"Me, Myself, and I" : An Analysis of the Use of First Person in Scholarly Articles

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by

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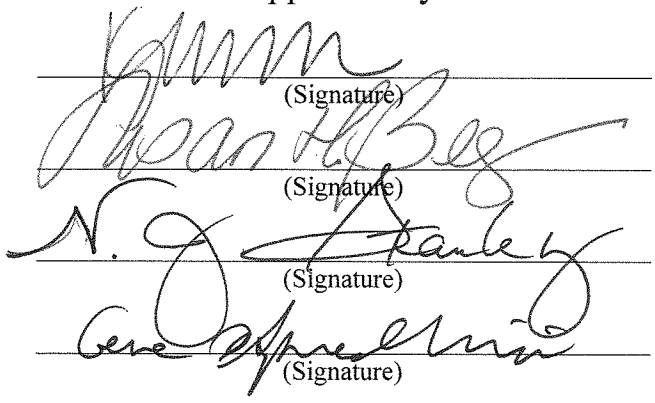

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Abstract

Recent changes in APA style allow authors to write in the active voice rather than the passive voice and could encourage the use of first person in journal articles. The current study explored the use of personal pronouns in journal articles on narcissism, intelligence, and other personality traits. The Linguistic Inquiry and Word Count (LIWC) text analysis program was used to calculate the number of personal pronouns in 307 journal articles. It was hypothesized that articles on narcissism would use more first-person singular pronouns than articles on intelligence or other personality traits. In contrast, the current research found that articles on other personality traits used the greatest proportion of first-person singular pronouns, while articles on narcissism used the greatest proportion of personal pronouns. Future research should continue to examine authors’ motivation for research.

“Me, Myself, and I:” An Analysis of the Use of the First-Person in Scholarly Articles

Recent changes in APA style allow authors to write in the active voice rather than the passive voice and could encourage the use of first-person pronouns in journal articles (American Psychological Association [APA], 1994). Research shows that narcissism is associated with the use of first-person pronouns in a variety of contexts, including spoken and written words (e.g., Raskin and Shaw, 1988; Zimmerman, Wolf, Bock, Peham, & Benecke, 2013). Narcissism is associated with greater use of first-person pronouns in a variety of written works, including song lyrics (DeWall, Pond, Campbell, & Twenge, 2011), social networking posts (DeWall, Buffardi, Bonser, & Campbell, 2011), and diaries (Fernández-Cabana, García-Caballero, Alves-Pérez, García-García, & Mateos, 2013). The current study explored whether scholarly research on narcissism would show a greater use of first-person pronouns in comparison to research on other personality traits (i.e., extraversion). In addition, I explored whether this was more likely to appear in recent publications (e.g., 1994-2014) than in earlier research (e.g., 1973-1993).

APA Style

In the past, the words used in APA style were seen as “simple transmitters of information from the writer to the reader” (Madigan, Johnson, & Linton, 1995, p. 433). Word choice was crucial in that it could either enable or inhibit the process of communication. APA style emphasized the data and theory over the author as an individual. Dillon (1991) even coined the term, *rhetoric of objectivity*, to note that language should not call attention to itself within this manner of writing. The use of passive voice and the attribution of agency to inanimate objects were some of the grammatical tools that allowed the researcher to remain in the background (Madigan et al, 1995).

There are several important motives behind the rationale of using passive voice in scientific writing. First, the use of passive voice allows the research to sound objective, not limited or biased by the author’s personal interests or perspectives (Toadvine, n.d.; Sigel, 2009). Second, passive voice “highlights the action and what is acted upon rather than the agent performing the action” (Toadvine, n.d., p. 5), permitting the author to maintain anonymity (Josselson & Lieblich, 1996). Third, the use of passive voice suggests an objective *voice of authority* in writing (Walsh-Bowers, 1999). Fourth, personal pronouns are eliminated when using passive voice, allowing the data to be at the forefront (Bass, 1979; Madigan et al, 1995; Toadvine, n.d.).

Research has found that the use of passive voice is acceptable to most readers. For example, passive voice does not cause lower reading comprehension scores or longer reading times than active voice (Rhodes, 1998). However, the benefits of passive voice are limited. Bass (1979) states that, while passive voice has some benefits (e.g., it can help eliminate gender-specific personal pronouns), writing often loses its dynamic quality without active voice. It has also been suggested that, from a student’s point of view, the use of passive voice could be ill-advised because it is too complex for the average person to master (Josselson & Lieblich, 1996; Purdue Owl; Sigel, 2009). Josselson and Lieblich (1996) suggest that authors should choose a writing style that best fits the nature of their research.

The negative aspects of passive voice are only one of several factors that helped to stimulate the recent shift in tone of voice within APA style. Another influencing factor is the numerous internal contradictions within the APA manuals (Walsh-Bowers, 1999). For example, the APA Manual 4th Edition states that “the prescribed writing style is impersonal, detached, objective, and rational” (Walsh-Bowers, 1999, p. 386); however, it also mildly promotes

“personal involvement” by recommending writing in the active voice in order to meet a criterion of good writing, conciseness. Authors are in charge of the research relationship and have the duty to be objective, but they should also have the choice in which style to present their findings. According to Walsh-Bowers (1999), many psychology professors drill APA style into their students and make them feel like they are being punished if they choose to write in the first person.

