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## Character as a Web of Words:

Towards a Network Theory of Narrative\* \*\* \*\*\*

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## I. Introduction

Over the past 20 years, the application of network analysis to the study of literary characters has emerged as a new interdisciplinary approach, blending computational techniques with literary criticism. This methodology quantifies and visualizes the interactions between characters in literary texts, offering a systematic framework to understand the underlying social dynamics within fictional narratives. Franco Moretti's work stands out as one of the most influential studies on the network analysis of character relationships in literature. He has launched a quantitative analysis of plot by manually drawing interrelationships between characters in his essay, "Network Theory, Plot Analysis" (2011).<sup>1)</sup> Though it may lack mathematical

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<sup>\*\*</sup> ChatGPT, a generative AI platform, is partially used to proofread and enhance the English sentences in this paper.

<sup>\*\*\*</sup> All relevant files for this research paper are available in the GitHub repository at github.com/vadoro/salome.

<sup>1)</sup> A couple of research papers preceding Moretti's have made significant contributions by

and statistical sophistication, it remains a ground-breaking work with many provocative ideas about literary networks.<sup>2)</sup> Numerous subsequent studies have followed, advancing the methodology with more sophisticated approaches and techniques.<sup>3)</sup>

But a core theoretical presupposition persists. They all assume that a character is the minimum unit of analysis, focusing on social relationships between characters. This presumption significantly constrains the depth of analysis by overlooking the complex and multi-dimensional aspects of characters that transcend mere social interactions. It is partly because the network approach to literature is heavily influenced by social network analysis, but more importantly, because it is trapped within the non-literary paradigm of network in the social and natural sciences. It is the poverty of literary theory that hampers its ability to grasp the unique characteristics of literature. To enrich the network analysis of literature, I propose that we turn our attention to the long disregarded structuralist narratology while embracing the insights of network science. Seymour Chatman's narrative theory, among others, provides crucial inspiration for networked understanding of character.

This paper explores the possibilities of network narrative theory by

applying network analysis to literary texts from a scientific perspective. However, they may not have had as much impact on literary scholarship, likely because Moretti's work offered richer implications for critical studies of literature (Stiller, Nettle, and Dunbar 2003; Elson, Dames, and McKeown 2010).

<sup>2)</sup> For example, Moretti reconceives the protagonist in terms of the relative position of a node in the network of characters, not "consciousness' and 'interiority" as conventional literary criticism usually understands (4-5); suggests style as "a function of plot" by paying attention to "different uses of language emerging in different network regions" (7); and finds "the opposite foundations of novel-writing East and West" in a "different role for the protagonist, resulting from a different set of narrative relations" (10).

<sup>3)</sup> See Agarwal, Corvalan, Jensen, and Rambow (2012); Park, Kim, and Cho (2013); Moretti (2013); Selisker (2015); Lee and Lee (2017); Piper, Algee-Hewitt, Sinha, Ruths, and Vala (2017); Won (2023); and Kim (2023). For a comprehensive literature review, see Labatut and Bost (2019).

presenting character as a web of words. It is an attempt to combine a digital humanities approach, which has yet to mature in literary studies, with structuralist narratology, which has been overlooked for some time. It is a convergence of new methods and old theories. By restoring Chatman's character theory, network analysis, I argue, can illuminate the complexities of literary characters and their relationships in a much more profound way than the previous studies. Narrative theory turns out to be a rich source of inspiration for digital literary studies. My paper concludes by suggesting that networked understanding of character as a web of words can contribute to creating "a unified theory of plot and style," which will be "a breakthrough" in literary studies according to Moretti ("Network" 7). Oscar Wilde's play, Salomé (1894) is chosen as an exemplary literary text to illustrate network analysis of characters and their interactions. Any narrative work will be a good candidate for this purpose. Drama, however, is better suited because it consists mostly of dialogue and thus has far fewer variables to consider than a novel. Analysis of non-dramatic narratives will be done in the subsequent studies.

# II. Network Theory of Character

Seymour Chatman's narrative theory is worth serious consideration in that it provides essential ideas for constructing a network theory of character. In his *Story and Discourse: Narrative Structure in Fiction and Film* (1978), Chatman defines character as "a paradigm of traits," trait being "relatively stable or abiding personal quality" (126). Character is a collection of personal qualities that a literary character has or acquires in a narrative. Character, in other words, is not so much a singular, monolithic minimum unit, as most of network analysis of character has presupposed so far, rather

a complex vessel that holds various, even heterogeneous elements. Character is a paradigm because, Chatman argues, it is "the set of traits [ $\cdots$ ] as a vertical assemblage intersecting the syntagmatic chain of events that comprise the plot" (127). A character's traits are recognized and accumulated "vertically" as a story unfolds "syntagmatically." Figure 1 illustrates very well this paradigmatic relationship to the temporal plot. Each trait is picked up from the flow of a story as a series of events proceeds horizontally along the plot line. Character is a composite of these traits ( $C = T^n$ ).

