Kunkel, Robson, Olufowote, & Soliz, 2009). Moreover, a higher frequency of *We* communication in interpersonal collaboration has been associated with better problem solving (Sexton & Helmreich, 2000) and stronger commitment toward a partner in a relationship (Fitzsimons & Kay, 2004). If a higher frequency of *We* is used as a way to establish a positive atmosphere in collaborative settings, it seems reasonable that people in such situations may also change the semantic context around *We* to become more positive.

If people in interpersonal settings extend their self-concept to include other individuals, it could be expected that an interpersonal situation would diminish the evaluative differences between *I* and *We*. Similarly, if a higher frequency of *We* is used as a way to establish a positive atmosphere in collaborative settings, it seems reasonable that people in such situations may also be motivated to change the semantic context around *We* to become more positive. Hence, in an interpersonal situation, it could be expected that collective self-inclusive pronouns will occur in semantic contexts of similar valence as, or of higher valence than *I*.

Intergroup situations with a potential conflict

Intergroup situations with a potential for conflict easily result in strong group-serving biases (Brewer, 1999; Maass, 1999; Sherif, Harvey, White, Hood, & Sherif, 1961). Activating a group identity is often also associated with group comparisons and distancing from other groups. The collective identity includes social identities associated with memberships of larger groups, for example nationalities, political positions, professional roles, or sports teams (Brewer & Gardner, 1996). Kenworthy and Miller (2002) have shown that opinions and attitudes are strongly connected to social identities, and that activation of such identities may result in both self- and group-serving biases. In studies on linguistic biases (Maass et al., 1996), it has also

been found that biases are particularly strong when tested on attitude groups (e.g., hunters and environmentalists). Kenworthy and Miller used ratings of rationality and externality to assess self-serving biases concerning attitudes. Rationality means that the origin of an attitude is based on logical reasoning whereas externality means that the attitude is based on group pressure and on being influenced by other people. Typically, people see themselves (*I*) as more rational and less externally influenced than those who agree (*We*), and even more so than those who disagree (*They*; Bäck, Esaiasson, Gilljam, & Lindholm, 2010; Kenworthy & Miller, 2002).

In this thesis, it is assumed that reminding people of an attitude issue where people have strong opinions constitutes an intergroup situation with potential conflict. In accordance with previous research, it is assumed that this will result in an increased differentiation between the semantic contexts of self-inclusive and self-exclusive pronouns, both at the individual (*I* > *He/She*) and the collective levels (*We* > *They*).

Public situations

Research shows that while people prefer to enhance *I* relative to *We* in an individual, confidential situation, the reverse is true in public or interpersonal settings (Baumeister & Ilko, 1995; S. Miller & Schlenker, 1985). For example, when people judge a group's performance in a confidential setting, they exaggerate their own importance in the group, whereas in a public setting, the group is boasted about (Baumeister & Ilko, 1995; S. Miller & Schlenker, 1985). Communicating positively about the ingroup in public settings may be motivated by self-presentational concerns (e.g., to appear unselfish), but may also be used as a means to facilitate the finding of a common ground with the listener (Aronson & Sätterlund-Larsson, 1987; Brown & Levinson, 1987). Based on these findings, together with the fact that media represent a public rather than a private domain, it is hypothesized that in media reports, the context of *We* will be at least as positive as the context of *I*.

The Gender Dimension

As described previously, gender is an additional dimension for the individual self-exclusive pronouns in the PSC. On theoretical grounds, two opposing predictions about the evaluative semantic context of the gender pronouns can be derived.

Throughout history, men have been associated with more power and influence over decisions than women (Bussey & Bandura, 1999; Eagly & Steffen, 1984; Rudy, Popova, & Linz, 2010), and people automatically

misattribute status to men rather than to women (Banaji & Greenwald, 1995; Ridgeway, 2001). It has also been demonstrated that men are more commonly represented both in the literature and in the news media (Armstrong, 2004; Matud, Rodríguez, & Espinosa, 2011; Rudy et al., 2010; Schwartz, 2011), which may be taken to implicitly suggest that men are more highly evaluated than women (Rudy, Popova, & Linz, 2011).

However, psychological research has also demonstrated a “women-are-wonderful-effect” (WAW; Eagly & Mladinic, 1989; Eagly, Mladinic, & Otto, 1991). Thus, the content of the female stereotype is associated with more positive values than that of the male stereotype (Eagly & Mladinic, 1994). Studies have also shown that general evaluations of men and women often favor women (Rudman & Goodwin, 2004), however, the WAW-effect has never been demonstrated in a male-dominated area, such as in leadership or business (Eagly et al., 1991; Kusterer, Lindholm, & Montgomery, 2013).

In this thesis, I study the evaluative context for *She* and *He* in mass media news. Because most topics in news are associated more with men than with women, and with men in more powerful positions (Collins, 2011; Rudy et al., 2010), I expect an overall bias in the news messages favoring men, both with regard to frequencies of *He* and *She*, and to the valence of the semantic contexts.

Underrepresented social categories in the media are typically described with category labels. Hence, while men are athletes or business directors, women are *female* athletes or *female* business directors (Stahlberg, Braun, Irmen, & Sczesny, 2007). Such explicit labeling is in line with norm theory (Kahneman & Miller, 1986), describing how group comparisons are based on one group being the norm and the other group being “the effect to be explained”. Studies have shown that men more often than women are seen as the norm category (Hegarty & Buechel, 2006; Miller, Taylor, & Buck, 1991). For example, female leadership is described as different from (male) leadership (Bruckmüller, Hegarty, & Abele, 2012). Moreover, “the effect to be explained” often includes references to essential features or stereotypical attributes of that category (Hegarty & Pratto, 2001). Hence, female leadership is considered as more female than male leadership is male. Describing women with stereotypical and essential features might lead to a homogeneity effect, (Linville, 1982), such that women are described as more similar to each other than men are.

Method

Due to the scarcity of methods for examining evaluative biases in language, developments of some methodological tools were necessary. For the experiments in Study I, a sentence generating task was developed to experimentally test the selection of evaluative contexts for pronouns. In Study II and III, natural language in which pronouns occur was studied by latent semantic analysis (Landauer, 1998; Landauer & Dumais, 1997; Landauer, McNamara, Dennis, & Kintsch, 2007). For these studies, we created a so-called semantic space from a large corpus of Reuter news media messages. In the next step, algorithms were developed for implementing valence in the analyses of the semantic space.

The Evaluative Sentence Generating task (ESG)

The ESG task was developed to experimentally test how people select contexts of different valence around personal pronouns. In the ESG task, participants are instructed to generate a number of three-word sentences that contain 1) a personal pronoun, 2) a verb and, 3) an evaluative adjective. Stimuli words are presented in three circles, where the first circle contains the pronouns, the second the verbs and the last one the adjectives (see Figure 1). The instructions for the test can be varied in order to activate specific communication situations and social identities.

