jcls. Journal of Computational Literary Studies

OPEN ACCESS

Article

Repetition and Innovation in Dramatic Texts

An Attempt to Measure the Degree of Novelty in Character's Speech

Botond Szemes[1]
Mihály Nagy[2]

1. Institute for Literary Studies, Research Centre for the Humanities, Hungarian Research Network (HUN-REN), Budapest, Hungary.
2. Doctoral School of History, Eötvös Loránd University, Budapest, Hungary.

Citation
Botond Szemes and Mihály Nagy (2024). "Repetition and Innovation in Dramatic Texts. An Attempt to Measure the Degree of Novelty in Character's Speech". In: *Journal of Computational Literary Studies* 3 (1). 10.48694/jcls.3923

Date published 2024-12-18
Date accepted 2024-10-11
Date received 2024-01-25

Keywords
computational drama analysis, information theory, innovation, sentence embedding, Shakespeare

License
CC BY 4.0

Reviewers
Miguel Escobar Varela, Benjamin Krautter

Note
This paper has passed through the conference track of JCLS. In addition to being peer reviewed, it was presented and discussed at the 3rd Annual Conference of Computational Literary Studies at Vienna, Austria, in June 2024.

Abstract. In the following, we examine how innovative dramatic characters are in relation to each other, i.e., whether they tend to repeat the utterances of others or introduce new information to the discourse of the play. Our method captures the role of characters in this discourse, and through pairwise comparisons, we can also construct networks that represent character relationships in a new way compared to existing approaches. By examining some of Shakespeare's plays, we also identify general patterns regarding the structural differences of the networks and gender roles in comedies and tragedies/non-comedies.

1. Introduction

In dramatic works, the flow of information maintained by the speech acts of the characters is particularly important. In terms of the *internal communication system*, the flow (or the withholding) of information between characters is the driving force of the plot; in terms of the *external communication system*, the audience/readers gain access to the storyworld also mostly through the dialogues (for theoretical description of the two types of systems, see Pfister 1988). Accordingly, co-presence or co-occurrence networks (Trilcke 2013; Trilcke et al. 2015), which have become increasingly popular in recent years, are also often interpreted from the perspective of the internal information flow, although usually implicitly, as in the case of using betweenness centrality as a metric to infer the mediating, even "conspiratorial" role of characters (e.g., Algee-Hewitt 2017; Szemes and Vida 2024). Benjamin Krautter, however, points out that knowledge networks, which represent the transfer of knowledge between characters, and which may well show a different arrangement than co-presence networks, might be better suited to investigate the information flow (Krautter 2023, also Andresen et al. 2022).

In contrast to these approaches, the present study analyzes the information value of characters' speeches in Shakespeare's works from the perspective of the *external communication system*, i.e., from the perspective of the recipient. Andresen et al. (2022) also took this aspect into account in their research, albeit in less detail and focusing on just a specific type of knowledge transmission. Furthermore, we do not follow the theory described by Pfister (1988) strictly in our analysis as they did. That is, we do

not only consider utterances when a character conveys specific knowledge to the audience;[1] rather, we consider all utterances according to the extent to which they add new meanings to the storyworld. When in *Hamlet*, for example, Claudius raises the idea of Hamlet's exile, the information value of the speech is increased by the mentioning of England (and its relationship to Denmark) for the first time in the play – the horizon of the storyworld is literally expanded. However, Denmark's foreign policy relations (with Norway) have been discussed before, so the difference from the earlier discourse is not that great. Equally, it can be informative if a character speaks in a new register, different from previous ones, since this shows that such ways of speaking are in fact possible in the represented world, and that these as contexts influence the interpretability of other utterances as well. Consider, for example, the differences between the royal speech at the beginning of *Hamlet*'s second scene and the sentences exchanged between Horatio and his companions in the first scene, or the dialogue of the Gravediggers in Act 5. The tensions between the royal propaganda and the friendly or humorous remarks create the framework in which the tragedy unfolds. However the Gravediggers' sentences about Hamlet's exile are less novel as this is already mentioned earlier in the play (see the comparison of sentences from these characters in subsection A.2). Together, we refer to these types of differences from the previous discourse as *semantic difference*, which according to our experiments can be captured well with the use of BERT-based language models. The term indicates a focus on the content of the dialogues, but also a consideration of the semantic components of style (e.g., a highly metaphorical utterance is usually more distinct from sentences that elaborate the meaning less metaphorically.)