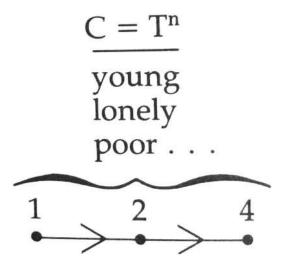


Figure 1. Character as a paradigm of traits in relation to the plot. C: the character,  $T^n$ : traits (Chatman 130)

What is a trait, then? As Figure 1 implies, traits are predicates in a sentence. The subject of a sentence is the location of a character whereas predicates are traits that constitute the character. Chatman takes the proper name for the "ultimate residence of personality, […] a locus of qualities." He calls it "the narrative-noun." Predicates, or what might be termed "narrative-adjectives," encompass traits such as "young," "lonely," "poor" and

so forth, as illustrated in Figure 1 (131).<sup>4)</sup> These traits are distilled "adjectives" that succinctly encapsulates all predicate components contributing to the depiction of a character's personal qualities. They emerge through numerous specific words such as nouns, verbs, adverbs, and other elements as well as adjectives within a predicate structure. In essence, a trait is a combination of words that articulate the distinctive attributes of a character.

Character is the set of traits; a trait is that of words. Network analysis of character should build on these propositions to go further than a simple analysis of interrelationships of literary characters. A character can be reconfigured as a global network of traits which consists of several local networks of words. Words do not stand alone. They are connected to others. This connection forms a network, which in turn develops into a complex network of predicates, traits, and even characters. A certain character's traits are revealed in the language of and about the character. Words in the character's speech, dialogue, inner thought, and the narrator's description of the character are all clues and building blocks for the overall picture of the character. Network analysis should draw this portrait by visualizing the web of words and the composite of traits.

Exploring the network of words related to characters can be approached in various ways. Characters' direct speech is the most obvious, yet essential part of the text that contains their traits. A play consists of mostly dialogue, the exchange of direct speeches. One may isolate and compile all the texts of direct speech by a certain character, and analyze the interrelationships of words to picture a networked portrait of the character. Non-dramatic fiction also has dialogue, but that is not all. It contains inner thoughts, observations, and associations, that is, what is going on in a character's mind. These interior monologues may be consistent with, or contradictory to what is

Predicates can be understood as what is called "property," "feature," "dimension," or "variable" in data science.

expressed in dialogue. Even this inconsistency may be the very essence of the character. Soliloquy plays the same role in dramatic narrative. One may differentiate interior monologues or soliloquies from dialogues, apply separate network analyses, and compare the results to get a better understanding of the character. The presence of a narrator in fiction further adds complexity to the narrative. Narrative voice, if it exists, usually permeates the entire text of a literary work, complicating the task of differentiating the narrator's language from the characters'. While challenging, conducting a network analysis of the narrative voice is achievable by isolating the distinctive language of the narrator which depends on the narrative devices of each literary work. The narrator's attitude to and description of characters, whether reliable or not, are key information to understand a character. To unveil a networked language of narrative voice will contribute to the network analysis of character.

A character does not remain isolated, but encounters others as a story evolves. They form relationships with each other, whether friendly, hostile, transient, persistent, or something in between. Their connections and interactions are decisive to the plot development, spurring narrative actions. To grasp these relationships is essential to network theory of narrative, especially character. Network analysis has simplified this relationship so far by assuming that each character is the minimum unit of social interaction. Defining character as "a paradigm of traits" reshapes our understanding of character interactions, offering a radically different picture of the encounter between characters. As one character meets another, their traits and words coincide and/or collide with each other. A character's words conjoin, miss, deflect, implicate, complicate, or crash those of other characters. By focusing on these tangled interrelationships of words, network analysis can capture the various aspects of the dynamic confluences between characters in a much more detailed way.

### III. Character as a Web of Words

I chose Oscar Wilde's play, *Salomé*, to prove the validity of network theory of character. Its dramatic power and beauty make it a good candidate for any literary criticism, but it also has a great illustrative value to show the essence of network analysis because it is almost entirely composed of dialogue between characters. The most important figure in the play is obviously its title character, Salomé. Her character traits will be revealed through her speech, and accumulated paradigmatically as the play progresses syntagmatically. Given that a trait comprises a set of predicates, her character exists within the interconnected web of words. A semantic network of her language will illustrate the topology of traits and the interactions of individual words, unveiling the overall composition of her character.

