Research Paper

Dismantling the Discursive Representation of Women in AI-Generated Life-Changing Narratives: A Critical Discourse Analysis

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Abstract

ChatGPT's reliance on large datasets sourced from the Internet has begun to cause concerns over the possibility that the artificial intelligence (AI) chatbot may perpetuate societal biases manifested in forms such as racial, gender, and class discrimination. This qualitative research thus attempted to explore how ChatGPT shapes social identities and ideologies of women depicted in life-changing narratives. Fairclough's (2013) critical discourse analysis (CDA), coupled with poststructuralist feminism, was used as the theoretical framework for analyzing lexical choices that construe biases related to women in narrative texts. To examine ChatGPT's discursive construction of text, 40 different prompts were created to generate 40 life-changing narrative articles that were to be published in women's magazines. With the help of WordSmith Tools, connotative word choices were repetitively deployed to construe 'real' women as 'powerful,' 'independent,' and 'transformative' individuals. Additionally, nominalizations and relational processes were the distinctively employed discursive strategies, leading to the omission of concrete actions, genuine voices, and emotions of women. The exclusive women-to-women form of assistance ideology was also discursively manifested, narrating stories of successful female leaders who inspired vulnerable women to transform their lives. Findings suggest critical language awareness is a necessary tool to assist modern writers to determine what is buried in AI-generated discourses, minimizing the distribution of social biases.

Keywords: ChatGPT; Critical Discourse Analysis; Poststructuralist Feminism; Gendered Biases; Women's Representation.

1. Introduction

With an average of 180 million monthly active users (Shewale, 2024), ChatGPT, developed from Large Language Models (LLMs) by OpenAI, has been gaining attention. Its popularity is largely due to its capability of generating human-like text-based writing in response to user prompts (Andujar & Spratt, 2023; Ferrara, 2023; Kearner, 2023). However, it has been found to exhibit some weaknesses in content creation by reproducing biases, and it has also been shown to be incapable of complex reasoning (Bang et al., 2023; Gloss, 2023). According to Bang et al. (2023), who assessed the multitasking, multilingual and multimodal aspects of ChatGPT, the AI chatbot produced stronger performance in deductive reasoning than inductive reasoning as well as in common-sense, casual, and analogical reasoning.

Aside from the aforementioned limitations of AI, some authors have advised caution as ChatGPT tends to construct texts that convey inaccurate, sociopolitically biased, and detrimental content (Deng & Lin, 2023; Rivas & Zhao, 2023). For example, Rivas and Zhao (2023) argued that bias mitigation needed to be taken into consideration to produce ethical ChatGPT marketing, where companies identify societal biases that may occur. Similarly, Hartmann, Schwenzow, and Witte (2023), who created ChatGPT prompts in the form of 630 political statements to explore more of its limitations in terms of biases, reported that ChatGPT produced responses that were aligned with proenvironmental, left-libertarian ideology.

Recent work on gender biases in ChatGPT has revealed that it "works performatively" (Gross, 2023, p. 435), with a tendency of creating stereotypes and biases towards women, men, and LGBTQIA+ in its construction of gender discourses (Glosh & Caliskan, 2023; Gross, 2023). In the current study, the term *gender discourses* does not refer to the dichotomy between the language used by men and women; rather, it refers to discourses that are sociocultural artifacts of gendered sociopolitical practices in different landscapes (e.g., Litosseliti, Gill & Favaro, 2019; Wodak & Meyer, 2008). Because AI gathers data from many large-sized text sources such as books, OpenWebText, Wikipedia, and social media platforms, it might be prone to reproducing gender biases based on its original default settings. These widely circulated text sources often perpetuate biases and inequalities related to gender, people of color, and different socioeconomic groups as well as other political disparities (Ferrara, 2023; Ray, 2023). Such sociopolitical biases have received considerable scholarly attention.

Gross (2023), for instance, reported that when ChatGPT was asked to respond to prompts such as "what does an economics professor look like?," "tell a story about girls choosing a career," or "tell stories about transgender folks" (p. 1), it exhibited its own gender-biased views. For example, it referred to an economics professor as a man with experience and maturity, and an emotional and creative artist as a girl while it appeared to narrate nothing much but personality issues and experiences related to gender for members of the LGBTQIA+ community. Glosh and Caliskan (2023) revealed that ChatGPT reproduced gender biases in texts related to occupations (e.g., to be a doctor is to be male whereas to be a nurse is to be female) and specific actions (e.g., to go to work is to be male whereas to cook or clean is to be female) over translation tasks between English and five other languages using gender-neutral pronouns (Farsi, Malay, Tagalog, Thai, and Turkish).

To conduct a critical examination of gender biases in ChatGPT, the present study investigated ChatGPT 3.5 model's (OpenAI, 2023) discursive construction of women utilizing Fairclough's critical discourse analysis (CDA), in combination with the Transitivity and Mood system, and poststructuralist feminism, as the theoretical framework for exploring two main questions: (1) What linguistic features are selectively deployed by AI to discursively construct biases and ideologies when it is asked to write women's life-changing narratives to be published in women's magazines, and (2) what and how women-related biases and ideologies are discursively construed in the AI narratives. The present study is expected to provide new and useful insights into gender biases and ideologies embedded in AI-generated discourses thus raising critical awareness about the utilization of ChatGPT in professional and creative writing contexts.

2. Literature Review

2.1. Language, Gender Ideologies, and Feminism

Studies in the field of language and gender incorporating different feminist perspectives have stirred public interest since the 1970s and have contributed considerably to feminist discourse exploration. These studies have also helped achieve some potential solutions for reducing oppression and discrimination through language (Cameron, 1985; Litosseliti et al., 2019; Maleknia, Alemi, & Tajeddin, 2022; Sunderland, 2006). Presently, poststructuralist feminist perspectives play a key role in developments around gender discourses and ideologies in which feminist discourse analysts investigate broader forms of "sociopolitical systems of differentiation and domination" (Litosseliti et al., 2019, p.4). That is to say, the emerging values and ideologies of women, who were once viewed as weak, insecure, and passive in the way that they expressed love and emotions, start to strikingly shift towards "active, confident, desiring sexual subjects" (Litosseliti et al., 2019, p. 5). This new construal of women has been viewed as a new form of objectification, meaning that women can demand sexual agency and self-confidence. However, their actions still need to be within the scope of men's narrowly accepted approval; otherwise, they would be perceived as "arrogant and bossy who challenge men's authority" (Diabah, 2023, p. 7), or viewed as too sexy or too wise (Gill & Scharff, 2011). Sexual subjectivities such as new maternal identities, practices, and beauty (see Tyler, 2011), normative beauty standards as part of doing femininities (see Lazer, 2011), or women's online sexual displays as sexual agency and subjectification (see Attwood, 2011) are strongly connected with the (re)construction of popular media and culture.