The Evaluative Sentence Generating Task

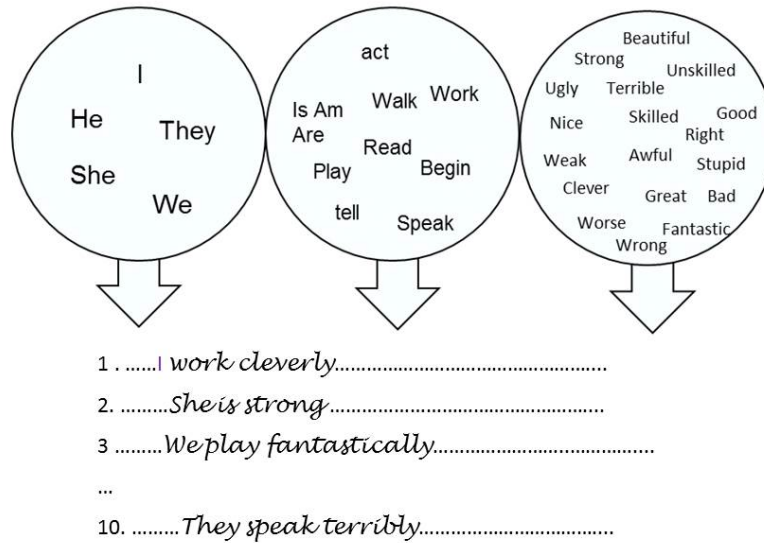


Figure 1. In the ESG task, participants are instructed to generate three-word sentences. The circles show the words that should be included in the sentences. Below are the ten rows in which participants write the sentences either manually or using a computer.

For the current thesis, the stimuli words in the ESG task were selected as follows. Five personal pronouns representing the inclusiveness and the individual/collective dimensions were used (*I, We, She/He & They*). The verbs were neutral (e.g., *am, walk, read*, rather than *love, hit* or *kiss*), and could be combined with most of the adjectives. The adjectives were familiar, and were pretested to be unambiguously positive or negative (e.g., *good, bad, ugly, beautiful*). The number of positive and negative adjectives should always exceed the number of sentences that participants are asked to generate. Thus, participants are able to construct meaningful sentences either with only positive or only negative adjectives as they prefer, and are never forced to choose an adjective with a particular valence due to a lack of available alternatives of the other valence. The order of the words in the circles is counterbalanced across participants.

The coding of the sentences is straightforward, such that a pronoun combined with a positive adjective is coded with a positive value (+1), and a pronoun combined with a negative adjective is coded with a negative value (-1). Subsequently, the average valence is computed for each pronoun cate-

gory (self-inclusive individual, self-inclusive collective, self-exclusive individual & self-exclusive collective).

Manipulation of the communication setting

Research has shown that linguistic biases may change as a result of the communicative situation and whether social identities and intergroup relations are activated or not (Baumeister & Ilko, 1995; Giles & Ogay, 2007; Maass, 1999). In order to manipulate the activation of social identities the instructions for the ESG task can be varied. In the current thesis three different instructions were used to manipulate the communication situations (individual, interpersonal and intergroup situations). The individual instructions were as follows:

Your task is to create 10 sentences that are meaningful to you. They should be grammatically correct, and be based on the words in the circles below. The sentences should be three words long and the first word should be taken from the first circle, the second word from the second circle, etc. You are allowed to inflect the words (e.g. Work -> Works, Slow -> Slowly)

The instructions where an interpersonal situation was activated were identical to the first, except for one sentence added to the beginning and the end of the instructions:

You have randomly been connected to another worker from Mechanical Turk². Your task is to create 10 sentences When you have completed the sentences, you will see the sentences of your co-worker, and your co-worker will see the sentences of yours.

The instructions where an intergroup situation is made salient was instigated by a paradigm developed by Kenworthy and N. Miller (2002), in which opinions on important issues are used to create social boundaries and potential conflict. The attitude is activated by a question, and when participants have stated their attitude, they are told to elaborate on the origins of their own attitude, the attitude of people who agree, and of people who disagree by answering a number of questions. Subsequently, the participants complete the ESG task by following the same instructions as in the individual condition. In the current thesis the attitude question was.

What do you think is more important right now? A) For the federal government to investigate possible terrorist threats, even if that in-

² The Mechanical Turk is an internet-based market place that is used for social sciences to collect data by internet surveys.

trudes on personal privacy, or B) for the federal government not to intrude on personal privacy, even if that limits its ability to investigate possible terrorist threats.

After the instructions, all participants completed the ESG task. All instructions were expected to generate self- and group serving biases. The collaborative instruction was expected to diminish differences between *I* and *We*, and the instruction to elaborate on attitude conflicts was expected to magnify the differences between the self-inclusive and self-exclusive pronouns.

Latent Semantic Analysis

“A corpus is an empirical record of human behavior as surely as the results from laboratory experiments”

Handbook of latent semantic analysis, p. 478

Previously, semantic analyses were limited to qualitative coding, and had practical problems such as requiring a long time for coding and extracting information, and limited possibilities to analyze large corpora (Pitts & Nussbaum, 2006). Qualitative coding also includes extensive preparation of coding schemes, potential biases and mistakes of human coders. These problems might be avoided with computerized methods. As computers become more powerful and various types of written material became accessible, a range of computational sentiment analysis methods has been introduced (for a review, see Tausczik & Pennebaker, 2010). The most extensive data-driven approaches are those that convert written corpora into semantic spaces. One such promising technique is latent semantic analysis (LSA; Landauer & Dumais, 1997; Lenton, Sedikides, & Bruder, 2009).

The LSA was introduced both as a theory and a method for determining how semantic meaning is derived by the contexts in which words are used (Landauer & Dumais, 1998; Landauer, 1999; Landauer et al., 2007). LSA relies on singular value decomposition, which is akin to factor analysis and multidimensional scaling (Landauer & Dumais, 1997; Landauer, et al., 2007). The computation of LSA results in a huge matrix where each word is represented on a word-vector that is derived from all the contexts in which this specific word occurs, with factors that estimate how each word should be understood in relation to all other words in the space.

In comparison to other computational methods, LSA is a measure of a larger pattern of co-occurrences across a vast number of local contexts (Campbell & Pennebaker, 2003; Foltz et al., 1998; Landauer, 1998). The LSA does not rely only on simple first order co-occurrences between words

but also on higher order co-occurrences (Landauer, 1998; Landauer & Dumais, 1997; Lenton et al., 2009). First order co-occurrences refer to associations between words that occur within the same document. Second order co-occurrences refer to words that may never be used in the same document but occur in the same type of contexts. For example, the word *physician* and *doctor* are examples of second order co-occurrences since these words appear in the same type of context, but not necessarily within the same document (Lenton et al., 2009). As a consequence, the word-vectors for *physician* and *doctor* will be located at a proximal distance to each other in the semantic space. When a semantic space has been created, it is possible to extract the meaning of the words in the space. This is completed by extracting so-called semantic associates. For example, the semantic associates of *physician* are represented by a word vector in the space, with words that are proximal, representing synonyms, inflections, and the most common contexts of physicians, for example, *doctor*, *hospital*, *nurse*, *surgery* and so forth. Similarities between words can be computed by the cosine between the word vectors in the space, and valence might also be added, as will be described below.