The feminist movement was another stimulus in changing the tone of voice in APA style (Guidelines, 1975; Russo, 1999; Steinberg, 2007). Russo (1999) indicated that feminists were the main stimulus of change in tone of voice because language tended to be biased toward a male perspective. In this light, the Guidelines for Nonsexist Use of Language (1975) stated that authors should determine the gender of the individual referred to and use the correct pronoun.

A shift in APA writing style is clearly evident in the 4th Edition of the Publication Manual of the American Psychological Association. The APA Manual states that the author should “prefer [using] the active voice” (p. 32). This change allows psychologists to capitalize on the use of active voice in research. An important difference between the active and passive voice is that active voice promotes the use of personal pronouns. I believe that this transition might have influenced some authors more than others. More specifically, I suspect that the movement towards the active voice could encourage the use of first-person pronouns in narcissism research. Moreover, it is possible that this change is a further indication of a current trend toward increasing narcissism in our society (Twenge, 2006; Twenge, 2009; Twenge, Konrath, Foster, Campbell, & Bushman, 2008a, 2008b).

Narcissism

Narcissism has become increasingly prevalent in today’s society (Twenge, 2006; Twenge, 2009; Twenge et al. 2008a, 2008b). Recent research has explored the relationship between narcissism and generation (Twenge, 2006), age (Foster, Campbell, & Twenge, 2003), gender (Twenge, 2009), and social strata (Piff, 2013).

Narcissism has one of the longest histories in personality research. Originally conceptualized by Havelock Ellis (1927), narcissism was first dubbed as *Narcissus-like* to refer to the tendency for sexual emotions to be misplaced and absorbed in self-admiration (as cited in Raskin & Terry, 1988). Sigmund Freud took this a step further in his clinical practice. Freud (1957) noted several key behavioral aspects to the trait including attitudes towards oneself (i.e., self-love and self-admiration), vulnerability of self-esteem, and the use of defense mechanisms. More recently, Emmons (1984) found four main characteristics of trait narcissism: a sense of superiority, self-absorption and self-admiration, a strong potential for leadership and authority, and the willingness to exploit others due to a sense of entitlement.

Ackerman, Witt, Donnellan, Trzesniewski, Robins, and Kashy (2011) labeled one of the socially toxic elements of narcissism, *Grandiose Exhibitionism*. Grandiose Exhibitionism includes aspects of self-absorption, vanity, and superiority. Narcissists who display this tendency enjoy being the center of attention and will take any opportunity to promote themselves, since gaining the interest and attention of others satisfies them (Carpenter, 2012). Narcissistic individuals tend to search their environments for self-referential information that can reinforce their *grandiose self* (Morf & Rhodewalt, 2001).

Previous research has indicated that narcissists utilize self-referencing when speaking to others (Derber, 1979; Kernberg, 1967; Vangelisti, Knapp, & Daly, 1990). Derber (1979) labeled

this narcissistic tendency as c*onversational narcissism.* Conversational narcissism refers to the ways that speakers turned the focus of everyday conversations upon themselves without showing interest in what others have to say. Vangelisti et al. (1990) analyzed conversational narcissism using written questionnaires and role-played interactions. They found that this tendency involves “strategies such as boasting, asking questions to demonstrate superior knowledge, ‘one-upping’ others’ disclosures, ‘shifting’ the conversational focus to the self” (p. 269), and, most importantly, an overuse of “I” statements. Fast and Funder (2010) found that male narcissists spoke in this self-referential fashion.

Because self-referencing often requires the use of first-person singular pronouns, narcissists tend to choose words such as I, me, and my more often than first-person plural pronouns (Raskin & Shaw, 1988). In fact, Raskin and Shaw (1988) found that narcissism, as measured by the Narcissistic Personality Inventory (NPI), showed a moderately positive relationship with participants’ use of “I” and a moderately negative relationship with “we”.

Text Analyses

Words are a common mode of communication that can be used as a tool for gathering introspective information from people (Groom & Pennebaker, 2002). According to Pennebaker, Mehl, and Niederhoffer (2003), analyzing language is crucial because words provide a significant amount of information about speakers, including their social status, gender, and personality. Because language is often spontaneous and natural, it allows researchers to extract a *big picture* about personality in general. Text analysis programs can be utilized in order to assess personality through language use.

Text analysis is defined as “any systematic reduction of a flow of text to a standard set of statistically manipulated symbols representing the presence, the intensity, or the frequency of

some characteristics relevant to social science” (Shapiro & Markoff, 1997, p. 14). The original text analysis programs were created during World War II when researchers were analyzing Nazi propaganda (Mehl, 2006). Stone, Dunphy, Smith, and Ogilvy (1966) developed one of the most successful word-based text analysis programs that was utilized by researchers for decades (as cited in Pennebaker & Stone, 1999). Since then, technology has advanced and linguistic analyses have improved by adding more variables.

Linguistic analysis has become increasingly popular within the social sciences (e.g., Mehl, 2006; Mehl & Gill, 2010; Pennebaker & King, 1999). According to Mehl and Gill (2010), the appeal of linguistic analyses could be attributed to the rise of interaction through digital means such as email, text messages, and social networks. Although researchers are often constrained by the variables the programs provide, text analyses are beneficial to research because text-based data can be used to study psychological phenomena in a non-reactive manner (Pennebaker, 2011; Tausczik & Pennebaker, 2010). According to Groom and Pennebaker (2002), language use is spontaneous and avoids self-report bias. Linguistic analyses have assisted researchers in a variety of topics, including predicting final course performance from students’ written self-introductions (Robinson, Navea, & Ickes, 2013), examining the suicidal traits within Marilyn Monroe’s writing (Fernández-Cabana et al., 2013), and evaluating the relationship between self-reported well-being and the use of positive versus negative emotion words (Tov, Ng, Lin, & Qiu, 2013).