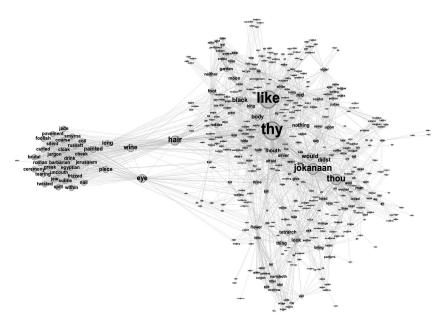


Figure 2. A co-occurrence network of Salomé's words; Nodes' size: degree; 421 nodes and 5,615 edges<sup>5</sup>)

Words	Degree	Closeness	Betweenness	Eigenvector
thy	280	0.571625	0.21171	0.795352
like	270	0.558546	0.23144	0.701705
jokanaan	158	0.529337	0.099181	0.478218
thou	154	0.48881	0.083277	0.370339
hair	128	0.479215	0.049953	1
eye	110	0.435467	0.044195	0.867328
wine	100	0.42004	0.023889	0.871498
black	100	0.456044	0.030666	0.286713
would	94	0.489387	0.037993	0.365744
painted	84	0.410485	0.012118	0.818837
didst	84	0.456546	0.025513	0.24276
body	82	0.466817	0.017747	0.276373
long	82	0.39225	0.009417	0.800039
piece	82	0.427835	0.016119	0.824776
mouth	76	0.471591	0.015345	0.277926
red	76	0.446237	0.020761	0.257018

Table 1. Word network analysis metrics of Salomé's speech

All utterances made by Salomé are compiled into a small corpus, from which meaningful words are extracted using natural language processing techniques.<sup>6)</sup> These words are transformed into an adjacency matrix on the assumption that the words in one sentence are interrelated with one another. The matrix turns into a network graph with the help of a network analysis and visualization software, Gephi.<sup>7)</sup> Figure 2 is a co-occurrence network of Salomé's words. Each word is depicted as a circular node, with words

<sup>5)</sup> The ForceAtlas2 algorithm is used to draw the network graphs in this paper. It is "a force directed layout" where "[n]odes repulse each other like charged particles, while edges attract their nodes, like springs" (2). For more technical details, see Jacomy et al.

<sup>6)</sup> The Natural Language Toolkit (NLTK) is utilized for text processing tasks within Python programming. Stop words including pronouns are excluded. For comprehensive details and guidance, refer to its official documentation available at the NLTK website: www.nltk.org.

Gephi is an open-source software for network analysis and visualization. It is available on the official Gephi website: gephi.org.

appearing in the same sentence linked together by lines or edges to illustrate their connections. Nodes' size depends on the degree, that is, the number of connections they have with others. The thickness of the edges connecting nodes correlates with the frequency of interactions between any given pair of nodes. Table 1 presents a ranked list of the sixteen most prominent words, organized according to their degree centrality and compared across four centrality measures.

The network graph (Figure 2) alongside various centrality measures (Table 1) elucidates the relative importance of individual nodes, their relationships with each other, and the overall landscape of interconnections. This serves as an effective model for depicting Salomé's character as an elaborate network of words. The most salient words in the graph are "thy" and "like." "Thy" (8) is connected mostly to the words of physical objects such as "mouth," "hair," "body," "foot," and "head," and the descriptive adjectives that modify the body parts, such as "black," "red," and "white." "Like" closely connected to "thy" decorates bodily objects with similes. Salomé is clearly obsessed with the corporeal sensuality of a human body. Her passion is directed toward another character, "Jokanaan" who is the "man" of "God." Another significant word, "thou" also compulsively refers to the prophet. Most words gravitate toward one node, "Jokanaan." He is the kernel of the network and the ultimate object of Salomé's desire. On the other hand, there is a distinctive and almost separate group of words on the left side of the graph.<sup>9)</sup> They all refer to the guests--"Roman," "Greek," "Egyptian," and "Jew"--at the banquet. Salomé's harsh judgmental words such as "foolish," "coarse," "brutal,"

<sup>8)</sup> Certain words and proper nouns have been capitalized for grammatical accuracy, despite their appearance in lowercase in the graphs.

<sup>9)</sup> Despite their infrequent occurrence, the words in this group are depicted with disproportionately large node sizes in the network graph, a result of Salomé using them in an unusually lengthy sentence. This overrepresentation should be taken into account during analysis, yet it does not alter the distinctive nature of this group of words.

"barbarian," and "uncouth" display her profound disdain for the trivialities of court life. She is the one who stands outside the secular world of Herod and aspires to pure sensuality. The distribution and constellation of words visually represent the composite portrait of Salomé's character.

