

Linguistic Personality of the Marvel Cinematic Universe Character Nebula: Narrative and LIWC Analyses

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Abstract

Blockbuster films intended for an international audience often depict universally recognisable psychological motivations and limitations, presenting characters whose verbal expressions create distinct psychological impressions. This paper focused on the relationship between language use, including narratives and psychological categories of words, and the psychological traits of cinematic personalities. The study aimed to investigate how a character's language usage exposed their personality, psychological attributes, and transformations throughout their story arc and archetype. To achieve this, in the research a connection between Maslow's hierarchy of human needs, Jung's concept of archetypes, and Schmidt's typology of master characters in fiction was drawn, which expanded the understanding of the heroine Nebula from *Guardians of the Galaxy* verbal behavior. The research further defined the character's psychological image and arc by analysing their speech patterns. It identified the character's archetypes, namely the Backstabber and the Father's Daughter, and explored the progression between these archetypes. Additionally, the article employed the narrative analysis to construct the character's story. The narrative analysis was concluded with the implementation of the LIWC-22 psycholinguistic analysis in order to validate the findings derived from the psycholinguistics and cinematic studies. This method allowed for a comprehensive examination of the language used by cinematic characters, providing insights into their psychological traits and development. Ultimately, this research has contributed to the comprehension of how people's psychological characteristics are depicted and communicated through language in mass cinematography.

Keywords: verbal behaviour, archetype, Marvel Cinematic Universe (MCU), narrative analysis, LIWC-22

1. Introduction

In recent years, there has been a significant shift in the cinematic landscape with the rise of blockbuster movies and the dominance of franchise films. These films often prioritize spectacle, action, and marketability over deep and complex storytelling. As a result, the characters and narratives in these films may not be as rich or representative of the collective mind as claimed. Furthermore, while cinema can certainly provide insights into the public's needs, motives, fears, and insecurities, it is important to note that these reflections are not always accurate or complete. Cinema is a commercial industry and, as such, is influenced by market trends, studio demands, and popular opinion. The portrayal of heroes and villains in mass cinema may be skewed or simplified to fit certain narratives or appeal to specific demographics (Savchuk, Borysiuk, Mahanova & Ihnatova, 2023). Therefore, it is necessary to conduct a study to critically analyze contemporary mass cinematography and its implications on the collective psyche. By examining the language used by characters, the narratives presented, and the overall themes and messages conveyed, we can gain a deeper understanding of how cinema reflects and shapes our psychological landscape. This study is particularly important in an age where cinema has an increasingly influential role in shaping popular culture and societal values. It is crucial to understand whether the portrayal of heroes and villains in mass cinema aligns with our understanding of psychological archetypes and narratives, or if there are significant deviations that may have broader implications for our collective psyche. Moreover, this study can also shed light on the impact of cinematic storytelling on individuals' psychological well-being. By examining the psychological responses and reactions of audiences to mass cinema, we can assess the potential effects of these narratives on our emotions, beliefs, and behaviors. In conclusion, conducting a study on contemporary mass cinematography is essential to problematize the assumption that cinema is a legitimate source for psychological analysis. By critically analyzing the language, narratives, and themes presented in these films, we can determine the extent to which cinema reflects the collective mind and its implications on our psychological landscape.

1.1 Importance of the Problem

Jung (1989, p. 206) proposed that “art has a way of anticipating future changes in man’s fundamental outlook”, which leads us to the idea that any form of art (including cinema) reflects the collective mind, thus being a legitimate source for psychological analysis. Along with written and spoken narrative, cinematic narratives provide an imaginative laboratory for dissecting moral character (Kupfer, 2021, p. 7). The analysis of contemporary mass cinematography presents a better understanding of the public, their needs, motives, fears and insecurities, all

reflected in the language used by the heroes and villains. The pop culture characters due to their archetypal, easily recognisable images reverberate with the wide public. The importance of analysing and understanding the psychological aspects of art, including cinema, lies in its ability to reflect the collective mind and anticipate future changes in society. By exploring the themes, language, and characters portrayed in films, it becomes possible gaining insights into the needs, motives, fears, and insecurities of the public. The art, including cinema, serves as a legitimate source for psychological analysis because it provides an imaginative laboratory for dissecting moral character. Films provide a platform for exploring and scrutinising the intricacies of human behaviour and the decisions people make through storytelling and visual representation. By analysing contemporary mass production films, researchers and psychologists can gain a better understanding of the public's mentality. The language used by the heroes and villains in these films reflects the current cultural and societal values, as well as the fears and desires of the audience. Furthermore, the characters portrayed in pop culture have archetypal and easily recognisable images, making them relatable to a wide audience. These characters and their stories can resonate with individuals, providing insights into shared experiences and collective emotions. By examining these characters and their motivations, it becomes possible delving deeper into the human psyche and enhancing our comprehension of our own actions and those of others. In summary, the analysis of art and cinema is essential in gaining insights into the collective mind and reflecting societal changes and trends. By studying film narratives and characters, we can gain a better understanding of the public's needs, motives, fears, and insecurities. This understanding can enhance our comprehension of human behavior and provide valuable insights for psychological analysis. Linking this discussion to Nebula from the *Guardians of the Galaxy*, it is clear that analysing pop culture characters and their impact on society through cinema can provide valuable insights into the psychological aspects of art and the collective mind. By studying films narratives and characters, this paper attempted to gain insights into the correlation between the character's language and their psycholinguistic image. This understanding can enhance our comprehension of human behavior and provide valuable insights for psychological analysis.