Let's take a closer look at a concrete example: *Julius Caesar* 1.2.30-187, where Cassius tries to involve Brutus in the conspiracy. At the beginning of the dialogue, which resembles an early-modern version of a psychoanalytic session (Willbern 2005, 220), Cassius offers himself as a mirror for Brutus, allowing him to better understand his thoughts and feelings. This brings into focus the interpersonal nature of the act of seeing: both the recognition of ourselves in the Other and, at the same time, the possibility of manipulation in this process of self-recognition. Several interpreters have already pointed out that the scene also refers to the theatrical situation itself, as the relationship between spectators and performers is also formed in this duality of seeing and recognition (e.g., Freedman 1991, 60; Wilson 2002, 1–2). The interpretation is supported by the fact that a political event is taking place in the background in front of a large crowd; the event is, at the same time, a theatrical one (Zander 2005, 10).

However, there is another aspect that highlights the metatheatrical aspects of the scene which is precisely the dynamics of the external communication system that this paper aims to identify: How the characters' utterances create a common discursive field with which the reader/viewer becomes increasingly familiar, and how they depart from it by introducing new domains. This is, after all, what happens in the conspiracy as well. Cassius seeks to establish common ground with Brutus but also attempts to influence his partner and direct his attention to new aspects. "Cassius's human mirror offers both likeness and opposition. It shows Brutus both what he knows and what he knows but cannot or will not admit." (Willbern 2005, 218). In the same way, Brutus' utterances are

1. Pfister's example is Prospero's speech to Ariel in the beginning of *The Tempest* (I/ii, 250-293) which is more informative for the audience, since Ariel already knew everything that was in the speech.

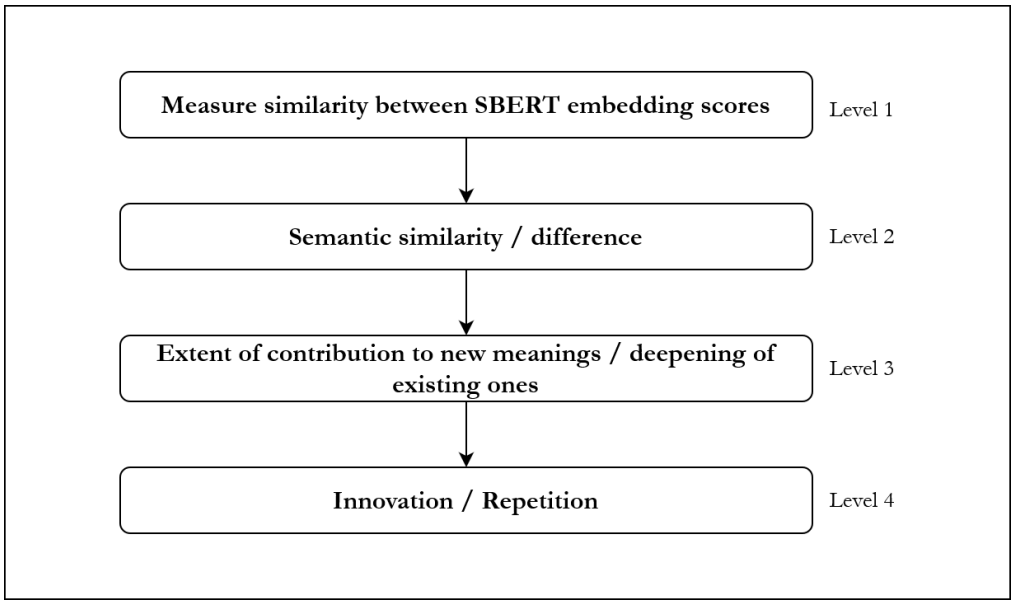


Figure 1: Interpretation process of measurement results.

characterized by this duality. He both follows Cassius in his reasoning and steps out of communion with him by constantly asking for Cassius' hidden intentions.

