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Linguistic Fallacies Due to the Wrong Use of Language on Social Media: A Sociolinguistic Analysis

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Abstract: Social media platforms have transformed communication, introducing informal linguistic practices that foster fallacious reasoning. This study examines linguistic fallacies—equivocation, strawman, ad hominem, and false dichotomy—on platforms like Twitter (now X) and Reddit. Through content analysis of 600 posts and a survey of 200 users, we quantify fallacy prevalence, identify sociolinguistic drivers, and assess impacts on discourse. Results indicate 65% of posts contain fallacies, driven by anonymity, informality, and rapid communication. Users re- port frustration with fallacious discourse, yet only 32% can identify such errors, revealing a digital literacy gap. These fallacies amplify misinformation and polarization, necessitating educational and platform-based interventions. We propose digital literacy programs and stricter moderation to enhance online dialogue.

Keywords: *Linguistic Fallacies, Social Media, Equivocation, Ad Hominem, Strawman, Misinformation, Digital Literacy*

1 Introduction

Social media platforms, including Twitter (now X), Reddit, and Instagram, have revolutionized communication by enabling rapid, informal exchanges across global audiences (8). This shift has introduced linguistic challenges, notably the rise of fallacies—errors in reasoning stemming from language misuse (24). Common fallacies, such as equivocation (ambiguous word use), strawman (misrepresenting arguments), ad hominem (personal attacks), and false dichotomy (oversimplified choices), distort online discourse and con- tribute to misinformation (1; 9). The informal, anonymous, and fast-paced nature of social media exacerbates these issues, undermining rational debate and fueling societal polarization (17; 3).

This study aims to: (1) quantify the prevalence of linguistic fallacies in social media discourse, (2) identify sociolinguistic factors like anonymity and informality driving these fallacies, and (3) evaluate their impacts on digital discourse and user perceptions (19). By analyzing 600 posts from Twitter (now X) and Reddit and surveying 200 users, this research provides a sociolinguistic perspective on how linguistic practices shape online communication (15). The findings offer insights for educators, platform developers, and policymakers to foster constructive digital dialogue (22).

2 Literature Review:

Social media has reshaped linguistic practices, promoting informal communication through slang, abbreviations, and emojis (8). These platforms create dynamic sociolinguistic environment where language evolves rapidly (15).

However, this informality often leads to linguistic fallacies reasoning errors rooted in language misuse (24). For instance, equivocation occurs when ambiguous terms like "freedom" mislead audiences (1).

Anonymity and rapid communication amplify fallacious reasoning (14; 3). Anonymity emboldens aggressive rhetoric, such as ad hominem attacks, while rapid exchanges limit critical reflection, fostering strawman arguments (14; 3). A bibliometric analysis by Sun, Y., Wang, G., & Feng, H (19) highlights discourse analysis as a key method for studying social media language but notes limited focus on fallacies. Misinformation thrives on fallacious language, with false dichotomies oversimplifying complex issues (9). Toxic language, including ad hominem attacks, exacerbates polarization (23; 17).

Platform design influences linguistic practices. The absence of editorial oversight al- lows fallacies to proliferate (5). Character limits on Twitter encourage oversimplification, leading to false dichotomies (22). Hashtags frame arguments emotionally, distorting discourse (25). Context collapse where diverse audiences misinterpret posts fosters equivocation (13; 16). Informal language reduces argumentative rigor (10), while digital communication's immediacy limits deliberation (4). Gendered language can perpetuate fallacious stereotypes (11), and multilingual users face misinterpretation risks (20). The blending of spoken and written forms increases ambiguity (7), and conversational norms blur public and private discourse, fostering fallacies (18; 21). Performative posturing on social media further encourages fallacious rhetoric (13; 2; 12; 6).

Despite these insights, systematic analyses of linguistic fallacies on social media re- main scarce (19). This study addresses this gap by examining fallacy prevalence and sociolinguistic drivers (22).