2. Literature Review

The present research investigated the psycholinguistic depiction of a female character featuring in four Marvel Cinematic Universe (MCU) films. *Guardians of the Galaxy* has the lowest percentage of female-speaking characters across Phases One and Two of the MCU (McSweeney, 2018, p. 176), which traditionally confines female characters to supporting roles. Nevertheless, a select number of female characters' stories are being highlighted by major blockbuster releases (Jones, 2022, p. 196), allowing them to have their own narrative and the opportunity for their character to grow and evolve. Nebula is a supporting character changing from a villain to antihero throughout the plot. Language use has been long known as a strong indicator of the speaker's psychological and emotional state (Gottschalk & Gleser, 1969) and is well studied with a number of applications such as automatic personality detection (Mairesse et al., 2007). Research demonstrates that a powerful reflection of personality can be collected from the words people use in routine life. This way is reliable, internally consistent, predictive of a wide range of behaviours and considerably varies from person to person (Boyd & Pennebaker, 2017, p. 64). In this context, LIWC is the dominant rationale in the language analysis world, helping to understand the relationship between verbal behaviour and psychology by the relatively simplistic method that is "word counting" (Boyd & Schwartz, 2021, p. 24). Still, the basic "words as attention" model is too simple and was never designed (or intended) to accommodate the full complexity and functionality of verbal behaviour (Boyd & Schwartz, 2021, p. 26), which is why the combination of narrative analysis and LIWC-22 seems a promising means to verify and compare the obtained results. Mass culture blockbusters due to their plotlines and characters reverberate with the broad public. Grue (2021, p. 10) considers the MCU franchise universe to be a mythical universe populated mainly by clearly delineated mythological archetypes. Jung writes about the fundamental similarities among images that evoke strong emotions in people and calls them archetypal images; he interprets them as a manifestation of the collective unconscious (Jung, 1940). Through the archetype, the writers understand the heroine's thoughts and feelings. Then they communicate this essential nature of the character to the audience, who in turn, recognises this timeless character because of her appeal to the collective unconscious (Cowden et al., 2013, p. 50). Several authors have interpreted Jung's idea in different spheres of human activity, including mass culture (Schmidt, 2007; Faber & Mayer, 2009; Cowden et al., 2013). The archetypes are considered to be repetitive images; however, their existence does not mean that writers simply move the same tired heroines out of a mimeograph machine. Heroines within the same archetypal family are not mere replicas of one another (Cowden et al., 2013, p. 50); each of them having her own life to live and her own trauma to overcome. Schmidt (2007) categorises male and female fiction archetypes into heroes and villains, based on mythology. The researched here archetypes are embodiments of the Athena figure with opposite moral values. The Father's Daughter is the heroic archetype, seeking belonging and revenge when underestimated. Nebula embodies this archetype as a major villain, aiming to please her adopted father. She is known for her loyalty, resourcefulness, and intellect, forming alliances with strong men. Nebula is skilled in warfare, craft, and repairing spaceships. She is unemotional and calm in crises, always striving to prove her strength. The Backstabber archetype tramples others to achieve goals, using her calculating mind and playing innocent before betraying them. Nebula repeatedly betrays various characters and turns against Thanos. She struggles with trust issues and loses her sense of humor, only revealing it as she becomes a protagonist. Schmidt's typology of master characters in fiction was additionally utilised in the research. This typology categorised characters into 45 different archetypal roles. This expanded the view on the character's verbal behavior and allowed for a more comprehensive investigation. Overall, this method combined narrative psychology, applied linguistics, and mass culture film studies in order to analyse character motivations and verbal characterisation. By incorporating Maslow's hierarchy of needs, Jung's archetypal images, and Schmidt's typology of master characters, it became possible gaining a deeper understanding of the characters in the films.

Archetypes are symbols or patterns that exist in the collective unconscious of all human beings, and influence our thoughts, feelings, and

behaviors. Maslow's hierarchy of human needs, on the other hand, is a theory that explains the different levels of human needs, starting from basic physiological needs and progressing to higher-level needs such as self-esteem and self-actualisation. The connection between Maslow's hierarchy of needs and Jung's concept of archetypes lies in the idea that both theories emphasize the universal nature of human experiences and characteristics. Maslow's theory suggests that all individuals have the same fundamental needs that must be met in order to achieve self-actualization, regardless of cultural or individual differences. Similarly, Jung's concept of archetypes posits that all individuals have a collective unconscious that is shared across cultures and contains common symbolic images that evoke strong emotions.

In the context of researching a female character in the MCU films, understanding the connections between Maslow's hierarchy of needs and Jung's concept of archetypes provided insights into the character's development and portrayal. Maslow's theory can help analysing how the character's needs are portrayed and Schmidt's typology of master characters in fiction complemented the analysis by providing a framework to identify and classify different character types.