The table about the scene in subsection A.3 shows the entire dialogue with the values generated by our method (for simplicity, we assume nothing else has been said earlier in the play, and the reader/viewer would follow the events from this point onward). More precisely, the values refer to how similar a given sentence is to the most similar of the previous ones, based on the embedding score of an SBERT model (see section 3 for a detailed explanation). The results are particularly useful for the interpretation mentioned above as they highlight the described dynamic. The sentences from Brutus that show the smallest similarity score to the preceding sentences are the ones in which he leaves the discourse and indicates that he perceives Cassius' underlying intention ("But wherefore do you hold me here so long?", "What you have said I will consider...", "How I have thought of this, and of these times, I shall recount hereafter."). Among Cassius's sentences, those with the smallest similarity scores are the ones where he tries to introduce new topics and guide the conversation in new directions. These include sentences concerning Brutus's gaze and emotions at the beginning of the dialogue (the following sentences elaborate on this topic and are thus more similar to the earlier ones), those that expand the temporal and spatial horizon of the conversation (all the way to Spain), and most importantly, his main question: "Why should that name [Caesar] be sounded more than yours [Brutus]?"

These sentences, being the least similar to the previous ones, are also the most novel for the recipient; the construction of a common discursive ground and its continuous updating are also the basis of the reader's cognitive process of comprehending the storyworld. In this sense, the conspiratorial scene is a model of drama reception. Furthermore, the method's results seem to capture and quantify such a reading experience well. This provides an opportunity for broader interpretations, as conceptualized in the four levels shown in Figure 1.

As a first step, we can infer semantic similarity/difference (level 2) from the distances/similarities calculated from the embedding scores (level 1) which – using a spatial metaphor – represent the location of the sentence in the semantic space of the language. These results may also indicate the extent to which the sentence contributes to the construction of the storyworld with new aspects (themes, registers, emotions, etc.): a high degree of semantic difference; or to the elaboration and deepening of already raised aspects: a high degree of semantic similarity (level 3). The final step leads to the categories of 'innovation' and 'repetition'. The lower the similarity between embedding scores, i.e., the more different the meaning of a sentence is from the previous one, the more it is involved in forming new meanings and thus can be considered innovative. Conversely, repetition refers to when the semantic distance between a sentence and its antecedents is small, meaning its function is to describe earlier aspects in more detail or merely repeat them in different contexts. Note that these categories are idealized extremes and actual sentences fall between these poles. Also note that our results make alternative interpretations possible, however, based on the example of *Julius Caesar* and previous research (see section 2), such an approach seems reasonable.

In light of this, we are interested in the role that a character plays in shaping the storyworld. Two general functions can be distinguished according to the extent to which they contribute to the creation of new meanings by often deviating from what has been said before, or to the extent that they repeat and thus reinforce an already established discourse. *Innovative characters* are responsible for the elaboration of new (semantically distinct) meanings, while *repeaters* or *maintainers* contribute to the development of the central themes and the general ways of speaking in the drama. There is, of course, also a duality of innovation and repetition within each individual character. This can also be detected with our method, since we calculate the semantic difference between each sentence and its preceding discourse for each character, which makes it possible to examine the distribution of both functions in the cast separately. This sentence-level approach can also help us to answer the question of what the innovative function of a character means in a specific case beyond the broad definition. In this paper, we argue that Shakespeare's innovative characters can be divided into two groups: Those who are in fact responsible for transmitting knowledge and those who speak in a different way from the dominant discourse in the drama, usually expressing uncertainty and/or emotion, or using metaphorical language. Our results, furthermore, provide a novel way of describing the difference between comedies and tragedies (or more precisely 'non-comedies'[2]). Namely that female characters in Shakespeare's comedies are more likely to have innovative functions and be repeated by others compared to tragedies.