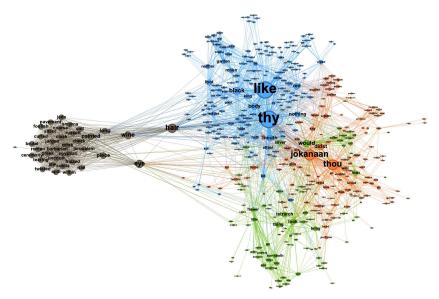


Figure 3. A co-occurrence network of Salomé's words; Nodes' size: degree; Nodes' color: modularity (4 classes)<sup>10)</sup>

Network analysis can visualize the character traits as a few clusters of nodes on the graph. Gephi can statistically measure what is called modularity and divide the whole graph into smaller groups by using a community detection algorithm.<sup>11)</sup> Figure 3 shows the four different clusters of Salomé's

<sup>10)</sup> Although the analysis resulted in six classes, it identified the two extremely small clusters containing only two or three words, each without any connection to others. I chose to disregard these two groups, considering them insignificant for the purpose of my study. The modularity analysis metrics with resolution 2.0 are as follows: Modularity: 0.542, Modularity with resolution: 1.369, Number of communities: 6.

words.<sup>12)</sup> The most outstanding one is the group of words orbiting around the two nodes of highest degree, "thy" and "like." This cluster represents Salomé's deep fascination with the sensual allure of a human body, richly described through similes. Another cluster of words with "Jokanaan" and "thou" reveals the ultimate object of her desire. What is particularly interesting about this group is that it is populated mostly with verbs such as "didst," "say," "speak," "see," "seen," "put," "give," "love," "loved," "know," "looked," "heard," etc. All these verbs suggest that Salomé actively engages with the body, seeking physical interaction with the object of her desire. The verb, "kiss" is the quintessential one that symbolizes her amorous action. The words, "kiss" and "kissed" belong to the first group because they, especially "kiss," are strongly associated with "thy" and "mouth." But the last two words are heavily connected to "Jokanaan" as well; "kiss," though it is a rather small node, is right at the center of the network of these three keywords. The "kiss" is the very contact point where the action verbs of the second group meet the bodily nouns of the first.

The third cluster of words at the lower part of the graph contain another important trait of Salomé. Though its size is relatively small with no dominant node, they collectively exhibit her indomitable will to fulfill her fatal drive. She is well aware that the "tetrarch," who constantly "look[s]" at her, is helplessly fascinated with her. By performing the "dance" of "seven" "veil[s]," Salomé wants to obtain the "thing," her object of desire. The word "silver," which belongs to the same group though located in between the first and second, implies what she ultimately wants to "get." Such nodes as "silver," "charger," "pleasure," "mine," "tetrarch," "ask," "command,"

<sup>11)</sup> Gephi uses the Louvain algorithm for calculating modularity.

<sup>12)</sup> The outcomes of modularity analysis may vary with each iteration, particularly for nodes positioned on the boundaries between communities, which may be assigned to different groups in subsequent analyses. This inherent ambiguity necessitates cautious consideration during interpretation to ensure accurate conclusions.

"soldier," "bring," and "get" are all connected to "head." It is Jokanaan's head in a "silver" "charger" that she stubbornly demands. She is even willing to utilize Herod's military might, as implied by the terms "soldier" and "command," indicating a readiness to use force to achieve her ends.<sup>13)</sup> The last cluster of nodes on the left side, as mentioned above, is a collection of words that express her disgust at the guests of Herod's banquet. It embodies a trait that contrasts with her obsession with corporeal sensuality. The topology of modularity classes as the sets of words illustrate effectively the overall composition of character traits.

## IV. Character Interactions as a Lexical Network

Myriad relationships formed between characters drive the dynamic progression of the plot. Character interactions transcend mere exchanges between monolithic entities; instead, they embody an interplay of multiple traits, or sets of words. Figure 4 statistically visualizes the fatal confrontation of the two major characters of the play, Salomé and Herod. This bipartite network shows the connections between two separate classes of nodes: one for characters' names and the other for their spoken words, unlike the monopartite graphs depicted in Figures 2 and 3, which exclusively feature the co-occurrences of a character's words. In Figure 4, characters' names are linked to their words whose nodes' size reflects their frequency in both characters' speeches. [14] Salomé and her words are on the left; Herod and his

<sup>13)</sup> The sentence that contains these two words is "Tetrarch, Tetrarch, command your soldiers that they bring me the head of Jokanaan."