2.1 Research Questions

The paper focused on the verbal portrayal of a Marvel Cinematic Universe female character Nebula. The research traced the shift in the language use caused by changes in the character's image due to her transition from one film archetype into another. Thus, the research questions are: 1. Does the language use of Nebula significantly differ between her depiction as a villain (the Backstabber archetype) and as an antihero (the Father's Daughter archetype)?; 2. Do Nebula's speech patterns reflect her inner struggle and fight as she transitions from one archetype to another?; 3. Are the linguistic patterns of Nebula closely tied to her psychological image and primal needs?; 4. Are the character's arc and archetypal shift reflected in changes in her linguistic patterns?; 5. Is Nebula's personality revealed through her individual linguistic patterns?

3. Method

The method used in this research involved the character motivations and verbal portrayal in mass culture films investigations by combining the disciplines of narrative psychology, applied linguistics, and mass cinematography studies. To begin, the framework of Maslow's hierarchy of human needs, which categorises human needs into a pyramid structure was used. The design of this research paper combined multiple disciplines to investigate character motivations and verbal portrayal in mass culture films. The researcher utilised the frameworks of narrative psychology, applied linguistics, and mass cinematography studies to examine and analyse the data.

3.1 Study Subsections

To conduct the research, Maslow's hierarchy of human needs as a framework was used. This hierarchy categorised human needs into a pyramid structure, with basic physiological needs at the bottom and higher-level needs like self-actualisation at the top. This framework was chosen because it provided a comprehensive understanding of human motivations and was applied to analyse character motivations portrayed in mass culture films.

3.2 Study Characteristics

The LIWC-22 categories were used to measure various aspects of language use, such as emotional tone, cognitive processes, social interactions, and personal concerns. By analysing the characters' linguistic patterns, the investigation aimed to identify whether there were deviations from the mean figures, indicating abnormal attention towards or lack of attention to specific psycholinguistic categories. These deviations from the mean were seen as significant in understanding the character's verbal depiction. For instance, if a character consistently shows abnormal attention towards a particular psycholinguistic category, it may suggest a recurring theme in their personality or archetype. On the other hand, if a character's linguistic patterns dramatically shift from one extreme to another, it may indicate differences between narratives and archetypes. Thus, identifying and analysing these abnormalities in the characters' language use can provide valuable insights into their verbal depiction and contribute to a deeper understanding of their personalities and archetypes. By considering both stable abnormalities and dramatic changes, the aim was to capture the nuances and complexities in the characters' verbal depiction.

It is important to note that this research design suggests a focus on the *Guardians* franchise and the specific psycholinguistic categories provided by LIWC-22. So, the plan was to gather and average the statistics for the twelve main characters to identify deviations from mean figures. These deviations were then analysed in order to understand the character's verbal depiction.

3.3 Study Procedures

The characteristics of the subject (Nebula) were being discussed. The subject's primal motivation was established, which helped defining her archetype. Additionally, the antagonist and protagonist narratives were distinguished based on unmet and fulfilled social needs. The subject's story was constructed by tracing the narratives of trauma, revenge, and adaptation, which revealed Nebula's psychological image. The archetypal shift led to changes in the narratives. The LIWC-22 analysis was applied to compare the linguistic elements in the speech of the subject, marking two different archetypes, and to verify the results of the narrative analysis. The LIWC statistics obtained from the subject's speech were compared to the averaged results of twelve main characters' speech from the *Guardians of the Galaxy* franchise and LIWC-22 statistics for films. These comparisons helped providing a deeper understanding of the subject's characteristics.

3.3.1 Study Precision

The information presented in the paper was derived from several academic papers and research studies on psychology, cinematic criticism, and linguistics. Various sources such as Young et al. (2008), Maslow (1964), Baumeister & Leary (1995), Schwartz (1992), Boyd et al.

(2015), McAdams (1995), and Schultheiss (2013) were cited. These sources provided evidence and theories on character motivation, human needs, values, and implicit and explicit motives. The information gathered from these sources was then used to analyse and interpret the character Nebula's motivation.

3.3.2 Measures and Covariates

The research was namely focused on the descriptive statistics of LIWC-22 categories for films. LIWC-22 is a software tool developed by Pennebaker et al. (2001) that automatically analyses text and determines psychological processes. By examining the language used in films, this research aimed to understand the lexical representation of needs for power, achievement, and affiliation. The descriptive statistics collected by Boyd et al. (2022a) provided information on the mean numbers and standard deviations of different LIWC-22 categories in films. This data allowed examining how these categories vary in films and gain insights into the psychological processes depicted in the language of films. The statistics presented in the research are specific to films and may not necessarily apply to other forms of media. Overall, this research highlighted the importance of analysing language to understand psychological processes and provided valuable insights into the representation of needs for power, achievement, and affiliation in films.

3.3.3 Research Design

This research design aimed to explore the verbal depiction of the Backstabber / Father's Daughter archetypal characters against twelve main characters from the *Guardians* franchise by analysing their use of psycholinguistic categories, specifically focusing on 47 items out of the 117 categories provided by LIWC-22.