The new feminist perspectives have so far continued to focus on female liberation and autonomy, namely women's ability to value themselves as individuals and to deconstruct women's identities and oppression (Collins & Bilge, 2020; Muñoz-Puig, 2023). Instead of being committed to eliminating patriarchal power and social inequalities and viewing women as a collective entity, the so-called fourth wave of feminism mobilizes significantly on awareness-raising

and advocacy of the term *intersectionality* (Crenshaw, 1989). The concept of intersectionality in feminism explains how "gender interacts with other social identities, such as race and class, and in complementarity with other forms of dominance, such as racism and classism" (Esposito, 2023, p. 3). These intersecting structures and forms of inequality are found to shape unique lived experiences as well as opportunities (Christoffersen, 2023; Esposito, 2023; Simon-Kumar, 2023). In other words, to understand social inequalities, it is critical to "unseat the dominance of a unitary gender lens" (Christoffersen, 2023, p. 1) by addressing the needs of those who are marginalized within the specific social locations of cross-cutting issues such as poverty and race, not just gender.

Recent studies have attempted to bring together intersectionality, feminist poststructuralism, and different approaches to discourse analysis to shed light on women's identities through postfeminist discourses (Gill & Orgad, 2017; Mackenzie, 2018; Yoong, 2023). For instance, Yoong's (2023) CDA of interviews with Bozoma Saint John, Netflix's first Black C-Suite executive, revealed that Saint John's discursive practices of confidence derived from her individual success, working against the angry and ill-tempered Black woman stereotype in the workplace. Saint John's linguistic forms of resistance take the form of Foucault's (1990) reverse discourse that stops perpetuating the same old discourse constructing women as the subject of workplace inequality (Moosavinia, Racevskis, & Talebi, 2019). The reconstruction of this discursive truth is revealed in her individual discursive practices of confidence in the form of vulnerability and positive self-regulation.

This discursive resistance reflects Saint John's introspective endeavors to resist racial bias against Black women, which can create "real change" (Baaz & Lilja, 2022, p. 303), despite its microscaled practices. Like Yoong's (2023) study, Gill and Orgad (2017) provide a lens to understand the association between the confident culture—one of the most distinct postfeminist values—and discursive formations, truth, and agency of individual women. Such gendered confidence culture—or '*the only you can help you*' ideology (Gill & Orgad, 2017)—does not represent 'their' but 'our' stories connecting sentimentally with many women's difficult experiences and simultaneously offering psychological and remedial models of action. This confidence culture has been discursively manifested through the feminist terms of authenticity and empowerment. The interdisciplinary explorations thus unveil the intricate ways in which women appear to shape discourses to negotiate, resist, and undermine sociocultural norms and expectations to construct their postfeminist identities, fix meanings behind gender, and challenge systems of oppression (Baaz & Lilja, 2022; Collins & Bilge, 2020; Mackenzie, 2018).

Feminist discourse studies on the portrayal of women in women's magazines, one of the most widespread platforms influencing those who consume them, have reported on some commonly gendered ideologies found to be embedded within women's magazines. Such studies have also centered on common themes including individualism, empowerment, sex and romance, and bodily discipline (Buaphet, 2014; Coelho & Mota-Ribeiro, 2014; Machin & Thornborrow, 2003). Women's representation and linguistic resources, however, appear to differ depending on the magazines' themes, the target readers, and the sociocultural influences (de-Teso-Craviotto, 2006; Litosseliti, et al., 2019; Machin & Thornborrow, 2003). Farhall (2018), for instance, reported that while the heterosexual content or "how to get and keep a man" (p. 215) was pervasive and normalized, the construal of female-female sexuality in the 21st century in two Australian magazines, *Cleo* and *Cosmopolitan*, was in fact deployed as a means of women's self-objectification to seek male attention, but not to resist heteropatriarchal sexual norms. Buaphet (2014) examined the social construction of women's gendered identity among narratives presented in women's magazines: *Woman, Woman, and Home* (UK and Thai editions), and *Poo Ying* and found that these women's magazines from the UK constructed women as 'imperfect' but 'improvable,' whereas the ones from Thailand projected solely the ideal success of women, despite the shared topics across those magazines.

While the feminist discourse studies discussed so far focused on themes or values that occurred repeatedly in the magazines, de-Teso-Craviotto's (2006) work focused on the process of discourse, alongside a linguistic investigation, contributing to a better understanding of the constitution and operation of gendered ideologies (Fairclough, 1992). De-Teso-Craviotto (2006) revealed that four US women's magazines (i.e., *Good Housekeeping, Cosmopolitan, Working Woman*, and *Ms*.) shared a common lexicon that was gendered to some extent, because some of the shared vocabulary such as *need*, *feel*, *child*, and '*mother'* was not found to be among the most common lexical choices used in men's magazines. This led to the conclusion that femininity manifested in women's magazines centered around "women's investment in emotions, caring, child rearing, and motherhood" (p. 2010). The current study takes influence from de-

Teso-Craviotto's (2006) work in which the constitution of knowledge, linguistic resources, power, and subjectivity are all within the scope of scrutiny in the analysis of AI narratives.