Finally, the paper also addresses the question of the network representation of character relations. It has been pointed out that the interpretability of networks is significantly affected by the type of relations they represent – different methods lead to different conclusions (Krautter 2023). In the following, we present a new method intended to complement already existing ones. It is based on defining the innovativeness of a character's speech along pairwise comparisons, i.e., comparing characters with each other separately. On the one hand, this makes it possible to measure the similarities

2. Plays labeled as 'comedy' are those that are listed as such in the First Folio (1623). All others are labeled as 'non-comedy' or sometimes in the paper as 'tragedy' for the sake of simplicity. For the structural similarities of the 'non-comedies' (and their resemblance to tragedies) see Szemes and Vida (2024).

between two characters at sentence level. On the other hand, it allows us to represent the relationships on a directed graph, showing which character in the pairwise comparison is more likely to repeat the other. Similarly to Andresen et al. (2022), we attempt to use "a more content-based form of character networks [...] to chart a path to better integrate quantitative analysis and interpretative reading." In the resulting networks, the role played in the whole discourse of the drama and the relationship between two characters can be examined simultaneously.

2. Related Works

The paper draws from previous research within information theory that has likewise attempted to measure innovation and repetition in different communicative situations. However, these studies differ not only in their methods, but also in their theoretical assumptions, as well as in their understanding of the terms 'information', 'novelty', or 'innovation'. Therefore the paper must be situated within previous research and define its subject of measurement, i.e., how it considers the concept of 'innovation' to be operationalized in the study of dramatic texts.

South et al. (2022) analyzed repeated linguistic elements to detect the flow of information between Twitter accounts of news organizations. They assume that when more words exist in the same order across two texts, the degree of novelty between them is lower, and vice versa that previously unused phrases and novel word order make a text innovative. Accordingly, their method is based on the identification of the longest repeated sequences of words. This approach functions well in the case of Twitter posts, however, when applied to less homogeneous and considerably more poetic dramatic texts, it is less useful. This is because in such texts, repeating sequences almost in all cases are conventionalized expressions (e.g., 'there are', 'good morning'). Therefore, the results would not primarily indicate semantic similarity.

Sims and Bamman (2020) also set out to explore recurring linguistic elements when determining the role of characters in a novel's social and information networks. Beyond considering the mere frequency of words, they also examined POS tags and grammatical relations. Using a selection of verbs that describe the most important events of a plot, they identified 'Subject – Verb – Object' triples (e.g., 'Thomas – left – Vienna'). If a triple is mentioned by two characters, we can say that they refer to the same event so that the former has an *informational impact* on the latter. The challenges of the method include inaccuracies in co-reference resolution (which assigns each utterance to the corresponding character, although this is much simpler in dramatic works) and in dependency analysis, as well as the somewhat arbitrary selection of the group of verbs to be considered. Whereas Sims and Bamman (2020) sought to explore the direct effect between characters (internal communication system), we interpret innovation and repetition in relation to the entire discourse preceding an utterance (external communicational system): Even though we make pairwise comparisons, we do not assume that the similarity of two characters' utterances indicates a direct causal relation; we just examine the extent to which the content of an utterance is similar to what was said before.

The same question was asked by Barron et al. (2018), who measured whether speeches by members of the Parliament during the French Revolution had raised new themes

or contributed to maintaining previous ones. Their approach applies Kullback–Leibler Divergence (KLD), a measure often used in similar contexts due to its strong foundation in information theory. In short, with KLD the difference between the vector representation of texts is not calculated through the spatial metaphor of distance (how far one text is from another in a vector space), but through a model of *experience* (how surprising a text is when conditioned on prior knowledge, see Chang and DeDeo 2020). Barron et al. (2018) first determined the distribution of different topics across parliamentary speeches, then compared these distributions with the help of KLD. A similar attempt was made by Piper et al. (2023) who, on the other hand, used a simple distribution of word frequencies of equal-length chunks to calculate their divergence, through which they could measure the process of narrative revelation.