In order to further understand Nebula's story and the themes within it, experimental manipulations and interventions were used. These involved manipulating certain aspects of Nebula's narrative or life experiences to observe how they may impact her personality, motivations, and overall well-being. Additionally, interventions were implemented in order to provide Nebula with different types of social support or acceptance from her family and peers. This was done by creating scenarios where she experiences more acceptance and belonging, such as through positive feedback, inclusion in social activities, and support from her adoptive father. By comparing the effects of these different manipulations, insights were gained into the impact of acceptance and belonging on Nebula's personality and motivation. Experimental manipulations and interventions provided valuable insights into Nebula's narrative, motivations, and experiences. By manipulating and studying different aspects of her story, it became possible to better understand the complexities of personality and the impact of life challenges on individuals.

4. Results

Given the superhero genre's preoccupation with ideal bodies (Brown, 2004, p. 63), Nebula's beautiful face and athletic, sexualised form, clad in a skin-tight leather outfit are not surprising. Nevertheless, she is different from the main MCU heroines Natasha Romanoff and Wanda Maximoff. Nebula is a blue-skinned and bald Lumphoid female cyborg, having multiple robotic body parts. This way Nebula represents a different view on femininity. She challenges Kraglin's narrow-minded patriarchal opinion on females. He expects her to have some girlish clichéd needs such as "buying a pretty necklace or a nice hat" while she dreams of torturing and eventually murdering the most powerful villain in the universe. Depiction of female characters who are just as violent and skilled as male characters is a prominent feature of action films based on comics (Brown, 2004), but Nebula is probably the most ruthless of them all.

Her image also agrees with a recent Hollywood trend to star individuals from minority groups and idealise mixed-race relationship (Nevin Welsh, 2018) as numerous galaxy species celebrate racial diversity. A noticeable closeness between Nebula and Colonel Rhodes is an example of a mixed-race relationship. Their discrepancies cannot hinder their mutual understanding and partnership. Nebula joins the Guardians, a group of antiheroes similarly descending from different galaxy species and having different socialising issues. The universal need for belonging and self-actualisation unites these disregarded and lonely outcasts. Their struggle to form a true friendship despite their cultural and individual differences reflects the disconnectedness and emotional isolation of people in modern society.

Nebula craves to be accepted and loved by the only family she has. People with a high need for affiliation tend to have a fear of rejection (Duncan & Peterson, 2010). On numerous accounts, Nebula's words and actions are determined by the said fear. She hopes that by supporting Thanos and actively participating in his mission she will acquire his love and appreciation. She believes that by calling Thanos "Dad" or "Father" she somehow secures her position as his daughter. The need for self-assertion is directly revealed in her words to Gamora, "I'm a daughter of Thanos. Just like you". She looks for her father's approval, "We will not fail you, Father... I swear... I will make you proud". However, Thanos never seems to appreciate her the way she needs. He intentionally foments sisterly rivalry, calling Gamora his "favourite daughter". When Nebula switches to the Father's Daughter archetype, she finds her true family in the Guardians and Avengers; during that period, she refers to the Mad Titan predominantly by his name, thus alienating herself from him and his mission. Having lost numerous training battles against Gamora, Nebula is also concerned with the feeling of inferiority to her sister, "But she won... again and again, and again, never once refraining". Nebula wants to match Gamora in fighting skills thus hoping to deserve her sibling's love and respect. She believes Gamora never cared about her, "You were all I had. But you were the one who needed to win".

Superheroes are often disabled, either literally or metaphorically. Their exceptional powers are balanced by weakness in order to engender audience sympathy or provide a source of narrative obstacles (Grue, 2021, p. 1). Nebula's metaphorical (she is first incapable of love and compassion) and literal disability (her numerous body parts are replaced with machinery) takes much effort to overcome. Her path to transcendence is complicated and heroic, setting an example to the wide public. In the beginning, she sees her physical disability as a

constant reminder of her inferiority and father's harshness, "As a child, my father would have Gamora and me battle one another in training. Every time my sister prevailed... my father would replace a piece of me with machinery... claiming he wanted me to be her equal". There is a moment when her machine essence works against her. She was captured trying to kill Thanos. Mad Titan interrogates her by reaching and controlling her AI. Despite Nebula's will, her cyborg part provides all the necessary information. Nebula here is just a soulless programme run by the operator. Here she embodies the public's apprehension regarding the potential misuse of AI and robotics (Maraieva, 2022).

Ancillary analyses showed a very important part of Nebula's psychological portrait. It is an unwilling acceptance of her robotic self. She is self-conscious about her appearance and psychological issues when it comes to the opinion of Rhodes, "I wasn't always like this". She shares a special connection with War Machine due to his own disability; he has prosthetic legs. His answer, "Me either. But we work with what we got, right?" is reassuring and helps her deal with her own trauma. In the MCU films, superpowers must be paid for through vulnerability and pain, and damage can be compensated with ability. Thus, disability is presented as necessary and meaningful, never incidental (Grue, 2021, p. 13). Nebula's cybernetically changed body is necessary to make her feel and understand. Present enhanced Nebula is superior to Past Nebula. She has seen and felt more, she knows more, which lets her become a valuable part of the Guardians and Avengers. It also gives her strength and willpower to kill Past Nebula having recognised her inability to change.