<sup>14)</sup> This graph compiles all significant words from the dialogues of each character throughout the play, linking them to the respective speakers. Therefore, it includes the words not directly related to interactions with the other character. My approach is to understand the character relationships in terms of sets of traits rather than the direct

words, on the right. The words, and thus traits, mediate the interactions between the two characters. The words in the middle of the graph are the ones that both share in their speeches. The other words on the far left and right are the ones that they do not share.

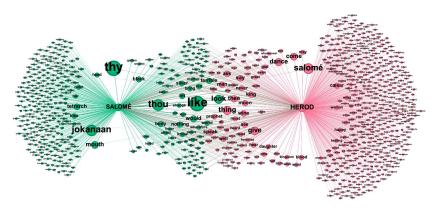


Figure 4. Two major characters' character-word network; Nodes' size: in-degree; Nodes' color: modularity (2 classes)<sup>15)</sup>

This network graph presents a comprehensive snapshot that captures the traits of the two principal characters. The significant words such as "thy," "thou," "like," "Jokanaan," "mouth," "kiss," and "tetrarch" on the left of the graph all indicate Salomé's traits, that is, her intense fascination with Jokanaan's body, her sensual longing for consummation with him, and her unwavering determination to have the desire fulfilled. The words on the right also reveal Herod's character traits. He is obsessed with "Salomé['s]" "dance," willing to sacrifice anything, as indicated by words like "give" and "thing." On the other hand, he suffers a profound sense of foreboding,

interactions between characters. It is certainly possible to focus exclusively on the direct dialogues between specific characters, if necessary.

<sup>15)</sup> The modularity analysis metrics with resolution 1.0 are as follows: Modularity: 0.303, Modularity with resolution: 0.303, Number of communities: 2.

implied through terms such as "wing," "omen," "beating," "wind," "blood," and "god." In addition to his personal obsessions and anxieties, he is conscious of his secular roles as a "king" and patriarch, indicated by references to "Caesar," "Rome," "wife," and "daughter." Herod is a much more multifaceted, "round" character than Salomé.

What is more important, however, is that the graph exhibits the dynamic and complex interplay of words and traits between the two main characters. The words in the middle are the ones that both utter in their speeches. They meet, negotiate, and sometimes clash with each other. The middle ground is the field on which the multi-layered aspects of relationships are crystallized as numerous bubbles of different sizes. The words that Salomé and Herod share are actually the battlegrounds where ideological warfare is waged. The network is divided into two groups: Salomé's words in green on the left and Herod's in red on the right. The borderline between the two is inevitably obscure. The words close to the borderline may belong to either side. This ambiguity is the key to understanding the striking contrast between the two characters. Herod's "look" has much to do with his fascination with and anxiety about Salomé. He looks at her incessantly while fearing the ominous signs of the moon, the corpse, and blood. Salomé regards Herod's lustful "look" with disdain, and longs to "look" at Jokanaan, all the while conscious of the enigmatic allure inherent in her own "look." Both characters feel "terrible" about Jokanaan, but Herod's "terrible" expresses his anxiety and fear while Salomé's describes Jokanaan's eyes which do not respond to her desirous look.<sup>16)</sup> The "prophet" stands as the object of desire for Salomé, yet embodies that of dread for Herod.

<sup>16)</sup> Herod is afraid that "some misfortune might happen to [him]" as he mentions Jokanaan's "terrible words." One of the ominous signs, "a huge black bird" is "terrible" to Herod: "The beat of its wings is terrible. The breath of the wind of its wings is terrible." On the other hand, Salomé feels that "It is his eyes above all that are terrible" (emphasis added).

This graph illuminates not only the shared connections between characters but also the unique aspects that they do not share, highlighting their differences. The nodes on the far left and right are almost exclusively connected to their respective characters. They are the words of her or his own. These terms unveil what remains largely opaque to the other. This obscure side of a character is much more populated with countless minor nodes. A character has a large vocabulary that does not coincide with the other's. It is a deep pool of the character's interiority and difference. Salomé's action is driven by her ultimate wish: to obtain "Jokanaan['s]" "head" and to "kiss" "thy" "mouth." Herod is haunted by the "omen" of "misfortune" and the unsettling "wind" of "beating" "wing[s]," metaphors that convey his deep-seated fears and premonitions of doom.