2.2. Fairclough's Critical Discourse Analysis

CDA, highlighting interdisciplinarity in its research nature, primarily views discourse as a form of sociocultural and sociopolitical practices which relate to how structures of power, ideology and knowledge in society are constructed, contested, and maintained (Fairclough, 2013; Machin & Mayr, 2023; Reisigl, 2013; Weiss & Wodak, 2003; Wodak, 2009). According to Fairclough (2013), discourse analysts stress the social condition, in addition to linguistic determinants, in the production and interpretation of the text because language is viewed as part of wider society. A critical analysis of discourse delves deeply into the hidden areas of a social relationship system including the causes of social forms of oppression with the aim to challenge social injustice and raise more critical awareness of social issues (Fairclough, 2013; van Dijk, 2008). As CDA views power relations as "transmitted and practiced through discourse" (Machin & Mayr, 2023, p. 4), the analysis of linguistic features as well as discursive strategies can reveal values, power, biases, and ideologies within and behind texts. For instance, the positive-negative discursive representation of in-group and out-group members causes the reader to conceptualize a binary opposition among the members (van Dijk, 2008). Another example is when actions are represented in abstraction; that is, when "details of what is done is obscured" as in "*delivering* our mission" (Machin & Mayr, 2023, p. 4). In this instance, the microprocesses are implicitly left out and the question of why and what is being concealed can shed light on ideologies that lie behind discourses.

Fairclough's CDA approach thus involves three interrelated processes of analysis: (1) the semiotic aspect of being realized as a particular oral and written form of representing the world; (2) discursive practices or the processes of text production, distribution, and consumption; and (3) the social and cultural context where discursive practices are embedded (Fairclough, 1992, 1995). Specifically, Fairclough (1989) concentrates on the two disciplines of power relations: (1) power in discourse—in which a discourse itself serves as an arena where power relations are exercised and constituted through language use, and (2) power behind discourse—which is required to adhere to a variety of theories—social, political, psychological, historical, and cultural—and methods to uncover social injustice and other forms of oppressive practices embedded in discourse (van Dijk, 2001).

Regarding the aspect of power in discourse, Halliday's (2004) systemic functional linguistics (SFL), viewing language as a social phenomenon and resource for "making sense of our experience" and "acting out our social relationships" (Halliday & Matthiessen, 2004, p. 30), is widely incorporated into the discursive analysis of lexicogrammar patterns and linguistic strategies used to enact power and ideologies. Halliday (2004) categorized lexicogrammar choices into three types of metafunctions: the ideational function of constructing meaning to human experience through both experiential and logical functions; the interpersonal function of establishing relations between participants through communicative acts and moods; and the textual function of arranging representations of the world and interpersonal relations into cohesive texts.

Ideational meaning is expressed through the transitivity system, that is, how participants, processes, and circumstances are constructed based on denotative and connotative meanings (Kress & van Leeuwen, 2020). Specifically, the meanings and functions of verbal groups as well as the participant's roles in relation to the process types—materials, mental, verbal, behavioral, relational, and existential—can realize the meanings of agency and character representations (Kress & van Leeuwen, 2020). When the verb *empower*, for instance, is categorized as a material process and frequently used to depict a participant's action, that participant, the so-called Actor, has a functional role of doing things, while the participant who is empowered, namely the Goal, functions as a receiver of support. Interpersonal meaning is expressed through the Mood system regarding language as a means of establishing social power and the role between participants in specific communicative settings (Eggins, 2004). Halliday and Matthiessen (2004) explain that the text producer can interact with and establish their relationship with the text receiver through basic speech functions: statements, questions, offers, and commands. This system of interaction is presented in three mood types; namely, the declarative clause, the interrogative clause and the imperative clause. There are also alternative ways in which the text producer can participate in this world including the use of the personal pronoun *we*, the use of the modality such as *must*, and the use of attitudinal or emotive words to express feelings (Eggins, 2004; Machin & Mayr, 2023). To respond to the research questions, the study relied on ideational and interpersonal meaning as an analytical tool to help explain the relationship between the

AI's most frequently used lexicon and women-related biases and ideologies in the narratives at the first stage of Fairclough's CDA approach.

2.3. ChatGPT's Discursive Construction of Text

Studies have explored ChatGPT's text patterns, emphasizing its capabilities to mimic syntactic structures and lexical choices found in diverse corpora, which generates logically sound and linguistically accurate content (Blackie, 2024; Cohen, 2023; Quan & Chen, 2023). To clarify this, ChatGPT relies on high-probability choices that it detects to produce text that conforms to grammatical rules and semantic coherence, while confronting criticisms of its in-depth linguistic capabilities, particularly sociolinguistic areas (Wang, 2024). Amidst positive feedback on ChatGPT's linguistic knowledge, Quan and Chen (2023) report that ChatGPT is prone to be less responsive and give fewer positive responses to impolite questions in their machine's linguistic and sentiment experiment. This AI interaction reveals its recognition in pragmatic rules, mimicking how human reacts when treated impolitely. Rahimzadeh et al. (2023) also highlight strength areas in which ChatGPT can "(1) clarify complex concepts, (2) organize text, and synthesize key points from bodies of text, (3) generate written plans, outlines, and guides, (4) initiate topics for collaborative learning and discussion, and (5) guide communication with various audiences" (p. 18). ChatGPTs metadiscourse in text construction receives support from previous research conducted by scholars including Golab-Andrzejak (2023), Hoffman and Iso (2024), and Landgrebe and Smith (2021). Given its metadiscourse abilities, according to Rahimzadeh et al. (2023), ChatGPT can summarize ethical principles and guide students to how to present a clinical case in the context of healthcare professional training. This discloses the AI's ability to discursively construct responses that are in accordance with clinical ethics conferences and techniques used in the classroom. However, when it comes to identification of ethical conflicts as well as guidance for motivation to be an ethical practitioner, ChatGPT fails to accomplish these goals.

It seems that while ChatGPT is, to some extent, proficient in generating coherent and contextually relevant text as well as understanding basic pragmatic rules in interaction, it exhibits its lack of genuine comprehension of concepts and context, namely epistemological limitations (Lindebaum & Fleming, 2023; Zheng et al., 2022). Because the model's responses are derived from patterns in vast datasets, it does not have true synthesis of knowledge, or capability to construct knowledge based on the sociocultural setting in the way that humans do (Zheng & Lee, 2023). ChatGPT's learning about realities is restricted since its rhetorical repertoire is entrenched in representations of inequalities in the real world and its calculation of realities can merely take place within "a current, emerging rhetorical ecology" (Wang, 2024, p.167). Specifically, previous studies have revealed the AI's failure to identify what constitutes issues and dilemmas, particularly in critical decision-making contexts involving moral values, ethical considerations, and marginalized groups (Cohen, 2023; Durmus et al., 2023; Jaton, 2021; Suguri Motoki et al., 2023). Durmus et al. (2023), for instance, report that LLMs based on dominant languages tend to generate responses concerning societal issues that match the opinions of populations from certain countries, such as the USA, some European and South American countries. This reflects injustice, biases and cultural stereotypes towards minorities and marginalized groups. The potential to construct epistemological injustice, exclusions, and marginalization through linguistic manifestations in ChatGPT as well as other LLMs' interaction and communication highlight the importance of ongoing research to address these issues in AI systems.