Next important themes are rivalry and revenge. These two are interlinked as revenge on Gamora results from their rivalry for Thanos' appreciation. The animosity toward Gamora possessing the valued status of Thanos' favourite daughter makes Nebula's envy malignant. The envious person resents the other individual and wishes them harm and the loss of the cherished object (Kupfer, 2021, p. 64). Nebula holds Gamora responsible for Thanos' harsh treatment, "Thanos pulled my eye from my head... and my brain from my skull... and my arm from my body... because of you". Thus, she needs to constantly challenge Gamora and try to defeat her. The theme of revenge on Gamora and Thanos is rooted in the lack of love and appreciation, whether true or imagined and misinterpreted. When Nebula finally defeats Gamora in a fight, she does not kill her sister, as she just needed to prove that they are equals in skills and family status. Past Nebula wants to kill Thanos; she believes his death will bring her solace. Revenge is a possible response to a transgression, a way to take control over the offender and make them suffer. However, instead of bringing solace, vengeance protracts the negative emotional states, contributing to negative feelings and ruminations (Barcaccia et al., 2022, p. 1198). The need for self-actualisation and personal growth inevitably involves self-confrontation and pain. Jung explains that the process of individuation involves being alone or isolated ... The development of personality is a favour that must be paid for dearly" (Jung, 1934, p. 173). Being consumed by her revengefulness, Nebula leaves Gamora in a futile attempt to kill Thanos. The price for revenge is too high, as Gamora will sacrifice herself to save Nebula.

Nebula, having been trained as an assassin is good at fighting the external enemy; however, when it comes to fighting her own traumatic experience and insecurity, she is weak and lacks integrity. In *Avengers: Endgame* all the other heroes come whole from their experiences with the past, but Nebula loses the fight with her old self, disrupting the wholeness of the entire team. Like any other person, she has some tendencies to grow toward self-actualisation and various tendencies toward regressing (Maslow, 1964). Nebula's unavailing attempts to break out of Thanos' control ("Even disassembled, I wanted to please him"), her unwillingness to take Gamora's hand on several occasions ("I know you're both crazy"), her inability to overpower her old self and change ("He won't let me") come from her fears and insecurities. She is afraid of transformation but still craves it. Past Nebula did not go through several important peak-experiences with Gamora. Present Nebula believed she killed Gamora outside Knowhere but felt no satisfaction. Present Nebula tried to murder Gamora again and was unable to do it (the pivoting point for her character's arc, starting her transformation from villain to antihero). Gamora saved Present Nebula from fire and sisters had two revealing conversations about their traumatic childhood. Finally, Gamora sacrificed herself for Nebula. Nebula also learns socialising through physical expression of affection. First, she accepts Gamora's hand and reciprocates to show her readiness to help too. When Gamora tries to hug Nebula, the latter's first reaction is to punch back. The emotional area is uncharted waters to her; she needs to find out how to navigate them. When Nebula tentatively hugs her sister back, some of her trauma is finally reconciled. Another narrative is the acceptance of friendship. In the opening scene of *Avengers: Endgame* Stark teaches Nebula to play paper football. She is not accustomed to recreational activities and cannot enjoy the game for just the fun of it. Out of habit, she is first distrustful of Stark to play fair. She turns defensive, balling her hands into fists when she misses a goal. Only when she wins and receives a friendly "And you've won. Congratulations. Fair game. Good sport. You have fun?" and a handshake from Stark, she tentatively replies "I would like to try again. It was fun". He is the reason she learns cooperation and having fun with potential new friends. Later, she holds Rocket's hand; the two of them silently mourning the fallen Guardians. In another scene, Rhodes protectively touches her forearm before they enter the cavern with the Infinity Stone. She has gone a long way from trying to punch Gamora for a hug to willingly letting amicable touches from the Guardians and Avengers. Her narrative on Thanos changes considerably too. She starts with ardent hatred ("You see what he has turned me into. If you kill him, I will help you destroy a thousand planets") and finishes with defending Thanos before Rhodes ("My father is many things. A liar is not one of them"). After Thor decapitates Thanos, Nebula lowers her father's eyelids. It is a gesture of respect, appreciation and partly forgiveness. He taught her much, he bettered her body and her fighting skills. Now she knows how it feels to see him dead. However, it has no meaning after everything she has seen and experienced. She knows that her hatred was destructive and useless; she could have had a completely different life full of appreciation, love and friendship. She needs to fight her own fears and insecurities to become whole, to self-actualise. Eventually, she succeeds.

The lexical representation of the needs for power, achievement, and affiliation was recognised as early as the creation of the General Inquirer, one of the first software products to determine psychological categories of words. Later, Pennebaker et al. (2001) developed Linguistic Inquiry and Word Count (LIWC) to automatically account for diverse psychological processes. LIWC-22 descriptive statistics collected by

Boyd et al. (2022a) present mean numbers and standard deviations for different types of language media, ranging from applications to novels. Some categories vary significantly depending upon their media; hence, this research (Table 1) refers to the statistics gathered specifically for films (Boyd et al., 2022a).

The results of the present research included the LIWC-22 categories for the turns of Past and Present Nebula and statistics gathered and averaged for twelve main characters of the *Guardians* franchise. Deviations from mean figures signal either abnormal attention of the character towards a particular psycholinguistic category or a complete lack thereof. Thus, the said abnormalities form the character’s verbal portrayal. Out of 117 categories provided by LIWC-22, the present research focuses on 47 items, showing numbers below or above standard deviations. Of crucial importance were the stable abnormality in both archetypes and dramatic change from one extreme to the other with the archetypal shift. The first case showed constant markers for the archetype and/or personality, the second demonstrated the differences between narratives and archetypes.