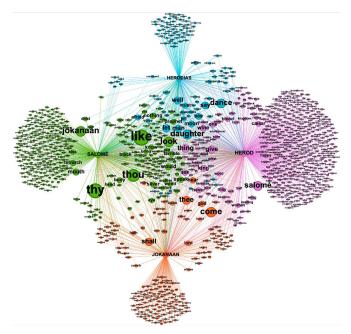


Figure 5. Four major characters' character-word network; Nodes' size: in-degree; Nodes' color: modularity (4 classes)<sup>17)</sup>

A character forms multiple relationships with many different characters. Figure 5 is the four major characters' network graph. Herodias's and Jokanaan's character-word relational data are added to Salomé's and Herod's. Herodias's nodes position themselves within the intermediate space between the two leading characters, intruding into this central area and thereby complicating the frontline. "Daughter" emerges as one of the prominent nodes right at the heart of the network where three characters' words collide intermingle with each other. Herodias strives to manage her "daughter['s]" action, be it Salomé's "dance" or the beheading of the "prophet." In so doing, she appears as a mediator who intervenes, negotiates, and sometimes takes sides in the middle of the conflict. On the other hand, Jokanaan's words mostly do not mix up with others, but rather stay aloof, fortifying their own isolated world. They signify the unearthly language of religion and prophecy: "god," "lord," "shall," and "come." Jokanaan is not the kind of character who engages in close relationships with others. He remains a distant figure throughout the play as the object of desire for Salomé, dread for Herod, and disgust for Herodias.

<sup>17)</sup> The modularity analysis metrics with resolution 1.0 are as follows: Modularity: 0.376, Modularity with resolution: 0.376, Number of communities: 4.

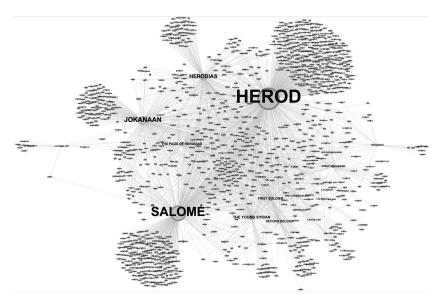


Figure 6. All characters' character-word network; Nodes' size: degree

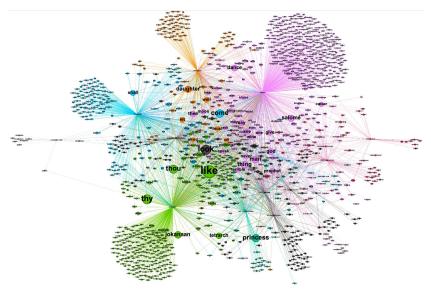


Figure 7. All characters' character-word network; Nodes' size: in-degree; Nodes' color: modularity (9 classes)<sup>18)</sup>

Figures 6 and 7 respectively provide a comprehensive visualization of the relationships between all characters and their spoken words in different ways. In Figure 6, the size of the nodes bearing a character's name directly correlates with the volume of words they speak throughout the narrative. Contrastingly, in Figure 7, the size of the nodes indicates the frequency of each word's occurrence, while the color of these nodes indicates the small clusters they belong to when divided into nine different classes. Figure 6 shows character relationships: the central antagonism between Herod and Salomé, the complex interactions between the four major characters, and the relative positions and interrelationships of the minor characters. All these connections are mediated by their common words. Figure 7 clearly displays which words do or do not mediate the relationships, whose words they are, and their relative significance and positions. The central area of the graph is the verbal battlefield where words intermingle and struggle with each other. What is intriguing about this graph is the emergence of the fifth group of nodes in dark brown which includes the words such as "look," "something," "dead," "happen," and "captain." They belong to the page of Herodias, the first soldier, and the second soldier. Minor characters have their words in the middle of the catastrophic conflicts between the main characters. They keenly notice that male characters "look" at Salomé, either fascinated or, in Jokanaan's case, repulsed by her "look," and anxiously feel that "something" "dead[ly]" will "happen," especially to the "captain," the young Syrian. They observe the struggles at a certain distance and foretell their consequences for a spectator or a reader.

<sup>18)</sup> The modularity analysis metrics with resolution 1.0 are as follows: Modularity: 0.390, Modularity with resolution: 0.390, Number of communities: 9.

## V. Towards a Network Theory of Narrative

My research underscores the necessity of integrating network analysis with structuralist narratology to enrich the study of literary characters. By challenging the established methodology that views characters merely as nodes in a social network, I advocate for a more nuanced approach that considers character as a network of words, a constellation of traits. Inspired by Seymour Chatman's narrative theory, especially his notion of character as "a paradigm of traits," this study illustrates how networked composition of words forms character traits, and how characters' interactions can be understood not just as simple social exchanges, but as (mis)encounters of the diverse words and traits that constitute their identities. This interdisciplinary approach broadens the analytical scope beyond mere social relationships, and enhances our understanding of the multifaceted nature of characters and their dynamics in literature. By merging digital humanities with structuralist narratology, it opens new possibilities for exploring the depth and complexity of literary narratives, promising a deeper appreciation of the unique characteristics of literature.