Material

To create the semantic space, a corpus of approximately 800 000 thousand (404 MB) Reuters news messages published in 1996 and 1997 was used. When the current project was initiated, this data set was released publically by Reuters, and it was one of the richest samples available for research. Reuters articles are short news messages covering, for example, business, politics, entertainment and sports (for examples see, www.reuters.com). The INFOMAP software (<http://www.infomap-nlp.sourceforge.net>) was used to perform the LSA algorithm. The quality of the semantic space (based on how closely synonyms are located in the space) is improved if the words used to build the matrix contain meaningful semantic content. Therefore, about 750 high frequency, non-content words (e.g., and, but, etc.) were removed before reduction of the matrix (Landauer et al., 2007). From the original dataset the remaining 15000 most common words were used to build a space with 100 dimensions.

Introducing valence to the space

For comparisons of the evaluative contexts around the pronouns, each pronoun occurrence was assessed with a valence that represents the averaged valence of the context in which the pronoun occurs. Using human coders in such a project would be highly resource- and time-consuming. Moreover, due to the difficulty of achieving valid criteria that could be used by human

coders to evaluate media text intended to be objective in nature, one would expect low inter-rater reliability.

To assess valence for all the words in the semantic space, the Affective Norms for English Words word list (ANEW; Bradley & Lang, 1999) was used as a dependent measure. The ANEW word list contains more than one thousand nouns ranked for valence by human participants (on a Likert scale from 1-9). Multiple linear regression was used to create a vector across the 100 dimensions in the semantic space that best fitted the valence of the words in the ANEW word list. The quality of this valence prediction depends on the number of dimensions used as predictors. Therefore, we used cross-validating by the leave-one-out-method (Picard & Cook, 1984) to find the best model and decide the number of dimensions. A single observation from the original sample was used as the validation data, and the remaining observations as the training data. This was repeated so that each observation in the sample was used once as the validation data. Using this method, the best model was found for the 85 first dimensions in the space. The correlation between ANEW and LSA was $R^2 = .48$ for the cross-validated sample, and $R^2 = .62$ for the total sample. Differences in how LSA estimates similarities in a text have previously been compared to human inter rater congruence, with similar results in rating by LSA or by human experts (Landauer, Laham, & Foltz, 2003; Landauer, Laham, Foltz, Shermis, & Burstein, 2003; Landauer et al., 2007). Finally, the valence of each pronoun occurrence was assessed by averaging the 15 words preceding and following each pronoun. A 30-word window is also used in the SVD-algorithm. The means and the standard deviations of the context associated with each pronoun could then be calculated.

General Aims

The overall aim of this thesis was to investigate whether pronouns occur in semantic contexts reflecting psychological biases. Specifically the following aims were stated:

- 1) To investigate whether pronouns are used in contexts of different valence reflecting self- and group serving biases, such that *I* and *We* occur in contexts of more positive valence than *He*, *She* and *They*. This was investigated experimentally (Study I) and by analyzing written media news text (Study II).
- 2) To investigate whether different communication situations change the pattern of contextual valence around the pronouns. For example, if collaboration may influence the contexts of *I* and *We*, or whether competition magnifies the differences between the pronouns. This was analyzed in Study I.
- 3) To investigate whether news media use gendered pronouns, *She* and *He*, in different frequencies, and in evaluative and semantic contexts that reflect gender biases in favor of *He*. This was explored in Study III.

Overview of Studies

Study I:

Gustafsson Sendén, M., Lindholm, T., & Sikström, S. (2014). Selection bias in choice of words: Evaluations of "I" and "We" differ between communication contexts but "They" are always worse. *Journal of Language and Social Psychology*. 33(1), 47-65.

Aim

The aim was to experimentally test whether individuals select evaluative contexts for pronouns that reflect self- and group-serving biases. The experiments were completed in three different settings: an individual, an interpersonal, and an intergroup setting.

Background and hypotheses

In everyday life, people use language to communicate evaluative messages about social categories. Studies have shown that such linguistic biases are motivated by a desire for positive self-presentation (Goffman, 1959; Maass et al., 1995; Maass et al., 1989; Semin & Fiedler, 1988; Wigboldus & Douglas, 2007). Studies have also shown that linguistic biases are affected by interaction goals (de Montes et al., 2003), and are emphasized when there is an intergroup threat (Franco & Maass, 1996). The current study investigated whether individuals use pronouns in evaluative contexts that reflect self- and group-serving biases, and whether intergroup and interpersonal situations could change the pattern of the evaluative context.

The *pronouns in social categorization (PSC)* model was used to derive the hypotheses for two dimensions of the pronouns: an inclusiveness dimension (*We, I* vs. *He/She, They*) and an individual/collective dimension (*I, She/He* vs. *We, They*). In contrast to previous studies on linguistic biases, we did not present any specific social categories or behaviors to evaluate. Rather, we studied how individuals choose to combine personal pronouns with positive and negative adjectives in ways that have evaluative implications for social categories at the individual and group level.

The first hypothesis was that self-inclusive pronouns should be selected for contexts of more positive valence than self-exclusive pronouns. This hypothesis was derived from the huge body of literature on self- and group-serving biases (Critcher et al., 2011; Sedikides & Gregg, 2008). Based on empirical findings that the individual self is primary over the collective self (Gaertner et al., 2012), and that outgroup derogation occurs at the category rather than the individual level (Allport, 1954/1979; Dovidio et al., 2005) the second hypothesis stated that individual pronouns should be selected for more positive contexts than collective pronouns both at the self-inclusive and self-exclusive level.

In Experiment 2, the situational influence on the selection bias was examined. While the individual self is often motivationally primary (Gaertner et al., 2012), there are indications that interpersonal situations activate relational aspects of the self-concept, and a motivation to include the other in the self by the use of *We* (Fitzsimons & Kay, 2004). Such extension could also be the result of a politeness strategy, as a means to establish a collaborative, interpersonal relation with an interaction partner by suggesting that the individual does not differentiate between own and others interest (Aronsson & Sätterlund-Larsson, 1987). Thus, if *We* is used to create a positive atmosphere in interpersonal situations, the pattern of the semantic contexts around self-inclusive pronouns may also change, such that the context around *We* and *I* will be of similar valence (Hypothesis 3).

At the collective, *intergroup* level, social identities associated with memberships of larger groups become central, and people interact on a categorical rather than individual basis. Such intergroup situations, particularly where there is potential for conflict, easily result in strong group-serving biases (Brewer, 1999; Sherif et al, 1961). Thus, we expect that an intergroup situation with potential conflict will result in stronger self-serving biases, as compared to a situation without conflict, both at the individual (*I* > *She/He*) and the collective levels (*We* > *They*; Hypothesis 4).

Method

The ESG task (for details, see Figure 1, p. 39) was developed to test the above hypotheses. Participants were presented with three word types (pronouns, verbs, and evaluative adjectives), and were asked to generate three-word sentences.