3 Methodology:

A mixed-methods approach was employed, combining quantitative content analysis of social media posts with a qualitative survey of user perceptions.

3.1 Data Collection:

We collected 600 public posts from Twitter (now X) and Reddit, targeting politically charged discussions on topics like climate change, elections, and social justice to capture fallacious language. Posts were sampled purposely from January to April 2025, focusing on threads with high engagement (over 150 likes, retweets, or comments). Twitter posts were gathered using the platform's public API, filtering for hashtags like #Climate- Change and #Election2024. Reddit posts were scraped from subreddits such as r/politics, r/worldnews, and r/climate, ensuring a diverse range of viewpoints. A survey was dis- tributed to 200 users aged 18–40, recruited via Reddit forums (e.g., r/AskReddit) and Twitter hashtags (#SocialMedia, #DigitalLiteracy). The survey comprised 10 Likert-scale questions (e.g., "I encounter personal attacks in online debates," rated 1–5) and 3 open-ended questions (e.g., "How does misleading language affect your trust in social media?"). Participants were incentivized with a chance to win a $20 gift card to ensure diverse responses.

3.2 Data Analysis

Content analysis was conducted using a predefined coding framework based on four linguistic fallacies: - Equivocation: Using ambiguous words to mislead (e.g., "justice" with unclear intent). Strawman: Misrepresenting an opponent's position (e.g., exaggerating a policy's impact). - Ad Hominem: Attacking a person's character (e.g., "You're just a troll"). - False Dichotomy: Presenting two options as the only ones (e.g., "Pro-science or anti-progress").

Two researchers independently coded each post, achieving a Cohen's kappa of 0.87 for intercoder reliability. Posts were categorized by fallacy type, platform (Twitter vs. Reddit), and engagement level (e.g., high: >500 interactions; medium: 150–500). Descriptive statistics calculated fallacy prevalence, and chi-square tests examined differences across platforms and engagement levels. Logistic regression assessed whether post length (e.g., Twitter's 280-character limit vs. Reddit's longer posts) predicted fallacy occurrence. Survey responses were analyzed using NVivo software, with thematic coding to identify patterns in user perceptions (e.g., "frustration with toxic discourse"). Likert-scale response were quantified with means, standard deviations, and frequency distributions. Open-ended responses were coded for sentiment (positive, negative, neutral) and cross- referenced with Likert-scale

data to validate themes.

4 Results:

4.1 Prevalence of Linguistic Fallacies

Of the 600 posts analyzed, 390 (65%) contained at least one fallacy. The breakdown was: - Ad Hominem: 35% (210 posts), e.g., "You're a clueless activist who doesn't understand economics" (Reddit, r/politics, March 2025). - Strawman: 25% (150 posts), e.g., "They want to ban all cars and force everyone to ride bikes" (Twitter, #ClimateChange, February 2025). - Equivocation: 18% (108 posts), e.g., "Liberty means no restrictions, so why are we debating?" (Reddit, r/worldnews, January 2025). - False Dichotomy: 12% (72 posts), e.g., "You're either pro-science or anti-progress" (Twitter, #Science, April 2025). Twitter posts had a higher ad hominem prevalence (40%, 120/300) than Reddit (30%, 90/300) ($\chi^2 = 6.45$, $p < 0.05$). High-engagement posts (>500 interactions) showed a 70% fallacy rate compared to 60% for medium-engagement posts ($\chi^2 = 4.12$, $p < 0.05$). Logistic regression indicated that shorter posts (e.g., Twitter's <280 characters) were 1.5 times more likely to contain fallacies (odds ratio = 1.52, $p < 0.01$), suggesting brevity contributes to rhetorical errors.