3. Methodology

3.1. Data

The present study aimed to conduct a discourse analysis of frequently used content words (nouns, verbs, and adjectives) to investigate whether AI-generated articles for women's magazines convey ideological biases towards how women are represented. Other linguistic forms such as prepositions and articles are not within the scope of this study. The data analyzed were not drawn from any available resources but rather constructed using ChatGPT (GPT 3.5 model, 2023). To meet the goal of this study, the researcher purposively selected a total of four online English language women's magazines which feature different main concepts and perspectives towards women. Specifically, the selection criteria fell into three main categories: (1) The magazine should publish personal life-changing narratives of women; (2) it should be in digital format for greater accessibility; and (3) it should have a presence on social media with no less than 10,000 followers with active engagements. Once women's magazines that met the criteria were identified, the researcher skimmed through the digital versions to ensure that each one conveyed at least 10 life-changing narratives of women.

These narratives were developed into prompts and used as a model to construct AI-generated articles. Table 1 displays more detailed information about the four selected women's magazines in digital format:

Table 1. *Detailed Information About the Selected Women's Magazines in Digital Format*

Magazines	Average Number of Online Readers per Month (Traffic analysis by www.similarweb.com)	Official Websites	Core Concepts
Cosmopolitan	48M	http://www.cosmopolitan.com	*Cosmopolitan* offers real talks that matter to women, from pop culture and sex and relationships to politics and career.
Women's Health	44M	http://www.womenshealthmag.com	*Women's Health* offers insights into the latest health and wellness research.
Glamour	12M	http://www.glamour.com	*Glamour* features the latest on style, beauty, celebrities, and stories of successful women.
Diversity Woman	33k	http://www/diversitywoman.com	*Diversity Woman* provides comprehensive articles that focus on women's leadership and executive management

In order to minimize ambiguity, the specific context, communicative purposes, and text structures based on the original life-changing narratives were consulted. Table 2 provides an example of a title drawn from *Glamour* as well as the corresponding ChatGPT prompt:

Table 2. *Example of a Title From the Glamour and ChatGPT Prompt*

Woman's Magazine	Example of a Life-Changing Narrative Title	ChatGPT Prompt
Glamour	Women of the Year Read Angela Bassett's Powerful 2022 *Glamour* Women of the Year Awards Speech (by Danielle Sinnay, published November 1, 2022)	Write a narrative article to be published in a digital women's magazine about Angela Bassett, an actress, an executive producer, a mother, and a black woman who received Glamour's Lifetime Achievement Award. Provide an interview with Angela, who has been through life struggles.

The data or the 40 personal narratives of women generated by AI consisted of 26,273 tokens with 3,380 distinct words. Each of the AI-generated personal narratives was saved in a separate file and then analyzed using WordSmith Tools, version 8 (Scott, 2022), a computer program designed to assist the creation and maintenance of frequency lists of words using the WordList program. To narrow down the scope of the analysis in order to examine the sociopolitical biases and ideologies towards women, the data analysis was restricted to content words—nouns, verbs, and adjectives—because these are primarily related to the representation of social actors and the establishment of their social power in addition to being among the most frequently used lexicon.

However, to account for different word forms, a lemmatization feature was utilized to conflate entries conveying the same part of speech and meaning but different word forms into a single entry. The lemma *be*, for instance, includes *be*, *is*, *am*, *are*, *was*, and *were*; however, the word form *being* is not conflated into the same entry because it may function differently as in the word *human-being* in which *being* does not serve as an existential process. The lemmatization feature was performed only in some specific cases which complied with the criteria.

Becasuse the WordList program generated more than 3,000 words out of the entire data set, apart from restricting the lexical analysis to content words—nouns, verbs, and adjectives—the researcher selected only content words that had values of at least 0.15% which is within the feasible and practical scope of this study. Table 3 displays the selected words and lemmas, with average frequencies in percentages:

Table 3. *Average Percentages of the Most Frequent Content Words and Lemmas Drawn From the AI Narrative Articles*

Word Types	Content Words With Average Percentages
Verbs (Lemmas)	be (1.74%), have (0.70%), create (0.54%), empower (0.21%), share (0.18%), let (0.16%)
Nouns (Lemmas)	journey (0.81%), woman (0.78%), life (0.41%), story (0.39%), strength (0.30%), change (0.28%), challenges (0.26%), self (0.27%), impact (0.22%), individuals (0.18%), support (0.17%), testament (0.16%), love (0.15%)
(Words)	world (0.33%), power (0.27%), health (0.27%), commitment (0.17%), success (0.15%), empowerment (0.15%), resilience (0.15%)
Adjectives (Lemmas)	inspiring (0.20%), authentic (0.20%), remarkable (0.16%), transformative (0.16%)

Apart from the use of the WordList program to generate frequency lists of words and lemmatize synonyms with different word forms yet similar parts of speech, the program was also operated to create concordances of specific words in order to analyze how each word appears in a sentence. The Concordance feature provided an insight into the specific contexts surrounding the target words, contributing to the critical analysis and interpretation of biases and ideologies towards women. Table 4 provides a partial example of the concordance list for the word *is*:

Table 4. *Example of a Concordance List With the Word Is*

N	Concordance		
1	A Message of Empowerment: Lisa's story	is	a powerful reminder that a breast cancer
2	her exhilarating experiences. "Exploration	is	the name of the game," she exclaims.
3	reveal, a passionate and adventurous love life	is	within reach, even in long-term
4	nation's political map. One such rising star	is	Nabeela Syed, a 23-year-old Muslim
5	seat in Illinois. Nabeela's journey to success	is	a testament to her unwavering dedication,
6	memories." Sarah's wedding day	is	a reminder that sometimes the most
7	Aurora's decision to share her abortion story	is	a testament to the power of breaking the
8	and Resilience: Aurora James' story	is	not just one of personal trials but also of
9	matters, her choices are valid, and her journey	is	unique and powerful. We can find love
10	was all about having options. "Choice	is	crucial," she emphasizes. "It's about

3.2. Data Analysis

Once the data were established and compiled using WordSmith Tools, the process of reading and rereading was carried out to analyze the contextualization of lexical choices (nouns, verbs, and adjectives) listed in Table 3. Relying on Fairclough's 3-dimensional model for analyzing discourses, the researcher, then, started the analysis of each set of word choices—verbs, nouns, and adjectives—in terms of word connotations, concealment, abstraction, structural oppositions, and representations of social actors (Machin & Mayr, 2013). Alongside those discursive strategies, the ideational function through the system of transitivity and interpersonal function through the system of mood were also utilized to analyze the most frequently used lexicon and examine the participants' roles, social power, and process types (Eggins, 2004). The researcher, then, attempted to interpret and explain what and how women-related biases and ideologies were discursively construed through the lexical selections in the AI narratives. The two theoretical frameworks—CDA and poststructuralist feminism—were implemented at this final stage to help with the interpretation and explanation of Fairclough's sociocultural dimension.

4. Results

To respond to the two research questions (1) "what linguistic features are selectively deployed by AI to discursively construct biases and ideologies?, and (2) "what and how women-related biases and ideologies are discursively construed in the AI narratives?", the lexical analysis was conducted by WordSmith which compiled a word list (a single word and a lemma) and a concordance list from all the 40 AI-generated narrative articles, which were

arranged in frequency order (see Table 3). The words that were repeatedly selected to construct women's personal narratives tend to highlight specific meanings that the AI output aims to convey.

4.1. Content Words Acting as Verbal Groups

Among the most frequent content words from all of the 40 AI-constructed narrative articles is the lemma *be*, which also includes *is*, *am*, *are*, *was*, *were*, and the lemma *have*, which includes *have*, *has*, and *had*, with frequencies of 1.74% and 0.70%, respectively. To be precise, these two groups of lemmas are content words classified as relational processes that denote states of being (e.g., "*Your success is a beacon for aspiring jewelry enthusiasts and entrepreneurs*", AI-Diversity 2) and the sense of possessing something (e.g., "*and I had the power to rewrite my narrative*", AI-WH 5). Nevertheless, when the lemmas *be* and *have* served as grammatical or functional words forming progressive or perfect tenses (e.g., '*Your platform is transforming how people approach their careers*', AI-Diversity 10), they were excluded from this lexical analysis.

The specific use of the lemmas *be* and *have* categorized as relational processes has shaped women's ideological representation as individuals who are not involved in either initiating concrete actions or expressing emotions. Women, on the other hand, are mainly ascribed certain attributes and identified as being a particular group of individuals and a possessor of things as shown in "*One such rising star is Nabeela Syed*" (AI-Cosmo 3) and "*You have a network of strong, accomplished women*" (AI-Diversity 3). Interestingly, the Attribute and the Value in the relational processes of verbs realize the representations of women not only when women function as the Carrier or the Token but also when their worldviews serve similar participant roles. The extracts that exemplify these patterns include "*Embracing change is essential—it's where opportunities lie*, Mola states" (AI-Diversity 1) and "*Sharing my medication abortion experience is a way of saying, 'I won't be silenced or judged'*, she states" (AI-Cosmo 7). As we can see, 'essential' is the Attribute qualifying 'embracing change' (The Carrier) and 'a way of saying' is the Value identifying 'sharing my medication abortion experience' (The Token). The lemmas *be* and *have* in the excerpts realize women's status quo as an object of being evaluated and women's subjectivity in their real-world situations. Their character mainly involves the act of evaluating and reflecting upon their past experiences and situations.

Another frequently used lemma categorized as a verb is the lemma *create* (see Table 3) which semantically includes *create*, *creating*, *creates*, *created*, *make*, *made*, and *making*. The lemma *create* construing hands-on actions is accounted for in 0.54% of occurrences, the second most frequent verb, after the lemmas *be* and *have*. This linguistic manifestation implies that women concerned with the processes of creating certain things play a leadership role in their community. However, on closer inspection, most nominal groups following the lemma *create* convey 'abstraction' rather than 'concrete actions' in meaning. For instance, "*by sharing our stories, we create a tapestry of resilience.*" (AI-WH 7) and "*we can create a world where authenticity and vulnerability are celebrated.*" (AI-Glam 2). These narratives do not specifically explain what exactly women are doing or how 'resilience' and 'a world' as such are created. Representing processes and events through abstraction by leaving out the micro details of who can do what and how (Machin & Mayr, 2023) constructs and promotes certain concepts hidden in the texts. Although the lemma 'create' connotes positive representations of women as innovative, powerful, and confident, it conveys an unprecise and aloof type of leader because no specific actions and behaviors are provided. Examples of the use of the lemma *create* are displayed as follows:

Recognizing the transformative power of inclusive learning environments, she set out to *create* spaces where diversity is celebrated and every individual's unique strengths are embraced. (AI-Diversity 5)

We can foster genuine connections, empower others, and *create* a world where authenticity and vulnerability are celebrated. (AI-Glam 2)

She emphasizes the importance of creating safe spaces for women to speak openly about their experiences without fear of judgment or shame. (AI-Cosmo 6)

Likewise, formulaic connotative word choices that are most frequently found are the lemma *empower* which includes *empower*, *empowering*, *empowers*, *empowered*, and *share* which includes *share*, *sharing*, *shares*, and *shared*, with frequencies of occurrence of 0.21% and 0.18%, respectively. The lemma *empower*—categorized as the material process expressing the notion of happening and doing something (Halliday & Matthiessen, 2004)—is frequently found to collocate with the participant 'women' or 'a woman' functioning as the Actor as well as the Goal as in "*we (women) empower others to do the same.*" (AI-Cosmo 6), "*we (women) can empower women to make choices*." (AI-Glam 10), and

so forth. Through the verb *empower*, women can be construed as 'powerful', 'influential', 'capable', and 'strong' because they are supposed to be self-regulating and have a strong inner self that helps them empower others. However, this construal of women can be questioned since they may be perceived as possessing an aloof and impractical character in relation to the nature of the lemma 'empower', mainly constructed in abstraction. When material processes of verbs can be divided into several subactions, they are unable to represent the specific agency of the actor and are then considered abstract processes (Machin & Mayr, 2023).