Pennebaker & King (1999) propose that the vocabulary people habitually use to express themselves is a stylistic behavior. Research shows that people are consistent in how they communicate (Groom & Pennebaker, 2002). According to Groom and Pennebaker (2002), one of the best markers of writing style is the use of personal pronouns, and the use of personal

pronouns tends to stay the same over time in text-based data. Individuals differ in the frequency with which they use personal pronouns (Mehl & Pennebaker, 2003; Pennebaker & King, 1999). Moreover, people are unable to control and remember when they use personal pronouns (Chung & Pennebaker, 2007). This suggests that text analyses are a reliable method of assessing stylistic behaviors that avoid social desirability biases.

Personal pronouns are one of the most common parts of speech (Pennebaker, 2011). Psychologists suggest that the use of personal pronouns can be viewed as an attempt to promote the self as a distinct entity (Zimmerman, Wolf, Bock, Peham, & Benecke, 2013) and as an indicator of egocentricism (Sanford, 1942; Weintraub, 1981). Because children are viewed as egocentric by early childhood researchers such as Piaget and Freud, they should utilize more first-person singular pronouns in their speech (as cited in Weintraub, 1981). Murray (1972) provided support for this hypothesis when he observed that the most common pronoun used by young children was I.

Several studies have analyzed the use of personal pronouns using linguistic analyses. For example, Campbell and Pennebaker (2003) investigated whether personal pronouns could predict health improvements. They concluded that flexibility in the use of common words (e.g., personal pronouns) was related to positive health outcomes. Stone and Pennebaker (2002) also used linguistic analyses to show that traumatic events can temporarily suppress the use of first-person singular pronouns as evidenced in blog posts after Princess Diana’s death in 1997. Lastly, Newman, Pennebaker, Berry, and Richards (2003) found that liars used fewer first-person singular pronouns in false stories.

Hartley, Pennebaker, and Fox (2003) used the LIWC to analyze the readability of scholarly papers’ abstracts, introductions, and discussions. They selected 80 journal articles from

four recent volumes of the *Journal of Educational Psychology* and scanned the abstract and portions of the introduction and discussion sections. The results showed that the discussion section of scholarly papers tended to use the greatest proportion of pronouns, whereas the abstracts utilized the least proportion of pronouns.

The relationship between age and personal pronoun use has also been explored using linguistic analyses (e.g., Pennebaker & Stone, 2003; Seider, Hirschberger, Nelson, & Levenson, 2009). Seider et al. (2009) analyzed the types of personal pronouns used in marital conversations. The experimenters monitored physiology, emotional behavior, and speech characteristics while middle-aged and older couples engaged in conversation. The results revealed that older couples used more first-person plural pronouns (i.e., we, us) than the middle-aged couples. Pennebaker and Stone (2003) found similar results in a two-part study analyzing both writing samples and written transcripts of people disclosing emotional experiences, as well as published works of 10 prominent authors. They found a strong, negative linear relationship between personal pronoun use and age. The consistent drop in first-person singular may reflect the fact that with increasing age people are more invested in their relationships or better able to detach themselves from their topics.

Gender has also been linked to the use of personal pronouns in writing samples (e.g., Mulac, Bradac, & Gibbons, 2001; Mulac, Giles, Bradac, & Palomares, 2013; Mulac, Studley, & Blau, 1990). For example, Mulac et al. (2013) analyzed the gender differences in social schemas and communication through written image descriptions. Participants were asked to describe five landscape photographs in writing. For the first photograph, no instructions were given. For the subsequent four photographs, the participants were told to write as a male or female would. Results showed that both males and females believed that males made more “I” references in

writing. Mulac et al. (1990, 2001, & 2013) also found that males did, in fact, make more “I” references in their writing. However, other research has also suggested that females may use a greater number of self-references and first-person singular pronouns than men (Pennebaker & King, 1999).

The most relevant research to the current study has explored the relationship between personality traits and the use of personal pronouns. Text analyses have been used in a multitude of studies to examine the influence of narcissism on social networking (e.g., Bergman, Fearrington, Davenport, & Bergman, 2011; Carpenter, 2012; DeWall et al., 2011; Mehdizadeh, 2010). Social media has become a so-called *hot-spot* for researchers to gather data because social networking sites may reinforce narcissistic tendencies due to the ease of self-promotion (Buffardi & Campbell, 2008). Whether it is the number of *friends* a person has on social networking sites (i.e., Schwartz, 2011) or the types of images a person posts (i.e., DeWall et al., 2011), narcissistic tendencies have become increasingly evident on sites such as Facebook and Twitter.

The most common narcissistic tendencies found on Facebook tend to involve self-promotion, either through picture posting or written content. Carpenter (2012) found that grandiose exhibitionism, an aspect of narcissism, was related to Facebook behaviors, including posting status updates and photos and attaining large numbers of friends in order to self-promote. DeWall et al. (2011) found that narcissists who used few first-person singular pronouns displayed more self-promoting and inappropriate images of themselves on Facebook. In addition, Mehdizadeh (2010) found gender differences in the type of self-promotional content narcissistic people posted on Facebook. Male narcissists included more descriptive self-promotion (i.e., updating About Me section), whereas female narcissists included more superficial self-promotion (i.e., posting suggestive images).