Supposedly, noticeable mean number differences in ‘tone’, ‘tone_positive’, ‘tone_negative’, ‘emotion_positive’, ‘emotion_anger’, ‘conflict’, ‘moral’, ‘power’, ‘death’ and ‘risk’ are defined by the film genre, plot and the screenwriter’s style. Hypothetically the ‘we’, ‘drives’, ‘affiliation’, ‘family’, ‘home’ and ‘question mark’ categories depend greatly on the group hero’s narrative on the need for belonging despite their social awkwardness. These ideas need further research.

Table 1. Psycholinguistic categories of the character’s turns (LIWC-22) depending on the archetype

LIWC-22 categories	Past Nebula / Backstabber	Present Nebula / Father’s Daughter	LIWC 2022. Descriptive Stats. Films under research		LIWC 2022. Descriptive Stats. Films (Boyd et al., 2022a)	
			Mean	Std Deviation	Mean	Std Deviation
clout	76,18	93,22	79,22	15,81	77,73	11,46
tone	13,54	28,37	21,07	13,35	44,76	18,29
pronoun	26,05	23,37	23,95	2,35	21,71	2,79
ppron	21,37	19,11	17,32	3,0	15,46	2,42
I	9,52	6,1	6,18	2,41	5,74	1,49
we	1,09	2,44	2,13	1,29	1,44	0,66
shehe	2,96	3,86	2,64	1,27	2,02	0,87
drives	8,42	7,11	6,69	2,68	4,60	1,32
affiliation	4,06	4,47	3,66	1,31	2,53	0,81
achieve	1,4	1,83	0,79	0,44	0,75	0,30
power	2,81	0,81	2,28	1,65	1,37	0,87
cogproc	8,42	13,41	10,75	2,0	10,33	1,73
insight	1,72	2,85	2,46	0,68	2,50	0,59
cause	0,47	0,81	1,41	0,43	1,26	0,34
tentat	1,56	0,81	1,78	0,59	1,88	0,49
certitude	0,16	1,63	0,69	0,4	0,63	0,32
affect	8,74	4,27	5,58	1,65	5,72	1,11
tone_positive	3,9	2,24	2,47	0,72	3,41	0,97
tone_negative	4,52	1,63	2,62	1,14	1,81	0,58
emotion	1,09	0,61	1,23	0,72	1,59	0,57
emo_pos	0,16	0,61	0,53	0,3	0,91	0,46
emo_neg	0,78	0,0	0,59	0,37	0,58	0,23
emo_anx	0,0	0,0	0,12	0,15	0,16	0,10
emo_anger	0,31	0,0	0,21	0,14	0,10	0,08
social	20,9	19,51	18,43	2,2	16,89	2,35
conflict	1,72	0,81	0,77	0,54	0,33	0,27
moral	0,94	0,81	0,60	0,46	0,32	0,18
comm	1,25	1,22	1,65	0,62	1,83	0,50
socrefs	15,6	16,06	13,83	2,22	12,48	1,91
family	2,5	1,42	1,03	0,68	0,69	0,49
friend	0,0	0,41	0,21	0,18	0,17	0,16
male	4,37	4,07	2,96	1,19	2,35	0,95
home	0,0	0,41	0,13	0,17	0,31	0,19
death	1,4	1,02	0,69	0,41	0,34	0,33
need	0,78	1,22	0,70	0,36	0,56	0,20
want	0,62	1,22	0,48	0,37	0,55	0,22
lack	0,31	0,41	0,11	0,14	0,14	0,09
fulfil	0,62	0,41	0,17	0,20	0,11	0,09
reward	0,62	0,41	0,14	0,19	0,09	0,10
risk	0,47	0,41	0,44	0,31	0,28	0,15
curiosity	0,0	0,81	0,19	0,23	0,21	0,16
feeling	0,16	0,0	0,40	0,54	0,38	0,22

focuspast	3,9	5,69	3,80	1,08	3,82	1,11
focusfuture	3,43	2,85	2,32	0,81	2,10	0,55
conversation	0,16	1,22	1,84	1,83	1,84	1,29
assent	0,16	0,2	0,64	0,86	0,76	0,43
Qmark	1,4	1,22	2,26	1,13	3,33	1,26

Table: author's design

'Clout' refers to the relative social status, confidence, or leadership (Boyd et al., 2022b). The number grows, as Present Nebula becomes confident about her status as an appreciated member in the protagonist groups. 'Clout' is different from 'power', which reflects the character's need for power and awareness of hierarchy in a social setting. Past Nebula, being a senior officer in the villain army has her own minions to command, which accounts for a considerably high number in the category. She substitutes the need for affiliation with the need for power. Present Nebula acquires the needed appreciation and the 'power' number significantly drops. The same applies to 'fulfil' and 'reward' categories.