Two experiments were conducted. The first included only an individual situation and was completed by Swedish and American participants. In Experiment 1a, psychology students ($N = 34$, $M_{\text{age}} = 26$, $SD = 6.4$, women = 65%) at Stockholm University, Sweden, completed the task individually in a lab. In Experiment 1b, participants were recruited, and completed the ESG

task at the Mechanical Turk service (www.mturk.com, $N = 34$, $M_{\text{age}} = 35$ years, $SD = 14.7$, women = 68 %)

In Experiment 2, Americans recruited via www.mturk.com participated ($N = 550$, $M_{\text{age}} = 35$, $SD = 12.4$, women = 53%). The participants were randomly divided into three communication settings: an individual setting (which replicated Experiment 1a and 1b), an interpersonal setting ($N = 190$), and an intergroup setting ($N = 184$).

In the individual setting, the participants were asked to generate three-word sentences. The interpersonal setting was activated by a sentence in the instruction giving the information that the participant was randomly connected to another participant at the Mechanical Turk service, and that sentences should be exchanged between the two workers. The intergroup setting was instigated by elaborating on own and opposing attitudes (Kenworthy & Miller, 2002) concerning governmental activities against terrorism.

Results

Throughout the three experiments, the results revealed that self-inclusive personal pronouns were combined with positive adjectives more often than self-exclusive pronouns. This finding was thus replicated across the three samples, occurred both among individual and collective pronouns, in Swedish and English, and regardless of whether the participants generated sentences individually, or in interpersonal or intergroup conditions. Moreover, across the studies, individual pronouns were combined with the most positive context. There was one important exception to this pattern: Experiment 2 showed that the difference between *I* and *We* was attenuated in the interpersonal setting that is, when collaboration and another person became salient. Figure 2 summarizes the results of Experiment 2. When participants expected to interact with another person, they selected a similarly positive context for *We* and *I*. Participants who considered intergroup relations based on opposing attitudes both enhanced the evaluative contexts of self-inclusive pronouns and decreased the valence around the self-exclusive pronouns more than other participants.

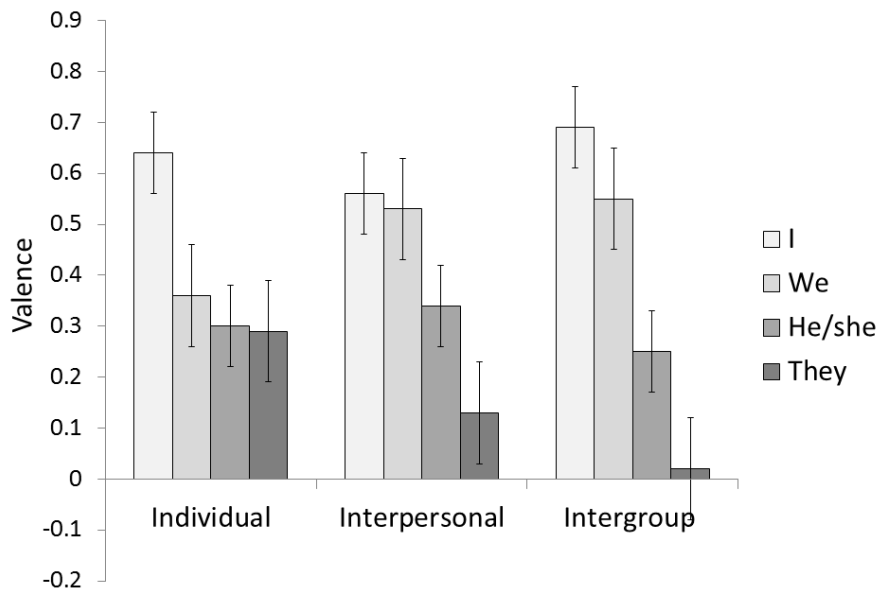


Figure 2. Valence of the pronouns in the three experimental conditions. Error bars represent the standard error of the mean.

Conclusions

The studies showed that people express self- and group-serving biases when using pronouns in verbal statements. The differences occurred in self-generated verbal messages in the absence of activation of specific groups or identities. It is conceivable that people may use this type of evaluative communication with pronouns to highlight or decrease differences between social categories in ways that are beneficial to the speaker. For example, it may be a means to enhance the self, increase collaboration and commitment, or to increase the distance between groups with opposing attitudes. The ESG task constitutes a new, simple and effective tool for measuring implicit self- and group-serving biases in language.

Study II:

Gustafsson Sendén, M., & Sikström, S. (2013). Biases in news media as reflected by personal pronouns in evaluative contexts. *Social Psychology*.

Aim

The study examined whether the contexts of pronouns in news media differ in valence in ways that reflect self- and group-serving biases. A semantic space of media news was created, and methods for the valence analyses were developed.

Background and hypotheses

“Everything we do as Reuters journalists has to be independent, free from bias and executed with the utmost integrity” (Reuters, 2008)

Although the directives of unbiased news in the quote above are clear, previous research has shown that the media tends to be biased in reporting about specific social categories, such as men, women, or minority groups (Geschke, Sassenberg, Ruhrmann, & Sommer, 2010; Koivula, 1999). Most studies on such biases in the media have focused on verbal descriptions or pictures of specified groups. Extending previous research, this study focuses on generic markers for social categories, namely personal pronouns, and analyses the valence of the contexts in which these pronouns occur.

Based on research showing self- and group-serving biases, self-inclusive pronouns were predicted to occur in more positive contexts than self-exclusive pronouns (Brewer, 2007; Cortes et al., 2005; Critcher et al., 2011; Sedikides & Gregg, 2008). While the individual self is often motivationally primary to the collective self, studies have shown that people may enhance their group relative to their individual self in public communication (Baumeister & Ilko, 1995; Goffman, 1959; R. S. Miller & Schlenker, 1985). Hence, collective self-inclusive pronouns were predicted to occur in at least as positive contexts as is true for individual self-inclusive pronouns. The hypothesis on the self-exclusive level was based on research that has shown that outgroup derogation is more pronounced at the collective rather than the individual level (Allport, 1954/1979; Brewer, 1999; N. Miller, 2002). Hence, individual pronouns would occur in more positive contexts than collective pronouns.

Method

Latent semantic analysis (LSA; Foltz, Kintsch, & Landauer, 1998; Landauer, 1998; Landauer & Dumais, 1997; Landauer et al., 2007) was used to build a semantic space from approximately 800 000 Reuters news messages. The ANEW database (Bradley & Lang, 1999), including more than 1000 words ranked for valence (on a Likert scale from 1 to 9), was used to predict the

valence of the contexts of the pronouns in the space. A subset consisting of 50% of the original dataset was randomly selected to facilitate the data processing. This subset included about 205 000 subjective personal pronouns ($N_I = 26.863$; $N_{We} = 46.340$, $N_{He/She} = 90.704$; $N_{They} = 41.363$). The valence for each pronoun was computed based on the fifteen words preceding and succeeding the single pronoun. Comparisons in valence were then computed with ANOVAs.