Text analyses have also been used to examine the relationship between narcissism and song lyrics. DeWall et al. (2011) analyzed the changes in popular U.S. song lyrics from 1980-2007. The study analyzed whether U.S. song lyrics were becoming more self-focused, socially disconnected, angry and antisocial, and included less positive emotions over time because individualistic traits such as extraversion, narcissism, and self-esteem have risen over time (Roberts & Helson, 1997). DeWall et al. (2011) found that year was positively associated with first-person singular pronoun use, indicating that “popular music lyrics now include more words related to a focus on the self” (p. 204).

Data on the relationship between personality and personal pronoun use is not limited to narcissism. Past research has also analyzed the link between personality traits, such as extraversion and neuroticism, and personal pronoun use. For example, Holtgraves (2010) analyzed how the language in text messaging and emails varied according to personality traits. It was found that extraversion was positively associated with the use of first-person singular pronouns, indicating that “extraverts like to make [conversations] more personal and they do so by talking about themselves” (Holtgraves, 2010, p. 7).

Previous research on the relationship between personal pronoun use and neuroticism shows mixed results. Pennebaker and King (1999) found that, when analyzing college students’ written assignments, neurotics used more first-person singular pronouns. However, Oberlander and Gill (2006) found that neurotics did not use more first-person singular pronouns in emails.

The Linguistic Inquiry Word Count (LIWC)

One text analysis program, the LIWC, has been used in much of the above-mentioned research. Originally developed for research concerning illness-related behaviors, this text analysis program has evolved to explore many different facets of psychology (Pennebaker &

King, 1999). The LIWC is useful in contemporary research because it provides considerable depth into participants’ thinking. Since the LIWC is objective, it is much more useful than multiple choice or open-ended questions. The LIWC has also become popular among researchers because it is user friendly and capable of including user-defined categories (Pennebaker, Mehl, & Niederhoffer, 2003). This program is ideal for the current study.

The LIWC is a sophisticated word counter (Pennebaker & Graybeal, 2001). It recognizes over 2200 words (LIWC; Mehl & Gill, 2010; Pennebaker, Francis, & Booth, 2001; Pennebaker & King, 1999), which is approximately 80% of the words people normally use in non-technical speech and writing (Groom & Pennebaker, 2002). When analyzing writing, the LIWC calculates the percentage of words that fall into a number of grammatical categories (e.g., prepositions, articles, and pronouns), psychological categories (e.g., affect and cognitive mechanisms), and traditional content dimensions (e.g., occupation, achievement, and leisure). The LIWC has demonstrated reliability and validity, and word category use has been shown to be remarkably stable across time (Mehl & Gill, 2010; Pennebaker & King, 1999).

Most current approaches to psychology research using the LIWC focus on simple word counts, including personal pronouns and prepositions (e.g., Fernández-Cabana et al., 2013), or psychological linguistic dimensions, including emotion- (e.g., Niederhoffer & Pennebaker, 2009) and achievement-related words (e.g., Pennebaker, Mehl, & Niederhoffer, 2003). This could be because speaking and writing patterns remain stable even when discussing different topics (Pennebaker & King, 1999).

The Current Study

The current study investigated the presence of personal pronouns in scholarly articles related to personality traits using the LIWC. It was hypothesized that articles on narcissism

would use more personal pronouns than articles focused on intelligence or other personality traits. It was also hypothesized that more recent research (i.e., 1994-2014) on narcissism would show a greater number of first-person singular pronouns when compared to older articles (i.e., 1973-1993).

Method

I randomly selected 307 journal articles written by individual authors (i.e., 107 on narcissism, 100 on intelligence, and 100 on other personality traits) from the *PsycInfo* database. Each article was separated into four different sections: the abstract (M = 135.4 words), introduction (M = 1157.4 words), procedure (M = 289.8 words), and discussion (M = 1052.5 words) sections. Data were collected from 202 abstract sections, 194 introduction sections, 105 procedure sections, and 196 discussion sections.

Articles were eliminated from the current study due to their inability to convert from PDF format to Microsoft Word 2013. For narcissism, there were 76 abstracts, 69 introductions, 42 procedures, and 70 discussions. There were 46 male authors, 23 female authors, and 7 authors whose gender was unidentified. Twenty articles on narcissism were written between 1973 and 1993, whereas 56 articles were written between 1994 and 2014 (see Appendix A).

For intelligence, there were 59 abstracts, 58 introductions, 25 procedures, and 59 discussions. There were 44 male authors, 13 female authors, and 2 authors whose gender was unidentified. Twenty-one articles on intelligence were written between 1973 and 1993, whereas 38 articles were written between 1994 and 2014 (see Appendix B).

For other personality traits, there were 67 abstracts, 67 introductions, 38 procedures, and 67 discussions. There were 38 male authors, 25 female authors, and 4 authors whose gender was

unidentified. Twenty-seven articles on other personality traits were written between 1973 and 1993, whereas 40 articles were written between 1994 and 2014 (see Appendix C).