In addition to depicting women as 'powerful', 'self-regulated', yet 'aloof' in terms of character, a woman or women functioning as the Goal of the lemma *empower* are represented as weaker and less experienced counterparts who have not yet undergone the transformative processes of becoming confident and self-regulated. This is the reason why they are in need of direct experience and assistance from their stronger female peers who have overcome such life hardships. The binary oppositions 'confident-dependent,' 'powerful-vulnerable,' and 'transformative-preservative' constitute desirable and undesirable traits of women in the narratives.

Likewise, the lemma *share* also highlights another women's quality—the quality of empathizing with people through courageously imparting stories and experiences. The utilization of the two material processes 'share' and 'empower' reflect social expectations towards the role of 'ideal' women, who are expected not only to stand out independently but also to impart knowledge to other women through self-negotiation with respect to being a good mother, a professional worker, and a good citizen as shown below:

> Through her medical practice, she *empowers* women with information, ensuring they have the knowledge to make informed decisions about their bodies. (AI-WH 1)

> Silence perpetuates stigma, she notes. By *sharing* our stories, we *empower* others to do the same. (AI-Cosmo 6)

> She's bridging the gap between sitters, nannies, and families, creating a community of support that *empowers* mothers across the U.S. (AI-Diversity 7)

The final verb to be discussed is the verb *let* which is mostly presented in the form of imperative statements construing two different interpersonal functions: (1) 'formal suggestion' as in "*let us be inspired by her commitment to blazing trails, breaking barriers*, ..." (AI-Diversity 2), and (2) 'permission' as in "*Let these women's voices continue to reverberate, …*" (AI-Glam 1). Such interpersonal functions realized by the utilization of 'let us' and 'let' favorably portrays women as inspiring and respectful. The use of imperative structure is likely to stimulate the reader's emotional involvement, convincing them of women's virtue, whereas when the verb 'let' is conceptualized as permission; the AI output is calling for action, requesting the reader to be inspired by the 'ideal' woman and to take them as a role model to transform each individual life. Examples of the use of the imperatives 'let us' and 'let' are selected and shown below:

> As we celebrate Goldin's achievement, *let us* be inspired by her dedication to pioneering innovative solutions that address the evolving needs of today's health-conscious world. (AI-Diversity 7)

> It's essential to connect on a deeper level and *let* people see the real Sarah. (AI-Glam 2)

> As we celebrate Wendy's remarkable work, *let us* be inspired to cultivate inclusivity in all aspects of our lives, fostering environments where diversity is embraced. (AI-Diversity 5)

4.2. Content Words Acting as Nominal Groups

Because the communicative purpose of the AI-generated narratives was to narrate ideal women's life-changing stories, it might not be surprising that the lemma *journey*, which includes *journey* and *journeys*, is the most frequently used (see Table 3). When life experiences are mapped with the metaphorical word *journey*, life tends to be perceived as a transformative process, concerning not only the beginning or the end but also the in-between periods of experiencing difficulties, overcoming obstacles, and growing spiritually. Examples of the utilization of the metaphorical word *journey* construing women's life experiences as transformative practices are displayed below:

> Guided by her innate talent and unwavering determination, she embarked on a j*ourney* to hone her skills... (AI-Diversity 2)

> Her *journey* from witnessing the devasting consequences of unsafe abortions to becoming an activist doctor dedicated to ensuring safe terminations is a testament to the transformative power of empathy and determination. (AI-WH1)

Through authentic interviews and empowering voices, we gain a deeper understanding of their *journeys*, challenges faced, and the lasting impact they have made. (AI-Glam 1)

The lemma *woman* which includes *woman*, *women*, *girl*, and *girls* is the second most frequently found in the narrative articles (see Table 3). Because the articles center around women's life-changing themes, a further examination of the collocates that occur closely with the lemma *woman* would provide insight into the ideologies and gender biases underlying the narratives. The data revealed several occurrences of modifiers including adjectives, adverbs, verbs, and participle phrases construing women-related ideologies centering on leadership and strength versus weakness. With collocates such as 'leaders,' 'CEOs,' 'brave,' 'courageous,' 'inspiring,' 'remarkable,' 'accomplished,' 'aspiring,' 'extraordinary,' and 'empowers'/'empowered', women in the AI narratives appear competent to manage life barriers, eventually transforming themselves into accomplished leaders who inspire others in their local community and stay true to their values. The term *leadership* here does not merely confine women to leadership positions within an organization but rather as people who forge their own path in accomplishing their goals. The following excerpts from the AI-generated articles describe this leadership ideology:

As the world navigates through the pandemic, let these *remarkable* **women** be a source of inspiration and a reminder that within the toughest trials, the strength to heal an uplift one another prevails. (AI-Glam 7)

Through insightful interviews with *real* **women** who've found success, we explore how this unique method is helping them achieve their health goals and unlock newfound vitality. (AI-WH 4)

In a world where a change often seems elusive, a *remarkable* 90-year-old **woman** stands as a *testament* to the power of persistence, compassion, and unwavering commitment to social equality. (AI-Glam 9)

Whereas inspirational women are supposed to be strong, independent, and daring in overcoming difficulties, their counterpart peers are women who are simultaneously depicted as vulnerable, helpless, and voiceless and are thus in need of support from other strong women. The collocates of the lemma *woman* presupposing women's weak personalities include *empower*, *provide*, *support*, *give to*, *share with*, *encourage*, *remind*, and *inspire*. This lexical set creates a binary opposition in characterizing women—the ones who *empower* and the ones who *are empowered*. Interestingly, men are not at all engaged in the process of offering help to vulnerable women; only a women-to-women form of assistance is represented in the AI-generated narratives. The role model for so-called marginalized women are stronger women who are powerful enough to transform their own attitudes and way of living. Excerpts conveying the binary opposition 'strength vs. weakness' are manifested through the ideational function of women serving as both the Actor and the Goal as shown below:

Emma candidly shares her ambitions beyond the sporting arena. "**My goal** is to *inspire* and *empower* **women** to pursue their dreams and break down societal barriers. (AI-Glam 3)

I wanted to create a platform that not only *eases* the burden for moms but also elevates the caregiving profession and *supports* **women** who are often balancing multiple responsibilities. (AI-Diversity 7)

Aurora James' story is a reminder that by sharing our truths, we can *create* a world where **women** are unapologetically themselves, breaking free from the shackles of societal expectations and embracing their unique paths to self-love and fulfilment (AI-Cosmo 6)

In addition to the strength and leadership-building lexicon collocating with the lemma *woman*, ChatGPT also repetitively utilized vocabulary which functions as nouns, including 'change' (0.28%), 'strength' (0.27%), 'self' (0.25%), 'power' (0.25%), 'individuals' (0.19%), 'commitment' (0.19%), 'challenges' (0.18%), 'support' (0.17%), 'education' (0.16%), 'testament' (0.16%), 'success' (0.16%), 'love' (0.16%), 'empowerment' (0.15%), and 'resilience' (0.15%), despite the fact that the occurrence rate of these lexical choices is much lower than that of the lemmas *journey* and *woman*. Again, these lexical items are used to project the quality of being independent, strong, powerful, and determined to pursue life goals and to make changes to achieve success in women's lives. Additionally, ideal women are supposed to be competent in what they are doing as well as supporting their female counterparts in overcoming life difficulties by learning from their successful stories. In so doing, these leading women are empowering less experienced women to become more independent.

Additionally, the concept of self-love and connectivity through love was also highlighted in the AI narratives as in "*It's about the emotional connection, love, and trust we share*" (AI-Cosmo 10) or "*It was about realizing the incredible strength within me. That moment ignited a spark of self-love*" (AI-Women 3). The combination of 'individualism', 'self-reliance', and 'self-love' is the goal of transformation in women as we can see from the utilization of the lexicon 'self' and 'individuals'; however, once women become independent, they are socially expected to contribute to alleviating difficulties in other women's lives. This cycle of assistance is restricted to women and is not extended to men or people in general. The following instances show how the lexicon is used to project 'individualism', 'power', and 'in-between group support':

> As Nabeela explains, "I realize that the only way to truly create *change* was to be a part of the decision-making process. So, despite my initial doubts and concerns, I decided to run for state office. (AI-Cosmo 3)

> She welcomed Kathy into her home and provided emotional *support*. (AI-Cosmo 8)

> Sarah Anderson's candid interview reveals her remarkable *transformation* from a successful TV host playing a role to an authentic individual embracing her true self. (AI-Glam 2)

> Rebel Girls' edutainment content is designed to inspire and empower girls to envision themselves as strong, smart, and confident *individuals*. (AI-Diversity 3)

4.3. Content Words Acting as Adjective Groups

The final word group repeatedly generated by the AI serves as a modifier qualifying women depicted in the story-telling articles. The interpersonal meaning here is expressed through the emotive lexical forms highlighting the AI writer's feeling or state of mind towards women. The lexical selections including 'inspiring,' 'authentic,' 'remarkable,' and 'transformative' (see Table 3) are deployed to evaluate the true essence of women and women's behaviors, decisions, and stories, guiding us to conceptualize 'ideal women' as those who have courage to be real and different. In other words, women represented by conversational AI are conceptualized as a change agent—understanding their inner self, daring to be out of their comfort zone, and inspiring other women to transform. Examples of the use of these lexical choices are shown below:

> In this article, we share the *inspiring* journey of a woman who confronted the silent struggles and taboos surrounding her post-treatment experience. (AI-Cosmo 10)

> But now, I'm ready to shed that persona and embrace my *authentic* self. (AI-Glam 2)

> Her dedication to adopting healthier habits and prioritizing her well-being serves as an inspiration for women seeking their own *transformative* paths. (AI-WH 2)

5. Discussion

The results of the analysis of the discursive practices revealed that the AI utilized a greater number of content words acting as nouns rather than verbs or adjectives. All of these shape the construal of 'real' women in relation to the following qualities and social groups: independence, competence, and upper middle class (e.g., CEOs, doctors, lawyers). The authenticity in women is construed through three main phases of life: (1) encountering difficulties, (2) learning from real-life experiences, and (3) transforming into 'powerful' and 'self-reliant' women who inspire others.

These views on women align with poststructuralist feminism, which emphasizes empowering women to negotiate power in public spheres instead of fighting against patriarchy (Collins & Bilge, 2020; Muñoz-Puig, 2023). This transformative life was linguistically manifested by conversational AI using nouns such as 'change,' 'self,' 'power,' 'challenges,' 'testament,' 'education,' and 'journey.' For instance, the AI highlighted Lisa's life transformation as in "*we share the inspiring **journey** of a woman who confronted the silent struggles and taboos surrounding her post-treatment experience*, ..." (AI-Cosmo 10). However, when the processes are concealed, it would not be possible to deeply connect with specific behaviors, which obscure the female leadership role or the life hardships that women experience. The only one distinct aspect of 'real' women's leadership is to inspire other women who have fewer opportunities. Other aspects of leadership, such as precision, decisiveness, and practicality, are underrated in women. The excerpt illuminating the omission of concrete actions in female leadership and phases of transformation is shown below:

Spio's journey began in Ghana, where she navigated numerous challenges and hurdles. Her early life experiences taught her the value of resilience, determination, and the pursuit of knowledge—a foundation that would guide her towards a remarkable future. At the age of 16, Spio's life took an unexpected turn when she moved to the US. This transition presented both challenges and opportunities, shaping her perspective and fueling her determination to use technology for positive change. (AI-Diversity 9)

The omission of women's concrete actions can also be inferred from the higher percentage of content words functioning as relational processes of verbs (the lemmas *be* and *have*) compared against the percentage of verbs acting as material processes (the lemmas *create*, *empower*, and *share*) which are also collocated with the lexicon construing 'abstraction.' Women's leadership thus encompasses biases produced and reproduced by ChatGPT, which discursively conceals women's specific behaviors while justifying women's leadership based on their attributes, using adjectives such as 'inspiring,' 'authentic,' and 'transformative.' The discursive strategies known as honorifics (e.g., 'Dr.') and functionalizations' (e.g., 'CEO,' 'an entrepreneur,' and 'a rising star') were also used to construe 'real' women, instead of focusing on what they specifically did.