Results

Figure 3 shows that self-inclusive pronouns occurred in more positive contexts than self-exclusive pronouns, reflecting self- and group serving biases. An interaction effect showed that the collective self-inclusive pronouns (*We*) occurred in the most positive contexts, whereas the collective self-exclusive pronouns (*They*) occurred in the least positive contexts. Simple analyses showed that *We* occurred in contexts of more positive valence than *I*, and that *He/She* occurred in more positive contexts than *They*. The analyses also showed that the contexts of self-inclusive pronouns were more positive than the mean valence in the space, while individual self-exclusive pronouns occurred in weakly positive contexts whereas collective self-exclusive pronouns occurred in less positive contexts compared to the average mean valence.

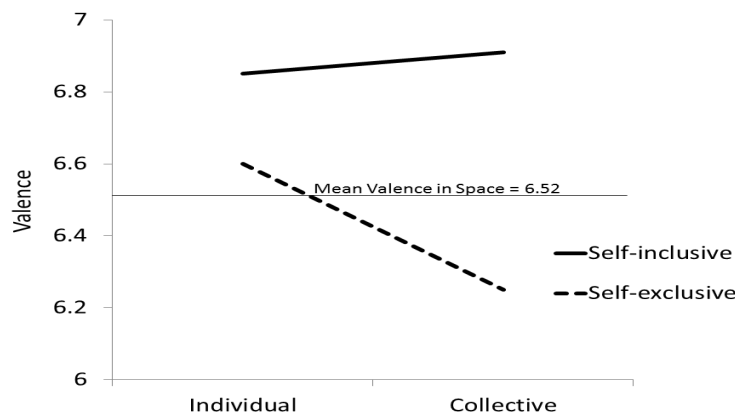


Figure 3: Mean valence for the contexts around personal pronouns in Reuters media news. Valence was measured on a scale from 1 to 9, where 1 indicated the least positive valence and 9 the most positive valence (error bars show standard error of the means).

Conclusions

In media news, personal pronouns are presented in evaluative contexts in patterns that reflect self- and group serving biases. The results of this study add to the literature on linguistic biases in several ways. First, the biases appeared in authentic language, as represented by media news. In addition, all types of words in the pronoun contexts were used to calculate the valence, not only words explicitly describing persons or groups. It is also noteworthy that the biases were expressed by intermediary journalists, who do not refer to their personal identities in writing the articles, and who, according to the Reuters directives, should aim at neutral and unbiased language and content. Because differences are subtle, repeated, and communicated by a source that people rely on as unbiased, these biases are likely to influence readers in their construction of the social world. The scarcity of social psychology studies using written documents could partially be due to a lack of applicable tests measuring aspects related to social phenomena. The LSA and the implementation of valence into semantic spaces seem to be a promising tool for content analysis.

Study III:

Gustafsson Sendén, M., Lindholm, T., & Sikström, S. (pending). “She” and “He” in news media messages: Pronoun use reflects gender biases in frequencies, as well as in evaluative and semantic contexts. *Sex Roles*

Aim

The study examined whether gendered individual self-exclusive pronouns (*She & He*) in a mass media context occur with different frequencies, and are used in semantic contexts that reveal evaluative and descriptive gender biases.

Background and hypotheses

There is a huge body of literature showing that media present men and women in different ways (Collins, 2011; Rudy et al., 2011). The majority of these studies have focused on visual representations of men and women in movies, television or in advertising (see, for example, Furnham & Mak, 1999; Mager & Helgeson, 2011; Neuendorf, Gore, Dalessandro, Janstova, & Snyder-Suhy, 2010). Although there is less research on gender in media news, previous results indicate that news reports also represent men and women differently. The most salient finding is that men are more common in media

news than women, with ratios of three men for each woman in daily newspapers, to ten men per woman in sports news (Armstrong, 2004; Koivula, 1999; Matud et al., 2011; Schwartz, 2011). In line with these findings, it was expected that the pronoun *He* would occur more often than *She* (Hypothesis 1). Researchers have argued that because men are exposed in the media more often than women, and are presented in more prominent positions, it could also be expected that men would be depicted in more positive ways than women (Matud et al., 2011; Rudy et al., 2011). The current study tests this suggestion explicitly by assessing the valence of the semantic contexts in which *She* and *He* occur. It was expected that *He* would occur in contexts of more positive valence than *She* (Hypothesis 2). Under-represented categories, such as women in the media, are often described with explicit labels denoting their category, for example, the *female* business leader or the *female* athlete (Kahneman & Miller, 1986; D. T. Miller, Taylor, & Buck, 1991; Stahlberg, Sczesny, & Braun, 2001). Therefore, it was expected that the contexts of *She* would contain more gender labels than the contexts of *He* (Hypothesis 3). Finally, research has shown that men and women occur in different topics in the media. Thus, women are more frequent in topics related to the female stereotype, such as those concerning health and care, whereas men occur in a broader range of topics (Armstrong, 2006; Rudy et al., 2010). Studies have also shown that interviews with women, compared to those with men, more often focus on family matters irrespective of whether the interviewee is a business women (Lämsä & Tiensuu, 2002), an athlete (Koivula, 1999), or belongs to some other group. If interviews with women include more similar questions as compared to interviews with men, this might lead to a homogeneity effect in the semantic context of *She* such that words associated with *She* in the news media would be more similar to each other, than would be the case for words associated with *He*. (Hypothesis 4).

Method

The semantic space from Study II was also used in this study. The valence of the contexts was assessed by multiple regression based on human ranked evaluations in ANEW (on a Likert scale from 1 to 9; Bradley & Lang, 1999). Comparisons of valence and frequencies were completed by univariate ANOVAs. A qualitative analysis of the semantic meaning of *She and He* in media news, was conducted by considering so-called semantic associates to *She* and *He*. Semantic associates are words that are located at proximal distances to a target word in the space. In this study we extracted the nine words most adjacent to *She* and *He* in the semantic space for the analyses. The distance between each semantic associate and *He* or *She* was calculated as the cosine between these two words. The homogeneity effect (Linville,

1982) can be assessed by comparing the average cosine for the nine semantic associates of *She* and *He* respectively.

Results

The results showed that *He* was about nine times as frequent as *She* was. In addition, *He* occurred in contexts with a more positive valence than *She*. As illustrated in Figure 4, the semantic associates of *She* included more gender labels and words related to family relations. The average distance between the semantic associates of *She* was also shorter than the average distance of the semantic associates of *He*.

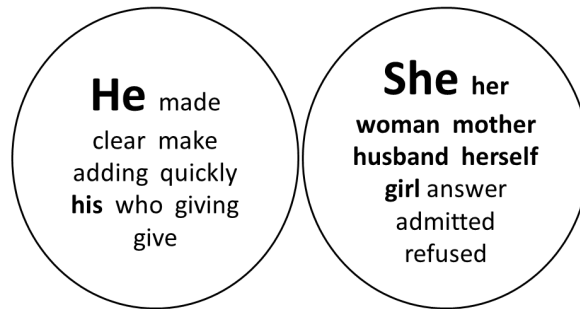


Figure 4: The semantic associates to *She* and *He* in the semantic space. Gendered words are marked in bold. The words are ordered according to how closely they were located to *She* and *He* in the space.