When he reads Horatio's language as "more impersonal, almost bureaucratic" than any other main characters in Shakespeare's *Hamlet*, Moretti touches on a very provocative idea that the study of "different uses of language emerging in different network regions" may lead to "a breakthrough" with which literary analysis can produce "a unified theory of plot and style." He goes on to say:

plot and style could provide a small-scale model to study two general properties of human societies: plot, to understand how the

<sup>19)</sup> Moretti uses this expression when he describes the characteristics of Horatio's network. But it immediately leads to Horatio's "style of the State (or at least, of its bureaucracy)" (7). The expression, "more impersonal, almost bureaucratic," then can be understood as a description of Horatio's language.

simple exchange between two individuals evolves into complex patterns made of thousands of interactions; and style, to study how human beings make sense of their actions. A model for the relationship between what we do, and how we think about it: this is what a plot-style continuum could provide. But we are definitely not there yet. (7)

The network analysis of characters and their relationships as webs of words, as illustrated in my research, may not be the ultimate solution to Moretti's problematic, but imply one possible way to theorize what he calls "plot-style continuum." Characters' words and complex interactions reveal the different styles of their language, and how they are mediated through lexical convergence and divergence.

Much more work has to be done. As Moretti says, "we are definitely not there yet." Novels, for instance, pose a huge challenge because the predominant role of the narrator in non-dramatic narratives greatly complicates the analysis. They have direct speeches by characters as drama does, but they also include indirect speeches, the narrator's descriptions and narrations, and various points of view. The narrative voice saturates the entire narrative almost thoroughly. Subsequent studies have to meet these challenges. Network analysis of literary narratives has to pay close attention to the subtle differences between direct and indirect speeches, as well as the narrative voice, and to their interrelationships. When it manages to do so, it will be able to create a more comprehensive network theory of narrative. My essay is a small step toward such a theory. It will be an interesting, and certainly challenging journey to reestablish the theory of narrative from the perspective of network science. It is a significant work that will refine the digital literary studies and revive the structuralist narrative theories.

### Works Cited

- Agarwal, Apoorv, Augusto Corvalan, Jacob Jensen, and Owen Rambow. "Social Network Analysis of *Alice in Wonderland.*" *Proceedings of the Workshop on Computational Linguistics for Literature*, Association for Computational Linguistics, 2012, pp. 88-96. aclanthology.org/W12-2513. 2024.02.16.
- Chatman, Seymour. Story and Discourse: Narrative Structure in Fiction and Film. Ithaca: Cornell UP, 1978.
- Elson, David K., Nicholas Dames, and Kathleen R. McKeown. "Extracting Social Networks from Literary Fiction." *Proceedings of the 48th Annual Meeting of the Association for Computational Linguistics*, Association for Computational Linguistics, 2010. 138-47. aclanthology.org/P10-1015. 2024.02.16.
- Jacomy, Mathieu, Tommaso Venturini, Sebastien Heymann, and Mathieu Bastian. "ForceAtlas2, a Continuous Graph Layout Algorithm for Handy Network Visualization Designed for the Gephi Software." *PLOS ONE* 9.6 (2014): 1-12. doi: 10.1371/journal.pone.0098679.
- Kim, Heejin. "Character Networks in Shakespeare's Plays." *Proceedings of the 2023 SESK Fall Conference*, Scholars for English Studies in Korea, 2023, pp. 1-14. sesk.net/bbs/board.php?bo\_table=sub1\_6&wr\_id=12. 2024.02.16. [김희진. 「셰익스피어 극의 등장인물 관계망 시각화」. 『2023년 영미문학연구회 가을 학술대회 자료집』영미문학연구회, 2023, pp. 1-14.]
- Labatut, Vincent, and Xavier Bost. "Extraction and Analysis of Fictional Character Networks: A Survey." *ACM Computing Surveys* 52.5 (2019): Article 89, 1-83. doi: 10.1145/3344548.
- Lee, James, and Jason Lee. "Shakespeare's Tragic Social Network; or Why All the World's a Stage." *Digital Humanities Quarterly* 11.2 (2017). www.digitalhumanities.org/dhq/vol/11/2/000289/000289.html. 2024.02.16.