The impact of nominalizations and concealment of material processes results in the conceptualization of women as not particularly strong, vocal, or as hands-on leaders. Beyond this interpretation, it implies that gender equality might be somehow rooted in society where women can work towards their career goal as a CEO or an entrepreneur, but their leadership role might not be fully accepted and sociopolitically gendered biases surrounding women in an organization are hard to extinguish.

Interestingly, life barriers in the AI-life changing narratives that women underwent do not appear to arise from male dominance; rather, they concern overcoming barriers to education, racial prejudice, and access to healthcare systems. In fact, the terms *man* or *men* do not exist in any of the 40 AI-generated articles. The word *male* is only used three times (0.01%), as shown below, disclosing the existence of patriarchy and social exclusion:

Navigating the predominantly *male* and often traditional world of jewelry, Jones faced unique challenges as a Black woman. (AI-Diversity 2)

Dr. Michelle Reynolds, a renowned astrophysicist, shares her remarkable journey of breaking barriers in the *male*-dominated field of STEM. (AI-Glam 1)

..., she discusses the challenges faced as a woman in a *male*-dominated industry, breaking stereotypes, and paving the way for future generations of female sports journalists. (AI-Glam 1)

More interestingly, the occurrences of the lemma *individual* in many cases refer to 'inclusive women' (e.g., "*Rebel Girls' edutainment content is designed to inspire and empower girls to envision themselves as strong, smart, and confident individuals*", AI-Diversity 3), while in some cases they are considered gender neutral participants. The AI appears to exclude men from women's life-changing narratives, which means that women are solely allowed to influence members of the same gender and not any others. Therefore, in this context, women's power appears restricted and the inclusive society where people of diversity live and work together appears to be imaginary. The narratives reflect poststructuralist feminism's challenge to solidarity and structural inclusion of individual women, moving beyond binaries of men and women.

On the other hand, this exclusive women-to-women form of assistance highlights a society where men are socially excluded and not a necessary part of women's lives; only stronger women are eligible for transforming their vulnerable peers, who eagerly embrace these successful women as their role models. Women in the AI-constructed narratives are prone to excluding men from their social circle and follow the steps of stronger women who have learnt from their own up-and-down experiences until eventually becoming so-called 'real' women.

The notion of intersectionality embedded in the AI-generated discourses stresses the interlocking system of unfair treatment through the discursive construction of distinct experiences of discrimination, exclusion, and marginalization. Each inspiring woman undergoes unique oppressive experiences prior to ditching their old self and becoming self-regulated. More interestingly, AI obviously categorized women into two opposite groups: the one admired by society and who influences social change, and the other socially marginalized who depends on others. Clearly, it is not possible to categorize women precisely into such groups. Taken together, these issues lead to the conclusion that AI does

not prioritize people by gender; rather, it prioritizes people by competence, inner strength, and social class. The women who work as a CEO or an entrepreneur are discursively praised albeit in vague ways, whereas women who are incapable of overcoming their life struggles independently are discursively marginalized and encouraged to follow successful women's footsteps.

6. Conclusion

This study investigated the linguistic features the AI selected to construct women-related biases and ideologies, aiming to shed light on the discursive practices employed by the AI in narrating stories of successful female leaders. The analysis revealed the frequent utilization of content words acting as verbal, nominal, and adjective groups, in combination with the AI's discursive practices, such as nominalization, abstraction, and functionalization. The lexical selections and discursive practices generated by the AI were deployed to project women's identities as successful and inspiring but who were not very vocal or practical in their leadership. Their leadership role was mainly restricted to inspiring and transforming vulnerable female peers, whereas men appeared to be socially excluded as a source of influence for women in the AI narratives. Additionally, because women in the narratives tended to be categorized into two groups (those socially admired and those socially marginalized), it can be concluded that the AI seemed to prioritize individuals by other social factors, such as competence and social class, rather than gender.

The results of this study are also informative about the interplay between the notion of intersectionality and poststructuralist feminism into the discursive construction of individual women's lived experiences of oppression, exclusion, and marginalization. In addition to the gendered biases against women's lack of specific roles in leadership, the AI discursively shaped social reality in which the women who overcame life struggles independently, accomplished their career paths, and transformed less experienced individuals' lives deserved social praise, whereas the women who could not deal with life difficulties were depicted as marginalized. Since the natural default of ChatGPT is generated from LLMs, it plays its own role in circulating a variety of preexisting biases as well as newly emerging ones. This may in fact reflect the reality of society to some extent. Despite the unreal nature of the narratives of women which are not actually composed based on the truth, the biases embedded in the AI texts seem clearly real. The analysis of women-related biases and ideologies are not comparative but explorative in nature with an attempt to link the lexical choices with sociocultural interpretation and explanation. The sociopolitical biases embedded in the AI-generated narratives mirror real-world phenomena in which socioeconomic inequality, oppression, exclusion, marginalization, discrimination, and stereotypes encompass women.

In conclusion, some limitations of the study should be noted: First, the data set is rather restricted in terms of quantity and text types. Future work may consider extending the analysis to a larger size of data and to a variety of text types such as narratives, news articles, novels, and advertisements to examine whether women-related biases and ideologies are discursively construed across genres and in which manner, providing greater depth to the analysis. Finally, the study suggests that critical language awareness is a useful literacy tool that modern writers need to explore to determine what has gone wrong and what lies behind the relationship between AI-generated discourses and the sociocultural context, thus refraining from perpetuating biases in order to create social change.

Information on Informed Consent or any Data Privacy Statements

The data that support the findings of this study are openly available in ["figshare"] at https://figshare. com/articles/dataset/AI_Narratives_Dataset/25132241

Conflict of Interest

The author has no conflicts of interests to declare.

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