Conclusions

While it has previously been claimed that the media presents men more favorably than women, this study showed that biases come about in various ways; by sheer numbers, in valence of contexts, and by word choice. *He* occurred far more often than *She* and in more positive contexts. The words around *She* were more often gender-labeled and more homogeneous in comparison to words around *He*. Although no analyses were made regarding semantic dimensions other than valence and similarity, it also appears that the semantic associates reflected gender stereotypes by associating *He* with words related to an active position (e.g., adding, give), whereas words associated with *She* were related to passivity or a “defense position” (e.g., admitted, refused). Because differences are repeated on a daily basis, and spread in various form of media news, these gender representations in news media are likely to maintain and reinforce descriptive and evaluative gender stereotypes.

Discussion

The general aim of this thesis was to investigate whether pronouns are used in evaluative semantic contexts in ways that represent social psychological biases. The thesis contributes to the social psychological literature in several important ways. First, the PSC model (pronouns in social categorization) developed in the thesis, categorizes the pronouns in inclusion, individual/collective, and gender dimensions, which turned out to be a fruitful way for analyzing psychological aspects in pronoun use. Furthermore, new methods for examining social evaluations in language were developed in the thesis. The ESG task (evaluative sentence generating) was formed to experimentally test how people select evaluative contexts for the pronouns. Moreover, for the first time, valence was integrated into LSA (latent semantic analysis), and was implemented as a tool for analyzing evaluative biases in written media news.

In this thesis, it was shown that self-inclusive pronouns consistently were used in more positive contexts by participants who generated messages in the lab (Study I), and by journalists in written media news (Study II). These results are in line with the huge literature on self- and group serving biases (Critcher et al., 2011; Gaertner et al., 2002; Sedikides & Gregg, 2008; Tajfel & Turner, 1986; Tavis, 1999).

The evaluative context surrounding *I* and *We* varied according to the specific communicative situation. In individual situations (Study 1, Exp 1a, 1b and 2), more positive contexts were selected for *I* than *We*. However, in a collaboration situation, *We* occurred in contexts of similar valence to *I* (Study 2, Exp 2). Previous research has shown that *We* might be used more frequently in collaborative settings to decrease social distances and establish trustworthy contacts (Brown & Levinson, 1987; Giles & Johnson, 1987; Giles & Ogay, 2007; Semin, 2007). The current results show that such situations may not only change the frequency of *We*, but also the valence of the semantic context in which *We* occurs. In the news media, *We* occurred in more positive context than *I*. This is in line with research demonstrating that people adjust from individual self-enhancement in individual settings to collective self-enhancement in public settings (Baumeister & Ilko, 1995; Sedikides & Gregg, 2008).

Furthermore, an intergroup situation with potential conflict (Study I, Exp. 2) increased the magnitude of the differences between self-inclusive and self-exclusive pronouns, both at the collective and the individual levels. These results are consistent with the notion that outgroup derogation is particularly pronounced in conflicts between groups than in more peaceful intergroup situations (Brewer, 1999; Sherif et al., 1961), although the effect has not been shown for pronouns before.

In the ESG task it was demonstrated that people actively generate evaluative differences between social categories in language, and that the evaluative pattern is modified by the communication situation. This may be taken to indicate that individuals use pronouns in evaluative contexts strategically to influence social perception and social behavior. For example, people may use pronouns in evaluative contexts to influence the listener's perception of themselves, to facilitate collaboration between people, or to enhance differences between groups in competition or conflict. Future research may investigate these questions more thoroughly. Previous research has shown that pronouns influence expressions of identity (Brewer & Gardner, 1996), that differences in abstraction levels in behavioral descriptions influence the listener's attributions (Maass, 1999), and that the use of *We* may influence collaboration and commitment (Pennebaker, 2011). It is therefore probable that also the evaluative contexts around pronouns affect the listener, although this remains to be tested in future studies.

Study III analyzed gender biases in the mass media and several aspects of such biases were found. First, *He* occurred far more as often than *She*, and in contexts of more positive valence. Furthermore, words associated with *She* were more often gender-labeled and typical of the female stereotype. Finally, words surrounding *She* were more homogeneous than words around *He*. This study is the first to quantitatively assess gender evaluations by using the semantic contexts of the pronouns. Although the media have explicit policies against gender-stereotypical language, these results demonstrate that the representation of men and women in the media is biased in line with current gender stereotypes. When I started working on this thesis, the Reuters sample from 1996-1997 was one of the richest sample available for research. Because gender stereotypes are changing (although slowly) it would be of interest to replicate the studies in more recent corpora.

The Pronouns in Social Categorization Model

The PSC model was formed and implemented with two dimensions in the first two studies. To the best of my knowledge, these are the first studies that have implemented two dimensions of social categories simultaneously when investigating self- and group-serving biases. The combination of interper-

sonal and intergroup dimensions in this model opens up new areas of potential research on self- and group-serving biases. Thus, rather than investigating either the interpersonal (Carnaghi et al., 2008; Wigboldus, Semin & Spears, 2000), or the intergroup domain (Graf et al., 2012; Maass et al., 1989), both dimensions could be included simultaneously by using pronouns. For example, it could be tested whether the LIB also occur in pronoun use, such that positive words around *We* are more abstract than positive words around *They*, or whether biases as shown in these research paradigms are stronger for collective than for individual pronouns.

The paradigm on pronouns as invented by Pennebaker and his group (Chung & Pennebaker, 2007; Cohn et al., 2004; Ireland & Pennebaker, 2010; Slatcher et al., 2008) inspired me in the work on this thesis. Because pronouns are among the most commonly used words and have been suggested to be used with less cognitive monitoring than words denoting specific categories, they are especially interesting for research in social psychology, since they may be used to implicitly assess evaluations of social categories. While people may be relatively attentive to the words they combine with specific categories, such as “immigrants”, their cognitive monitoring might be attenuated when using *They* to refer to these groups. In comparison to Pennebaker’s research I did not focus on how traits or situations influences the frequencies of pronoun use. Instead, I used the pronouns as semantic markers for social categories, compared the pronouns to each other by investigating how the pronouns were used in semantic contexts and how these contexts were associated with valence. Valence is the most important aspect of human judgments (Osgood et al., 1957), and establishing methods that assess evaluations of social groups in language hence addresses a central topic in the field.

For individual, self-exclusive pronouns, the PSC also allows analyses of gender biases in language. Although pronouns have been utilized in previous research on gender biases (see, for example, Kennison, 2003; Kennison & Trofe, 2003; Kreiner et al., 2008; Lenton et al., 2009; Twenge et al., 2012) the evaluative aspects of the semantic contexts in which gendered pronouns occur have not been studied previously. It has often been argued that the media represent men more positively than women, but studies demonstrating such a difference using quantitative methods have largely been missing (Collins, 2011; Rudy et al., 2011). Including valence in semantic analyses makes it possible to address such a hypothesis directly.

In addition to analyzing the valence of the semantic context, the third study on gendered pronouns went a step further and extracted the pronouns’ semantic associates and computed the distance between them. These analyses might also be included in future research including all pronouns.

While the gender structure of the pronouns might differ across languages, most languages use the inclusiveness/exclusiveness and the individu-

al/collective dimension. Thus, the PSC model might be easily translated and tested in other languages than English. Taken together, using pronouns seems to be a fruitful approach for studying psychological biases reflected in language, and the PSC model has great potential as a useful tool in this research.