- Moretti, Franco. "Network Theory, Plot Analysis." *Pamphlets of the Stanford Literary Lab* 2 (2011): 1-31. litlab.stanford.edu/LiteraryLabPamphlet2.pdf. 2024.02.16.
- ---. "'Operationalizing': or, the Function of Measurement in Modern Literary Theory." *Pamphlets of the Stanford Literary Lab* 6 (2013): 1-13. litlab.stanford.edu/assets/pdf/LiteraryLabPamphlet6.pdf. 2024.02.16.
- Park, Gyeong-Mi, Sung-Hwan Kim, and Hwan-Gue Cho. "Structural Analysis on Social Network Constructed from Characters in Literature Texts." *Journal* of Computers 8.9 (2013): 2442-47. doi: 10.4304/jcp.8.9.2442-2447.
- Piper, Andrew, Mark Algee-Hewitt, Koustuv Sinha, Derek Ruths, and Hardik Vala. "Studying Literary Characters and Character Networks." *Proceedings* of the Digital Humanities 2017, Alliance of Digital Humanities Organizations, 2017. dh2017.adho.org/abstracts/103/103.pdf. 2024.02.16.
- Selisker, Scott. "The Bechdel Test and the Social Form of Character Networks." New Literary History 46.3 (2015): 505-23, doi: 10.1353/nlh.2015.0024.
- Stiller, James, Daniel Nettle, and Robin I. M. Dunbar. "The Small World of Shakespeare's Plays." *Human Nature* 14.4 (2003): 397-408. doi: 10.1007/s12110-003-1013-1.
- Wilde, Oscar. *Salomé: A Tragedy in One Act*. Trans. Alfred Bruce Douglas. Project Gutenberg, 1894. www.gutenberg.org/files/42704/42704-h/42704-h.htm. 2024.02.16.
- Won, Young Seon. "Exploring Digital Literary Study, an Application: Social Network Analysis of *Emma*." *Nineteenth Century Literature in English* 27.2 (2023): 39-70. doi: 10.24152/NCLE.2023.9.27.2.39. [원영선. 「디지털 문학연구의 탐색과 적용: 『엠마』의 소셜네트워크 분석」. 『19세기 영어권 문학』 27.2 (2023): 39-70.]

## 네트워크 인물론: 연결망 서사 이론을 향하여

국문초록

김용수 (한림대학교)

본 논문은 네트워크 인물론을 제시함으로써 연결망 서사 이론의 가능성을 탐구 한다. 디지털인문학의 연결망 분석 방법론을 서사의 핵심 요소 중 하나인 인물을 이해하는 데 적용하는 것이다. 문학 연구에서 아직 성숙하지 않은 디지털인문학적 접근과 한 동안 비평 이론의 관심에서 벗어나 있던 구조주의 서사 이론을 결합하 려는 시도이기도 하다. 새로운 방법과 오래된 이론의 만남인 셈이다. "특성의 패러 다임"이라는 채트먼(Seymour Chatman)의 인물론을 네트워크 이론으로 재해석하 여 인물의 성격 구성과 인물 간 관계를 수많은 단어의 연결망으로 제시한다. 이는 문학 작품에 연결망 분석을 적용한 지금까지의 디지털 문학 연구에 대해 비판하는 것과 함께 기법, 문체, 양식 등 문학의 형식적 측면에 주목했던 구조주의 문학 이 론을 다시 현재의 비평 장에 불러들여 그 가치를 새롭게 조명한다는 의미를 지닌 다. 서사 이론이 제시한 인물론을 복원함으로써 인물을 연결망의 기본 단위로만 인 식했던 기존의 디지털인문학적 연구를 넘어설 수 있을 뿐만 아니라 서사 이론이 디지털 문학 연구와 네트워크 분석에 수많은 영감을 불어넣을 수 있는 원천임을 증명하고자 한다. 이는 연결망 서사 이론을 향해 나아가는 여정의 중요한 출발점이 될 것이다.

▶ **주제어**: 인물, 연결망 분석, 서사 이론, 채트먼, 디지털인문학

# Character as a Web of Words: Towards a Network Theory of Narrative

Abstract

Yongsoo Kim (Hallym University)

This study explores an integration of network science and structuralist narratology to advance the analysis of literary characters, moving beyond the conventional methodology that simplistically categorizes characters as mere nodes within a social network. By drawing upon Seymour Chatman's narrative theory, particularly his view of character as "a paradigm of traits," I conceptualize characters as networks of words that manifest a constellation of traits. This approach enables a sophisticated examination of character interactions as complex (mis)encounters of words and traits, rather than simple social relationships. This interdisciplinary method broadens the analytical scope beyond mere social interactions, and enhances our understanding of the multifaceted nature of characters and their dynamics in literature. My paper concludes by suggesting that networked understanding of character as a web of words can pave the way for "a unified theory of plot and style," a significant breakthrough in literary studies as envisioned by Moretti. Building a comprehensive network theory of narrative, I argue, is a significant work that will refine the digital literary studies and revive the structuralist narrative theories.

► Keywords: character, network analysis, narrative theory, Seymour Chatman, digital humanities

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