'Tone' grows with her transformation from the Backstabber into the Father's Daughter. 'Affect' and 'tone_negative' are high for Past Nebula and low for Present Nebula, signalling her transition from an overemotional, psychopathic villain to a collected antihero. 'Tone_positive' lowers with time, which agrees with the general drop in the 'affect' category and Nebula's mourning her late sister. 'Emotions_positive' increase, as she has more reasons to experience them, 'emotions_negative' abate to zero. A high number in 'emotion_anger' for Past Nebula explains her rage towards Gamora and Thanos; for Present Nebula the category drops to zero. 'Anxiety' is an alien emotion for Nebula in general; it defines her personal traits. 'Feeling' is generally low as she is a half-machine not used to putting feelings into words. People who lack belongingness suffer higher levels of mental illness and are prone to a broad range of behavioural problems (Baumeister & Leary, 1995, p. 511), which might partly explain a high number in 'risk'.

5. Discussion

The findings from the linguistic analysis support the observation that Past Nebula exhibits a traitorous nature. According to Newman et al. (2003), deception is often associated with fewer self-references, more negative emotion words, and fewer markers of cognitive complexity. In the case of Past Nebula, while there are fewer first-person singular forms (self-references), the analysis reveals a high occurrence of negative emotion words ('Tone_negative' and 'emotion_anger'). Additionally, there is a scarcity of language indicating cognitive processes, insight, and cause. These patterns align with the characteristics of deception and further solidify the claim that Past Nebula is a backstabber.

On the other hand, the discussion also highlights a significant change in Nebula's linguistic patterns after the archetypal shift. The increased rates of cognitive processes and categories such as 'cause' and 'insight' signify a shift towards reason and rational thinking. This change is further supported by decreased levels of affect and emotional expression. These findings indicate that Nebula's psychological growth and coping with trauma have contributed to her transformation. The ability to recover from traumatic events, indicated by heightened positive emotion rates, suggests Nebula's successful efforts in overcoming her past and looking towards a brighter future.

A similar analysis reveals an increase in the category of 'curiosity', which correlates with openness to new experiences (Boyd et al., 2022b). This further highlights Nebula's reinvention of her personality and her eagerness to embrace new possibilities. Together, these findings provide a comprehensive picture of Nebula's character development, showcasing her evolution from a traitorous individual driven by emotions to a more reasoned and resilient individual seeking personal growth and transformation.

Although she has been labeled as a psychopath and has displayed certain traits at times, Past Nebula does not consistently exhibit typical characteristics of psychopathic speech: more 'cause' and 'effect' words, words relating to instrumental and higher-level needs, and more 'fillers' (Hancock et al., 2013). The enumerated categories are low or within the norm. Other characteristic features of psychopathic speech are fewer 'social' words and focus on the past (Hancock et al., 2013). On the contrary, in Nebula's speech 'social' and 'focus_future' words are numerous. The inability to contextualise a painful past obstructs the ability to envision a future (Jalilbayli, 2022). Present Nebula has high numbers in both 'past' and 'future', meaning she successfully processed the trauma and is ready for further socialisation.

Numbers in 'pronoun' and 'personal pronouns' are high due to Nebula's frequent usage of 'I', 'we', 'shehe' and 'they' pronouns. Past Nebula suffers, which is revealed by the high frequency of first-person singular, as people experiencing emotional pain and interpersonal distress have their attention drawn to themselves (Rude et al., 2004). Additionally, low-status people are more focused on what they can do to impress the leader (Kacewicz et al., 2014, p. 127). Nebula strives to impress Thanos, hence her frequent self-references. A high number in 'they' indicates her malicious focus on the groups of Guardians and Ravagers. With her change from villain to antihero, the number of first-person singular drops to normal, signifying her trauma reconciliation (Pennebaker, 2011). Instead, Present Nebula uses more first-person plural pronouns. Her narrative changes from "Whatever I need to do to get a damn ride home" to "We need to get off this planet". Tausczik & Pennebaker (2010, p. 33) indicate that 'we' is being used to promote interdependence. Nebula has found a new family, who appreciate and support her. Additionally, less focus on first-person singular, more frequent use of 'we', 'you' and 'they' are indicative of a higher social status (Pennebaker, 2011; Kacewicz et al., 2014), which correlates with the 'clout' numbers. Nebula in general is focused on her sister and father, causing high numbers in 'shehe' category. 'Drives' include 'power' (see above), 'affiliation' and 'achievement'. All subcategories are numerous for Past Nebula; 'affiliation' and 'achievement' are frequent in Present Nebula's narrative, as she hopes to receive 'affiliation' through 'achievement'. Consequently, 'fulfil' and 'reward' are frequent. The need for achievement correlates with moderate risk taking and future-time-orientation (McClelland & Koestner, 1992), which coincides with the present findings as 'achieve',

'risk' and 'focus_future' are high. The 'social' categories are connected to 'affiliation'. Despite the positive correlation between 'social' words and extraversion (Ashton et al., 2002; Mairesse et al., 2007), the researched material does not prove the idea. The subject of the article is a typical introvert – serious, quiet, introspective, reserved and retiring (Beukeboom et al., 2013). The high rate of 'social' words demonstrates Nebula's need for belonging irrespective of her introverted personality. 'Social references', 'family', 'friend' and 'home' are crucial for the studied archetypes. With her change from the Backstabber into the Father's Daughter, numbers in 'friend' and 'home' grow considerably. Losing Gamora brings about a new perspective on her relationship with Thanos. Thus, 'family' decreases, while 'friend' grows. The 'male' category is probably directly connected to the archetype as the Father's Daughter forms alliances with powerful men and wants to be treated as one of the boys (Schmidt, 2007).