Sampling Considerations

The current research explored the relationship between personal pronoun use and personality traits in scholarly journal articles in the field of psychology. I chose to use one online database, *PsycInfo,* to explore the relationship between personal pronoun use and personality traits in scholarly articles. *PsycInfo* also allowed me to utilize several limiters in my searches for scholarly articles. First, this database helped to ensure that the query results eliminated articles regarding narcissism in the clinical sense. It was necessary to create this distinction because narcissism is viewed as both a personality disorder and a personality trait. Earlier research tended to view narcissism in the clinical sense rather than as a personality trait. The query used to generate articles on narcissism as a personality trait was Narcissism AND Personality NOT “Personality Disorder” (i.e, 738 articles). I was only interested in measuring personal pronoun use in articles on narcissism as a personality trait.

The *PsycInfo* limiters were also important in sampling articles of the contrast groups. I originally wanted to compare narcissism with other personality traits such as extraversion and neuroticism. However, I found that these scholarly articles in the database analyzed several different personality traits simultaneously. Personality measures such as the EPQ, the Big 5, and the NEO were created to measure broad domains within the same scale (e.g., Costa & McCrae, 2008; Eysenck & Eysenck, 1994). This was problematic because I could not ensure that individual traits were related to the use of personal pronouns. I attempted to focus on extraversion to eliminate this issue using the following search query: Extraversion AND Personality NOT Neuroticism. However, this was unsuccessful because of the insufficient

sample size generated by *PsycInfo* (i.e., 591 scholarly articles). Single trait measures such as aggression, dominance, and self-esteem were also tested, but these personality traits did not yield a sufficient sample size.

I selected intelligence as my main contrast group. Some personologists suggest that intelligence is stable and could be included within personality (e.g., Cattell, Eber, & Tatsuoka, 1970). The query, Intelligence NOT Narcissism NOT “Disorders,” generated a large number of scholarly journal articles (i.e., 5,766). Articles on emotional intelligence were disregarded for this contrast group. I also found a second comparison group, other personality traits that included articles on personality traits, excluding narcissism and intelligence. The search query for the second comparison group was “Personality Traits,” NOT “Personality Disorders,” NOT Intelligence, and NOT Narcissism (i.e., 6,732 articles).

In order to sufficiently measure the differences in writing style, I selected a specific time period from which I would sample articles. I analyzed scholarly journal articles between the years of 1973 and 2014. Since the APA Manual was updated in 1994, I decided to include articles from the 20 years before the shift (i.e., 1973-1993) and the 20 years after (i.e., 1994-2014) in order to explore whether the APA Manual was a stimulus for increased personal pronoun use. The Fourth Edition of the American Psychological Association Manual suggests a shift to using the active voice in writing. Because personal pronouns are used while writing in the active voice, I believe there could be a significant difference in the use of first-person singular pronouns between the periods before and after the Fourth Edition of the APA Manual.

Several different methods of sampling were considered for the current study. I first considered sampling articles from popular personality journals (e.g., *Journal of Personality and Social Psychology, Personality and Individual Differences)*; however, there were only four

popular personality journals. In order to create a larger sample, I chose expand the number of journals, but found only 8 more that could be considered personality journals. I eliminated the idea because there was a chance that the journals’ editors could significantly impact the results. If several editors encouraged first-person singular pronouns and active voice in scholarly articles, whereas other editors encouraged third-person and passive voice, it could have significantly influenced results.

Procedure

I deleted the title, authors, “subheadings, and any lengthy quotations from other sources” (p. 391) in a similar manner to Hartley et al. (2003) in order to ensure the text from each section of the articles was comparable. Articles were converted from PDF format into a Microsoft Word 2013 format and spell-checked for accuracy. Articles that did not convert were eliminated (i.e., 31 articles on narcissism, 41 articles on intelligence, and 33 articles on other personality traits). Psychology jargon was not eliminated from the articles used. The participants and materials portions of the methods section, the results section, and the reference sections of articles were eliminated from the current study. I suspected that the procedures would be the main contributors of first-person singular pronouns in the methods section because they allowed the authors to discuss the processes in order to complete their study. Procedures were only used from scholarly articles that clearly labeled them as a subsection of the methods section. I also eliminated the results section of the scholarly articles because the wording of the analyses may have been too complex for the LIWC to comprehend.

Results

I used a 3 (Type of Article) X 2 (Year of Publication) X 4 (Subsection of Article) repeated measures ANOVA on *first-person singular pronoun use*. The type of article and year of

publication were between subjects, and the subsection of the article was a repeated measure. Results showed main effects for the type of article and subsection (see Table 1). There were more first-person singular pronouns used in articles on other personality traits (M = 1.01) than in articles on narcissism (M = 0.18) or intelligence (M = 0.08). There were more first-person singular pronouns used in the abstracts (M = .80) and procedures (M = .67) than in the introductions (M = .14) or discussions (M = .08).

There was also a significant type of article by subsection interaction effect on *first-person singular pronoun use*. The type of article X subsection interaction showed a significant difference between subsections in the articles on other personality traits (see Table 2). The most first-person singular pronouns were used in the abstract, which was significantly more than any other section. In addition, the procedure section showed significantly greater use of first-person singular pronouns than the introduction and discussion. Finally, the introduction section showed significantly greater use of first-person singular pronouns than the discussion section.