Self- and Group-serving Biases

The main finding in this thesis was that pronouns were consistently combined with semantic contexts reflecting self- and group serving biases. These types of biases are among the best documented, and replicated phenomena within social psychology (Brewer, 1979, 1999; Critcher et al., 2011; Gaertner et al., 2012; Mullen, Brown, & Smith, 1992; Sedikides & Gregg, 2008; Sedikides & Skowronski, 2000). Thus, it might be questioned whether this finding adds anything beyond what we already know. I firmly believe it does.

First, most previous studies have used real or experimental groups rather than pronouns as markers for social categorization. For example, in the pioneering studies by Sherif et al. (1961), participants were divided into groups with interpersonal and intergroup interactions. In the minimal group paradigm, individuals are assigned to one of two groups by trivial criteria without any involvement with ingroup members (Brewer, 1979; Mullen et al., 1992). Regardless of method, the group serving bias is typically explained as an effect following social categorization that occurs after identification with the groups one is categorized into (Brewer, 1979, 2007; Maass et al., 1996; Maass et al., 1989; Turner et al., 1987). Using pronouns in this thesis revealed that self-serving biases occurred on a semantic level without categorizing people into groups.

Furthermore, the assessment of bias in the current study differs from previous studies. The most common way of assessing self- and group serving biases is by comparing how participants evaluate their own and the other group on rating scales including either traits or behaviors. Resource allocation is another common dependent variable in this research paradigm. Participants are either given a certain amount of resources to distribute to the ingroup and the outgroup, or they choose one distribution among multiple distribution alternatives on so-called allocation matrices (see for example; Mullen et al., 1992). In all these methods, the comparison of groups is explicit, such that participants know exactly which groups they are evaluating and the assessment is made by explicit measures (e.g., “*how nice are members of a certain group*”, or “*how much money would you give to that group*”).

Similarly, in studies on LIB, the social categories are explicit, such that participants are asked to describe behaviors of people belonging to an explicit ingroup (e.g., Swedes) or an explicit outgroup (e.g., Danes). However, in this thesis, participants were only asked to generate sentences, not to evaluate specific behaviors, and thereby the assessment is implicit. A prerequisite for the LIB to occur has been that the groups must be rather negatively oriented toward each other. For example, LIB is common between political and ideological antagonists, and between sports teams (Maass, 1999; Wigboldus & Douglas, 2007), but not between non-competing groups of equal status (Moscatelli et al., 2008). In the ESG task, the participants were simply asked to construct any sentence they liked with the given words. The results demonstrated that even in the absence of an explicit comparison or description of specified persons or groups, people used language to create evaluative differences between social categories. Hence, linguistic biases occurred without categorizing people into groups, and without any activation of hostile intergroup relations.

In Study II, natural language was studied and broader aspects of linguistic content were analyzed. In Study I, the analyses concerned the selection of positive or negative adjectives, whereas in Study II, the valence of a context of 30 words around the pronouns was examined. The results across the two methods were very similar. Thus, evaluative differences in the semantic contexts of the pronouns were found when the analysis was limited to specific words as well as when the analysis included a broader general semantic context. Importantly, these differences were also expressed by intermediary journalists who do not refer to their personal identities in writing their articles, and who, according to the Reuters directives should aim at neutral and unbiased language and content.

The evolution of self- and group-serving biases in communication

The findings in this thesis thus suggest that people express self- and group-serving biases not only in intergroup situations, or when specific group memberships are activated, but as a default strategy in language production. But why should this be the case? Austin (1962), as well as Fiedler (2008) argued that language is a tool for action, and that the content of verbal messages should be understood in relation to what the speaker wants to attain with the listener, (J. J. Lee & Pinker, 2010; Pinker, 2007). As recently noted by Menegatti and Rubini (2013), what has been largely missing in extant research on linguistic intergroup biases is a communication perspective including both speaker and listener. When communicating, speakers are motivated to present themselves in a positive light (Goffman, 1959), but also to influence their listeners (Austin, 1962; Lee & Pinker, 2010). For example, communicating *We* in more positive contexts than *They* could be a strategy

to attract listeners to the speaker's group and to increase motivation and commitment among ingroup members.

In the introduction to this thesis it was mentioned that pronouns may have evolved because they are short and efficient words reflecting important social categories in human living (Dunbar, 1993; Nettle, 1999, 2006; Pinker, 2007). In a similar vein it might be argued that evaluative communication with specific patterns of pronouns may have increased survival fitness. Communicating self- and group-serving biases could have been associated with positive outcomes and thereby this pattern has been established as the default that is expressed in most situations.

Gender Biases

Gender biases were analyzed in the third study, and included analyses of pronoun frequency, as well as descriptive and evaluative assessments of the semantic contexts in which *He* and *She* occurred.

The results showed that *He* was about nine times as common in a media context as *She*. There may be many reasons for this asymmetry. The first, most apparent reason could be that more men than women are included in news reports. The media is oriented toward politics, business, leadership and sport, and these areas are male-dominated (Eagly & Steffen, 1984; Koivula, 1999; Ridgeway, 2001). However, ratios of men and women in other media studies, where the frequencies of specific individuals, rather than pronouns have been counted, have suggested a less skewed distribution of men and women, with ratios of around three men for each woman (Armstrong, 2004; Matud et al., 2011; Rudy et al., 2010; Schwartz, 2011). The dramatically higher ratio of the *He* vs. *She* obtained in the current research, may reflect that men not only appear more frequently than women in news reports, but are also given more space when they appear. An alternative explanation is that *He* is used as a generic pronoun referring to people in general (Stahlberg et al., 2007). However, the Reuters policy (2008) explicitly restricts such biased language, which speaks against such an interpretation.

The second finding was that *He* occurred in contexts of more positive valence than *She*. This is in line with previous research showing that men are associated with status and power more often than women are (Collins, 2011). An alternative explanation could be that news reporters are more often men than women (Matud et al., 2011), and that the positive valence of *He* could be an effect of ingroup bias, such that men favor men in the media. Previously, it has been found that female reporters include women as news targets more often than men. The question is whether men and women also favor their own gender by the valence of the semantic contexts they select around gendered pronouns. This should be investigated in future research.

The asymmetry in the frequencies of *He* and *She* is likely to reinforce perceptions of gender stereotypes, and beliefs that men's voices are more important than women's. Finally, analysis of the distances between gendered words in the space showed that the word associates to *She* were more closely located in the semantic space than the associates to *He* were. Such essentialist and homogenous descriptions have previously been associated with descriptions of minorities or outgroups (Hegarty & Buechel, 2006). Since the differences found here are subtle, repeated on a daily basis, and spread in various forms of news media, the gender representations in the news media are likely to maintain and reinforce descriptive and evaluative gender stereotypes.