4.2 Sociolinguistic Drivers

Informality was prevalent in 72% of posts (432/600), with slang (e.g., "lol," "smh"), abbreviations (e.g., "govt," "ppl"), and emojis (e.g., ,) obscuring argument clarity in 65% of these cases. Anonymity drove 50% of ad hominem attacks (105/210), with anonymous Reddit users (e.g., throwaway accounts) 2.2 times more likely to use insults than identifiable users ($\chi^2 = 8.12$, $p < 0.01$). Rapid interaction was significant, with 88% of threads (528/600) receiving responses within 5 minutes, correlating with a 68% fallacy rate com- pared to 55% for slower threads (>10 minutes) ($\chi^2 = 5.98$, $p < 0.05$). Hashtags on Twitter amplified fallacious framing in 30% of posts (90/300), e.g., #WokeAgenda exaggerating opponents' positions. Multilingual posts (e.g., English-Spanish code-switching) showed higher equivocation rates (25%, 15/60) due to translation ambiguities.

4.3 User Perceptions

Survey results indicated that 70% of respondents (140/200; mean = 4.2, SD = 0.8 on a 5- point Likert scale) found fallacious language disruptive to dialogue. Ad hominem attacks were most noticed, with 62% (124/200) reporting frequent encounters. Thematic analysis of open-ended responses revealed four themes: - Frustration with Toxicity: 65% (130/200) described debates as "toxic" or "pointless," e.g., "People just attack instead of explaining their point." - Trust Erosion: 58% (116/200) reported reduced trust in social media, citing "misleading arguments" and "constant bickering." - Low Fallacy Awareness: Only 32% (64/200) felt confident identifying fallacies, with 45% (90/200) unaware of terms like "strawman" or "equivocation." - Desire for Moderation: 50% (100/200) called for stricter platform rules, e.g., "Platforms should flag personal attacks."

Sentiment analysis showed 70% negative sentiment in open-ended responses, with only 10% positive (e.g., appreciating humor in debates). Likert-scale data confirmed that younger users (18–25) reported higher frustration (mean = 4.5, SD = 0.7) than older users (26–40, mean = 4.0, SD = 0.9).

5 Discussion

The 65% fallacy prevalence underscores the pervasiveness of fallacious discourse on social media (23; 1). Ad hominem attacks dominate due to anonymity, which emboldens users to prioritize insults over arguments (14). Strawman fallacies, prevalent in 25% of posts, reflect oversimplification driven by platform constraints like Twitter's character limits (22). Equivocation and false dichotomies fuel misinformation by exploiting ambiguous or polarized framing, aligning with findings on fake news susceptibility (9; 17). The higher fallacy rate in high-engagement posts suggests that viral content amplifies rhetorical errors, possibly due to emotional appeal Informality, evident in slang and emojis, reduces argumentative rigor, creating fer- tile ground for miscommunication (10; 8). Anonymity fosters uninhibited attacks, with anonymous users twice as likely to use ad hominem rhetoric (14; 5). Rapid communication limits reflection, as users prioritize speed over accuracy (3; 4). Hashtags exacerbate fallacies by framing debates emotionally, while multilingual posts increase equivocation due to cultural and linguistic mismatches User frustration and low fallacy awareness highlight a digital literacy gap Limitations The study's focus

on English-language posts limits generalizability to non-English plat- forms, where cultural and linguistic norms may differ

6 Conclusion:

Linguistic fallacies, including ad hominem, strawman, equivocation, and false dichotomy, are pervasive on social media, with 65% of analyzed posts exhibiting such errors. To address these challenges, we propose three interventions. First, digital literacy programs should be integrated into school curricula and community workshops, focusing on practical exercises to identify fallacies (e.g., analyzing real social media posts to spot ad hominem attacks) (22). Second, platforms should implement algorithms to flag fallacious content, such as machine learning models trained to detect personal insults or oversimplified dichotomies, alongside user prompts to encourage reflective posting (e.g., "Does your response address the argument?")

Future research should explore non-English platforms to understand cultural variations in fallacious discourse, examine apolitical contexts to assess generalizability, and conduct longitudinal studies to track the long-term impacts of fallacies on public trust and polarization

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