I also used a 3 (Type of Article) X 2 (Year of Publication) X 4 (Subsection of Article) repeated measures ANOVA on *overall personal pronoun use*. The type of article and year of publication were between subjects, and the subsection of the article was a repeated measure. Results showed main effects for the type of article and subsection (see Table 3). There was a greater use of personal pronouns in articles on narcissism (M = 1.61) than in the other articles. There was also greater proportion of personal pronouns used in articles on intelligence (M = 0.78) than in articles on other personality traits (M = 0.28). The procedure section showed greater use of personal pronouns (M = 1.31) than the other sections. There were no significant differences in the proportion of personal pronouns used in the abstract (M = 0.79), introduction (M = 0.68), or discussion (M = 0.78).

There was also a significant type of article by subsection interaction effect for *overall personal pronoun use*. The type of article X subsection interaction showed significant differences between subsections in articles on narcissism and those on other personality traits, but not in articles on intelligence (see Table 4). The procedure section of articles on narcissism showed the greatest proportion of personal pronoun use. In addition, in articles on narcissism, the introductions used personal pronouns in greater proportion than the abstracts. In articles on other personality traits, the abstracts showed a significantly greater proportion of personal pronoun use compared with the introduction, procedure, or discussion sections. There were no significant differences in the proportion of personal pronouns used in subsections in articles on intelligence.

In addition, I examined the data for differences among the three types of journals within subsections. There were no significant differences in the proportion of personal pronouns used in the abstracts in articles on narcissism, intelligence, or other personality traits. However, the introduction, procedure, and discussion sections showed the greatest proportion of personal pronoun use in articles on narcissism. Articles on intelligence showed a greater proportion of personal pronoun use in the introduction, procedure, and discussion sections than articles on other personality traits.

Discussion

The current study examined the presence of personal pronouns in scholarly articles related to personality traits and intelligence using the LIWC. It was hypothesized that articles on narcissism would use more first-person singular pronouns than articles on intelligence or other personality traits. It was also hypothesized that more recent research (i.e., 1994-2014) on narcissism would show a greater proportion of first-person singular pronouns when compared to older research (i.e., 1973-1993).

Although the results did not show that articles on narcissism used a greater proportion of first-person singular pronouns, they did indicate that articles on narcissism used a greater proportion of total personal pronouns. In comparison to earlier research (e.g., Derber, 1979; Kernberg, 1967; Raskin & Shaw, 1988; Vangelisti et al., 1990) that focused on narcissists’ use of first-person pronouns, I analyzed the use of first-person pronouns and overall personal pronoun use (i.e., first-person singular and plural, second-person, and third-person pronouns) in scholarly articles. Dr. James Pennebaker (2011), an expert in the field of linguistic word analysis, has also analyzed the relationship between pronoun use and personality traits. His results have suggested a possible link between total personal pronoun use in writing and extraversion. The results of the current study could provide further support to an already established connection between extraversion and narcissism.

According to Campbell et al. (2002), narcissism is related most consistently with extraversion in the Five Factor Model. Narcissists’ self-superiority beliefs are related to traits that reflect agency, mainly extraversion. There are several parallels between narcissism and extraversion. Both narcissists and extraverts desire social contact with others and are judged as sociable (i.e., entertaining and not boring) and energetic (Campbell et al., 2002). It is possible that authors of scholarly research on narcissism use personal pronouns to a greater extent because they may be more social than other writers. Pennebaker (2011) stated that personal pronouns are “the most social of all word categories” (p. 174) and suggested that those with the greatest personal pronoun use are often aware of and thinking about other human beings when speaking or writing. Perhaps authors of articles on narcissism unconsciously reflect this greater sociability. It is also possible that the field of narcissism research reflects an unconscious bias

toward writing conventions that reflect greater sociability. Those who do research and publish in this field learn to use more unconsciously social language in scholarly discourse.

Previous research suggested that narcissists utilized self-referencing and first-person singular pronouns when speaking to others (Derber, 1979; Kernberg, 1967; Raskin & Shaw, 1988; Vangelisti et al., 1990). Fast and Funder (2010) found that narcissists utilized self-referencing in an attempt to shift the focus to themselves, which suggested that authors of scholarly journal articles on narcissism might follow this same pattern. In contrast, the results of the current study showed that articles on other personality traits used a greater proportion of first-person singular pronouns than scholarly articles on narcissism or intelligence.

Previous research has shown that narcissists tend to use first-person singular pronouns more than those with other personality traits (i.e., Derber, 1979; Fast & Funder, 2010; Kernberg, 1967; Raskin & Shaw, 1988; Vangelisti et al., 1990). However, according to Pennebaker (2011), it is those who are self-aware and introspective who use the most first-person singular pronouns, not narcissists. Carlson, Vazire, and Oltmanns (2011) stated that a “lack of self-insight is believed to be a hallmark of narcissism” (p. 185). Narcissists tend to have positive self-views (Campbell, Rudich, Sedikides, 2002); they are motivated to maintain overly positive perceptions (Morf & Rhodewalt, 2001) and self-aggrandize (Cai, Kwan, & Sedikides, 2012). This suggests that narcissists are less self-aware than others and, therefore, less likely to use first-person singular pronouns. It is also possible that authors of articles on narcissism do not need to use first-person singular pronouns in scholarly articles. Pennebaker (2011) suggests that higher status individuals tend to use lower rates of first-person singular pronouns than those who are lower in status. Because narcissists may unconsciously perceive themselves as the top of the social

hierarchy, personologists who focus on narcissism may use first-person singular pronouns at lower rates in their scholarly articles.