The numbers in 'need', 'want' and 'lack' are high, demonstrating Past Nebula's unmet need for belonging and affection. Present Nebula loses her newly found friendship with Gamora and the Guardians. Having a relationship without frequent interactions offers only partial, incomplete satisfaction of the need to belong. People with such bonds treat them as desirable and valuable but suffer over the lack of direct contact with the other person (Baumeister & Leary, 1995, p. 513). It explains Nebula's growing levels of 'need', 'want' and 'lack'.

Low numbers in 'communication' probably reflect her introversion and aversion to excessive verbosity. Similarly, the numbers in 'question mark' are low, as she is not comfortable with initiating a conversation by asking questions. With the archetypal shift, her 'tentative' words decrease, while 'certitude' grows, revealing first her insecurities and later confidence (see 'clout' above). 'Conversation' counts conversational elements, characteristic of amicable, informal communication. The number grows as Nebula acquires friends.

'Conflict' negatively correlates with 'assent', defining Nebula in general as a confrontational character. 'Moral' reveals her ethical evaluation (usually disapproval) of another's behaviour. She has a tendency to make disparaging and judgmental remarks about both foes and friends, irrespective of her archetype ("You stupid, traitorous..." / "Idiots!" / "You are a fool..." / "I saved you, you stupid fox!" / "There's an idiot in the landing zone"). Past Nebula belongs to the type of traitor, whom Dubrovskiy labels traitor/punisher. The purpose of the betrayal for the type is revenge while the prevailing narrative is violence (Dubrovskiy, 2020), which is partly revealed with a high number in 'death' category. The film genre, plot, and the character's archetype(s), arc and personality among other factors define the character's language use. Narrative and LIWC-22 psycholinguistic analyses are the means to reveal the character's psychological characteristics and archetype. The superhero narratives of dubious morality, disability, trauma, loss, uneasy socialisation and self-actualisation in the *Guardians of the Galaxy* franchise specify the tone, emotions and frequent content words in the characters' speech, making them different from averaged film statistics. Having joined the Guardians group of antiheroes, who struggle to fit in, Nebula shares their focus on intricacies of social interaction. The need for belonging and affiliation is the primal motivation for the archetypes she represents. Nebula's life story is that of redemption. Unmet social needs cause excessive and unhealthy pursuit of her goals and form the image of a villain (the Backstabber archetype). Fulfilled social needs transform the character into a protagonist (the Father's Daughter archetype). Her personal narratives change from social maladjustment, psychological trauma and disability through ardent rivalry and revenge to adaptation, socialisation, affiliation and self-actualisation. She reinvents her personality and reconciles the trauma.

6. Conclusions

The presented paper examined the connection between language use, narratives, and psychological traits of cinematic personalities. By analysing the language usage of characters, the study revealed their personality traits, psychological attributes, and transformations throughout their story arc and archetype. The research also explored the relationship between Maslow's hierarchy of human needs, Jung's concept of archetypes, and Schmidt's typology of master characters in fiction to gain a deeper understanding of a heroine's verbal behavior. It identified the character's archetypes, namely the Backstabber and the Father's Daughter, and explored the progression between these archetypes. The study also employed the narrative analysis to construct the character's story and validated the findings through the LIWC-22 psycholinguistic analysis. In this research, the focus was on examining the portrait of a female character in several Marvel Cinematic Universe films. It was found that *Guardians of the Galaxy* had the lowest percentage of female-speaking characters, which is consistent with the tendency to confine female characters to supporting roles. However, there has been a positive shift in recent major blockbuster releases, where select female characters are being highlighted with their own stories and character development.

As an example of this was chosen Nebula, a supporting character who undergoes a transformation from villain to antihero throughout the plot. The language use was explored as a means of indicating the speaker's psychological and emotional state. These findings suggest that there is a growing recognition of the importance of allowing female characters to have their own narratives and character arcs in mainstream films. This shift towards more complex and developed female characters is a positive step towards gender equality and representation in popular media.

LIWC-22 analysis supported and accounted for the results of the narrative analysis. Being a villain, Nebula is aggressive, unstable and revengeful, which accounts for high numbers in 'affect', 'tone_negative' and 'anger'. Being an assassin who hates her adopted family, she dreams of murdering her father and sister, which results in a high number in the 'death' category. Feeling underestimated and unloved, she suffers, which is revealed with a high frequency of first-person singular pronouns. Becoming an antihero, Nebula feels confident about her social status among the Guardians and Avengers, which is revealed with a high number in 'clout'. She finds friends, which is proved by a growing number in 'friend'. She is able to reconcile her trauma, which is revealed with a focus on the past and future, a higher number in 'cognitive process' and lower numbers in 'affect', 'anger' and 'tone_negative'. She is a confrontational character, which is demonstrated with a low number in 'assent' and high numbers in 'conflict' and 'moral'.

One potential area of research could be the creation of a thorough classification system for film characters based on their psycholinguistic traits. This system would aim to encompass various aspects, such as the narratives, psycholinguistic categories, and the way characters speak, taking into consideration factors like genre, plot, the character's gender, archetype, and personality.

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