Methodological Considerations

To date, the most common method to measure linguistic social psychological biases has been to apply the theories of LCM, LIB, or LEB, and measure the abstraction level or word choice when people explain similar events for different social groups (Maass et al., 1995; Maass et al., 1989; Semin & Fiedler, 1988; Wigboldus & Douglas, 2007; Wigboldus et al., 2000). The scarcity of language studies could partially be due to the lack of other effective tests measuring evaluations of social groups in language. To fill this gap we developed the ESG task. The ESG task is a new, simple and effective tool for measuring implicit self- and group-serving biases in language. It is easily translated, and hence should be ideal for use for example in cross-cultural comparisons. In this first set of studies with the ESG task, we investigated differences in valence broadly, and did not differentiate between specific types of evaluative dimensions. However, the ESG task is well suited for examining biases in more fine-grained dimensions, such as agency and communion (e.g., Abele & Wojciszke, 2007; Fiske, 2012) and abstractness/concreteness (Maass, et al., 1989; Semin & Fiedler, 1988; Wigboldus et al., 2000).

Latent semantic analysis (LSA; Landauer, 1999; Landauer & Dumais, 1997; Landauer, Foltz, & Laham, 1998; Landauer et al., 2007) was used for the study of pronoun in natural language (e.g., media news). The LSA was developed as a theory and a method of language acquisition (Landauer et al., 2007). LSA represents language use in a semantic space, such that the underlying meaning of words and contexts are represented as dimensions or factors in a multi-dimensional space. Similarities between words and contexts were assessed by comparisons of the distances in the semantic space. Unlike previous studies using LSA, valence was added to the semantic space.

LSA is a strong methodological tool because it is completely data-driven, and capable of finding co-occurrences among words in second and higher order dimensions. This means that all words are given a location in the space that is dependent on all other words in the space - a computation that would hardly be feasible for human coders. It could also be noted that merely coding the numbers of articles (400 K) included in Study II and III would be a tremendous effort.

The LSA is a relatively unemphed method, and there are some uncertainties about it, probably because the method is still rather unknown and not as integrated as other methods within social psychology. A potential barrier for LSA analysis is the calculations of the semantic space which require huge amounts of computer resources, that may not be available within every psychological department. For smaller LSA analyses, there is an open website, developed by the founders of LSA (<http://lsa.colorado.edu>). However, to analyze specific corpora and valence, as done in this thesis, it is necessary to build your own semantic space. As computers become more powerful, it is likely that LSA computations will be facilitated and more studies completed, which also will lead to standardization and more external validations. In this research the software developed was called semantic-excel and is now available on from a web-browser: www.semanticexcel.com.

Some considerations should also be mentioned in relation to the pronouns used in this thesis. In the ESG task and in the LSA analyses I do not know who the writers refer to when using *I*, *We*, *They*, *He* or *She*. This is something that could be further examined in future research by testing whom participants refer to while writing the sentences in the ESG task, or by analyses of whom the pronouns substitutes in the media studies.

In comparison to the other pronouns in PSC, it should be noted that *They* might be used in reference to nonliving categories (e.g., “The pronouns represent important social categories, *they* are among the most often used words.”). It is also plausible that non-human referents occur in contexts of lower valence than references to human categories, possibly contributing to the negative valence in contexts of *They*, at least in the Reuters news. In the ESG task, one question concerned the referents of pronouns on a general level, in that participants were asked about whom they thought of while generating the sentences. These responses did not include non-human referents. Although the evaluative pattern is similar in the ESG task and in the Reuters news, the evaluative context of pronouns referring to non-human referents is something that needs to be specifically addressed in future studies.

Correlations to explicit measures of self- and group serving biases

The self- and group serving bias found in the ESG task seems to be uncorrelated with the explicit measurements of self- and group serving biases

used in Study I, Experiment 2. The explicit biases were assessed by ratings of externality and rationality related to the self, the ingroup, and the outgroup (Kenworthy & Miller, 2002). Although these ratings also clearly indicated self- and group-serving biases (in all conditions), the strength of this bias was not correlated with the selection bias of the pronouns. Besides analyses of correlations, I also divided the participants, based on their explicit biases into three groups with low, medium or high levels of explicit biases. These groups showed similar selection bias for the contexts around pronouns ($F < 1$). This result aligns to previous research on LIB (Franco & Maass, 1996) showing that groups who refrain from explicit evaluative biases on rating scales or resource distribution, showed the same linguistic biases in abstraction levels as groups that were explicitly negative towards other groups.

Future Studies

To the best of my knowledge, these are the first studies examining pronouns in evaluative contexts, and the potential for extending the findings obtained here in future studies is substantial.

The combination of interpersonal and intergroup dimensions in the PSC model could be used simultaneously on self- and group-serving biases. For example, it could be investigated whether threats to the ingroup as compared to the individual results in similar or different patterns of semantic contexts around the pronouns. I have already mentioned the potential of cross-cultural comparisons and of integrating pronouns into research on linguistic intergroup biases.

Pennebaker and colleagues have demonstrated associations between the frequency of people's pronoun use, and their personality, status or situation (e.g., Campbell & Pennebaker, 2003; Stone & Pennebaker, 2002). For example, depressed people show an over-representation of *I* in communication (Campbell & Pennebaker, 2003), and high-status people show an over-representation of *We* (Tausczik & Pennebaker, 2010). An interesting extension of this work would be to examine whether groups that have been found to differ in pronoun frequencies (e.g., depressed vs. non-depressed, men vs. women, high vs. low status groups), may also differ in their use of evaluative contexts for pronouns.

More studies on gender aspects also seem warranted. Although I investigated gendered pronouns in the news media context, the ESG task is also suitable for similar analyses. The gender of the communicator might also be investigated. For example, it has been suggested that women are more relationally oriented than men (Eagly & Steffen, 1984; Heilman, 2001). If this is

true, do women generally use pronouns in more positive contexts than men do? Can priming of relational or collective identities (Brewer & Gardner, 1996) activate women's and men's use of pronoun contexts differently?

Not all types of pronouns were used in this thesis, for example *You* was excluded since this word does not differentiate between individual and collective levels. However, the semantic contexts of *You* might also be worth examining since this pronoun is especially common in interpersonal contacts. It is also possibly to replicate the studies with other inflections of the pronouns (e.g., possessive or reflective pronouns).

A vital aim for future research should also be to examine whether, and to what extent, evaluative differences in the semantic context of pronouns actually influence the listener's perception, cognition, and behavior. Previously, it has been found that circling *I* or *We* influences the representation of the self (Brewer & Gardner, 1996). I have suggested that evaluative communication involving the pronouns might have evolved because it made it possible to influence group formation and intergroup relation, and where thereby beneficial for survival. If this is true, it is necessary to address the responses and reactions of the listener. For example, if a speaker in a collaboration context included a listener by choosing a more positive context around *We* than *I*, would the listener put greater effort into the collaboration and be more committed, than a listener to a speaker who selected a more positive context for *I* than *We*? These types of questions are still to be addressed in future research.

Concluding Remarks

This thesis has contributed to the psychological understanding of how people use pronouns in evaluative contexts. By forming a model over pronouns as reflecting social categorization, and by developing new experimental and computerized methods, it was shown that pronouns are used as vehicles/vessels for transferring self-, group-serving and gender biases.

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