Authors of scholarly articles on other personality traits used a greater proportion of first-person singular pronouns in their writing compared to authors of articles on narcissism or intelligence. Pennebaker (2011) suggests that self-aware and introspective individuals tend to use more first-person singular pronouns in their speech and writing. Could it be possible that authors of articles about personality traits tend to be more self-aware and introspective than authors on narcissism or intelligence?

Sedikides, Horton, and Gregg (2007) stated that “introspection is the process of looking inward, thinking ‘about [one’s] thoughts and feelings’ (Wilson, Lisle, Schooler, Hodges, Klaaren, & LaFleur, 1993, p. 33). Previous research has identified two types of introspection, both of which may apply to personality researchers. One type is what they term, *descriptive introspection,* which “denotes the act of contemplating what one’s personality is like” (Sedikides et al., 2007, p. 786). People ask themselves whether they have a certain trait and to what extent. They then conclude that they either possess or lack particular traits to some degree. The second type, *explanatory introspection,* denotes “the act of contemplating why one does or does not think of oneself in a particular way” (Sedikides et al., 2007, p. 786). People ask themselves why they may or may not have particular traits. They then generate reasons that explain why they either possess or lack those traits. Because personality tends to focus on individual differences and the self, authors of scholarly articles about personality traits other than narcissism may be engaging in both descriptive and explanatory introspection.

Authors of articles on intelligence used a lesser proportion of first-person singular pronouns than authors of articles on narcissism or other personality traits. There is a plausible

explanation for this result. Authors of articles on intelligence may be more task-focused than authors of articles on narcissism or other personality traits. Pennebaker (2011) states that task-focused individuals “don’t pay attention to themselves. [They have] a clear awareness of the objects, events, and concrete features that are necessary to accomplish the task goals” (Pennebaker, 2011, p. 71). Authors of scholarly articles on intelligence could be more focused on writing about their research as opposed to focusing on the self and individual differences.

The results also suggested pronoun use differed depending on the subsection of the article. Authors of articles on narcissism used a significantly greater proportion of personal pronouns in the procedure sections compared to the abstract, introduction, and discussion sections. In contrast, authors of articles on other personality traits used a significantly greater proportion of first-person singular pronouns in the procedure and abstract sections than in the introduction and discussion sections.

I believe there are two possible explanations for this result. First, it is possible that personal pronouns represent a larger percentage of the words in the abstract and procedure sections in the current study, because both the abstract and procedure sections were significantly shorter than the introduction and discussion sections. The average length of the abstract and procedure sections were 135 and 290 words, respectively, while the average length of the introduction and discussion sections were 1,157 and 1,017 words, respectively. There was a greater percentage of personal pronouns used in a smaller section.

Second, it could also be possible that the abstract and procedure sections of scholarly articles allow authors more freedom in their style of writing. The introduction section of scholarly research tends to focus on previous research, whereas the discussion section tends to focus on how the current results relate to previous research. Neither the introduction nor the

discussion sections allow for showcasing oneself and one’s thought processes. The abstract and procedure sections could offer more freedom to use words that represent the author’s personality. As previously noted, people are unable to control when they use personal pronouns (Chung & Pennebaker, 2007), so authors of scholarly articles might use more personal pronouns in the sections that offer the opportunity for self-expression because it reflects their unconscious writing style.

The results of the current study were inconsistent with previous research conducted by Hartley et al. (2003). They found that authors used a greater proportion of pronouns in the discussion sections than the abstract or introduction sections of scholarly articles. Their results also showed that authors used significantly more personal pronouns in the introductions than the abstracts. The experimental design of the current study was similar to that of Hartley et al. (2003); however, there were several important differences that could have contributed to the opposing results.

First, the current study investigated personal pronoun use within scholarly articles, whereas Hartley et al. investigated total pronoun use. Second, Hartley et al. *selected* articles and passages, whereas the current study used a randomly-generated sample from the population of relevant journals and I used entire sections of the articles. Third, there was a significant difference in the number of words in the introduction and discussion sections. The introduction and discussion sections in the current study had an average of 1,160 and 1,017 words, respectively, whereas the introduction and discussion sections analyzed by Hartley et al. had an average of 516 and 665 words, respectively. Fourth, the current study examined four sections, whereas Hartley et al. did not include procedure sections.

The current study also explored the effects of article year and gender on personal pronoun use, but did not find significant results. First, contrary to my second hypothesis, the article year had no effect on the proportion of first-person singular pronouns or total personal pronouns. This result suggests that there was no shift in the tone of voice in APA style writing following the establishment of new guidelines in 1994. Second, the author’s gender had no effect on the proportion of first-person singular or total personal pronouns used.

There are several limitations of the current study worth mentioning. First, there were a large number of articles that were dropped from the analysis due to the poor transfer between formats. Second, it is unusual for researchers to work independently in psychology. Zafrunnisha and Pullareddy (2009) found a trend in collaborative research efforts in the field of psychology that has been steadily increasing since 1936. This trend may have contributed to some difficulty gathering a large population of single-author scholarly articles to sample. Third, there may have been sub-discipline differences in writing conventions that could produce a confound in the current study. What may be perceived as a common convention in articles on narcissism may be unconventional in articles on intelligence or other personality traits.

Future research should continue analyzing personal pronoun use in scholarly articles. First, it would be interesting to examine whether younger authors tend to use more personal pronouns than older authors, as indicated by Pennebaker’s earlier research. It would be especially interesting to focus on authors who were trained with the newer APA Manual. Second, it would be interesting to investigate whether authors’ social class impacts their use of personal pronouns. According to Pennebaker (2011), members of the lower social classes tended to use more personal pronouns than members of the higher social classes. Third, and most importantly, future research should explore the motivation to do research. Do researchers study personality

traits that they are familiar with or ones that they know the least about? Do mentors influence the topics that young researchers select? Does the pressure to publish impact a researcher’s topic of choice? It would be interesting to analyze authors’ processes in choosing the areas in which to focus their research.

References

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Table 1. ANOVA Table for First-Person Singular Pronouns

Between Subjects

	df	F	P
Type of Article	2, 95	40.77	<.001
Year of Publication	1, 95	0.02	0.90
Type X Year	2, 95	0.42	0.66

Within Subjects

	df	F	P
Subsection	3, 285	18.64	<.001
Type X Subsection	6, 285	21.86	<.001
Year X Subsection	3, 285	0.61	0.40
Type X Year X Subsection	6, 285	0.43	0.92

Table 2. Means for First-Person Singular Pronoun Use

	Narcissism	"Other" Personality Traits	Intelligence
Abstract	0.00^{a}	2.30^{bA}	0.09^{a}
Introduction	0.15^{ab}	0.24^{abC}	0.03^{a}
Procedure	0.44^{a}	1.48^{bB}	0.08^{a}
Discussion	0.13	0.02^{D}	0.11

NOTE: Means with different superscripts differ significantly $p < .05$. Lower case indicates within section comparison. Upper case indicates within journal type comparison.

Table 3. ANOVA Table for Personal Pronoun Use

Between Subjects

	df	F	P
Type of Article	2, 95	16.16	<.001
Year of Publication	1, 95	0.50	0.48
Type X Year	2, 95	0.09	0.91

Within Subjects

	df	F	P
Subsection	3, 285	5.44	< .001
Type X Subsection	6, 285	5.42	< .001
Year X Subsection	3, 285	1.58	0.20
Type X Year X Subsection	6, 285	0.78	0.59

Table 4. Means for Overall Personal Pronoun Use

	Narcissism	"Other" Personality Traits	Intelligence
Abstract	0.98^{A}	0.82^{A}	0.56
Introduction	1.50^{aB}	0.00^{bB}	0.53^{c}
Procedure	2.59^{aC}	0.16^{bB}	1.19^{c}
Discussion	1.39^{aAB}	0.14^{bB}	0.82^{c}

NOTE: Means with different superscripts differ significantly $p < .05$. Lower case indicates within section comparison. Upper case indicates within journal type comparison.

Appendix A – Articles on Narcissism

1. Bianchi, E. C. (2014). Entering adulthood in a recession tempers later narcissism. *Psychological Science*, *25*(7), 1429-1437.

2. Piff, P. K. (2014). Wealth and the inflated self: Class, entitlement, and narcissism. *Personality and Social Psychology Bulletin*, *40*(1), 34-43.

3. Cramer, P. (2011). Narcissism through the ages: What happens when narcissists grow older? *Journal of Research in Personality*,*45*(5), 479-492.

4. Arvan, M. (2013). Bad news for conservatives? Moral judgments and the dark triad personality traits: A correlational study. *Neuroethics*, *6*(2), 307-318.

5. Kapidzic, S. (2013). Narcissism as a predictor of motivations behind Facebook profile picture selection. *Cyberpsychology, Behavior, and Social Networking*, *16*(1), 14-19.

6. Yu, C. K. (2014). Normality, pathology, and dreaming. *Dreaming*, *24*(3), 203-216.

7. Arvan, M. (2013). 'A lot more bad news for conservatives, and a little bit of bad news for liberals? Moral judgments and the Dark Triad personality traits: A follow-up study'. *Neuroethics*, *6*(1), 51-64.

8. Mandal, E. (2014). Beauty and social influence: Adonization and its correlates. *Polish Psychological Bulletin*, *45*(1), 80-91.

9. Stoeber, J. (2014). How other-oriented perfectionism differs from self-oriented and socially prescribed perfectionism. *Journal of Psychopathology and Behavioral Assessment*, *36*(2), 329-338.

10. Foster, J. D. (2008). Incorporating personality into the investment model: Probing commitment processes across individual differences in narcissism. *Journal of Social and Personal Relationships*, *25*(2), 211-223.

11. Zondag, H. J. (2013). Narcissism and boredom revisited: An exploration of correlates of overt and covert narcissism among Dutch university students. *Psychological Reports*, *112*(2), 563-576.

13. Carpenter, C. J. (2012). Narcissism on Facebook: Self-promotional and anti-social behavior. *Personality and Individual Differences*, *52*(4), 482-486.

14. Carlson, E. N. (2013). Honestly arrogant or simply misunderstood? Narcissists' awareness of their narcissism. *Self and Identity*, *12*(3), 259-277.

15. Okada, R. (2010). The relationship between vulnerable narcissism and aggression in Japanese undergraduate students. *Personality and Individual Differences*, *49*(2), 113-118.

17. Strelan, P. (2007). Who forgives others, themselves, and situations? The roles of narcissism, guilt, self-esteem, and agreeableness. *Personality and Individual Differences*, *42*(2), 259-269.

18. Rauthmann, J. F. (2011). Acquisitive or protective self-presentation of dark personalities? Associations among the Dark Triad and self-monitoring. *Personality and Individual Differences*, *51*(4), 502-508.

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Appendix B – Articles on Intelligence

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Appendix C – Articles on Other Personality Traits

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