Since the comparison of texts in this study is based on their semantic relations, neither the consideration of the longest recurring sequences nor word frequency distributions proved to be useful approaches. Similarly, doing topic modeling like Barron et al. (2018) also proved impractical, because in the case of a drama, the utterances are usually too short to effectively identify themes in them. Nor does one drama provide enough data to distinguish the characters efficiently according to the distribution of themes. Therefore, we use Large Language Models (LLMs) to determine the position of each sentence of a drama within a vector space representing the semantic field of the given language. The embedding process is driven by the SBERT (Sentence-BERT) algorithm which can quantitatively capture the meaning of larger units, such as sentences, compared to the word-level embeddings of previous BERT models (Reimers and Gurevych 2019). The vector representation of separate sentences makes their semantic comparison possible, which can be utilized in our research to examine the character speeches based on their content. *Semantic similarity* refers mainly to thematic similarities, but also includes the style of the sentences (e.g., terms belonging to the same style/register are semantically more similar). In light of this, we can say that the less semantically similar a sentence is to its predecessors, the greater the degree of information it conveys (innovativeness). Conversely, the more similar a sentence is to its predecessors, the more it contributes to the repetition of an already existing discourse.

This was the approach also used by Dubourg et al. (2023) in their study measuring the innovation of movie plots. Converting the plot summaries of over 19,000 films into vectors with the help of the SBERT algorithm, they calculated the cosine similarity between a summary and all preceding film summaries and averaged them to determine a film's Innovation Score, i.e., the average distance of the current embedding from previous ones. Our method compares the sentences spoken by characters in a similar way. This is important to note because Dubourg et al. (2023) also evaluated the method and found their results to be positively correlated with results from text mining of viewer reviews (Luan and Kim 2022). In our case such a comparison is not possible due to the lack of other results and because, as we have seen, the procedures mentioned so far cannot be adapted without problems to answer our research question.

Indeed, so far in the field of quantitative drama analysis, there have not yet been any attempts to answer such a question relating to repetition and innovation in a character's speech. Most of the previous research investigated primarily the structural characteristics

of plays (for an overview, see Szemes and Vida 2024) while other, more language-oriented investigations have mostly experimented with topic modeling of larger corpora (and explored genre differences, see Schöch 2017). Regarding Shakespeare's works most attention has been paid to authorial style and keyword analysis (Craig and Kinney 2009) or to uncovering changes in word use in the oeuvre (Hope and Witmore 2014). The closest to the research is that of Andresen et al. (2022) and Krautter (2023), with the differences already mentioned in section 1. It is also important to refer to the research of Šeļa et al. (2024), in which they used stylometric methods developed for authorship attribution to calculate the difference between characters' speeches. However, their focus was not on the semantic content of the texts and their degree of innovation, but exclusively on their stylistic differences. We hope, therefore, that our study will provide new perspectives to the field and at the same time enrich the interpretability of certain plays.

3. Method

For our study, we used dramatic texts from Shakespeare in TEI-XML format provided by the Drama Corpus Project (Fischer et al. 2019).[3] As a first step, we created a tabular representation of all the individual sentences from a play. We assigned to each sentence 1) the name of the character, 2) a timestamp representing the position of the spoken text within the whole drama (from 1 to the last sentence), 3) the number of the act in which the sentence is spoken, and 4) the embedding score provided by a language model. Regarding the last point, the selection of the right model is a primary concern. Using example sentences taken from the corpus, we experimented with several state-of-art best-performing SBERT models (Reimers and Gurevych 2019).[4] We selected sentences with similar and dissimilar meanings (at this stage we judged similarity intuitively and the selection was made manually), and calculated their cosine similarity in a pairwise manner. Subsequently, we calculated the standard deviation of the similarities. Although there was a minimal variation between the models, we chose to use the popular 'all-MiniLM-L6-v2', as its results showed the highest standard deviation, which means that the distribution among similar and dissimilar meanings are the largest in this case. See the experiment details and the performance of the chosen model in the project's GitHub repository (section 7) where the performance can also be evaluated manually by looking at the most/least similar sentence pairs of the plays (see subsection A.1 and section 4 for further manual evaluation). Regarding the most similar sentences, for example, character names seem to have a strong influence on sentence similarity. The names could have been therefore filtered out during the pre-processing stage, but it was considered worth keeping them because of their role in the creation of meaning. At the same time, sentences with fewer than four words (e.g., "Yes, sir") were excluded, as they are less likely to convey relevant meaning, but are rather conventionalized expressions.

3. See section 6.
4. See the code repository linked in section 7 for a list of the models used.

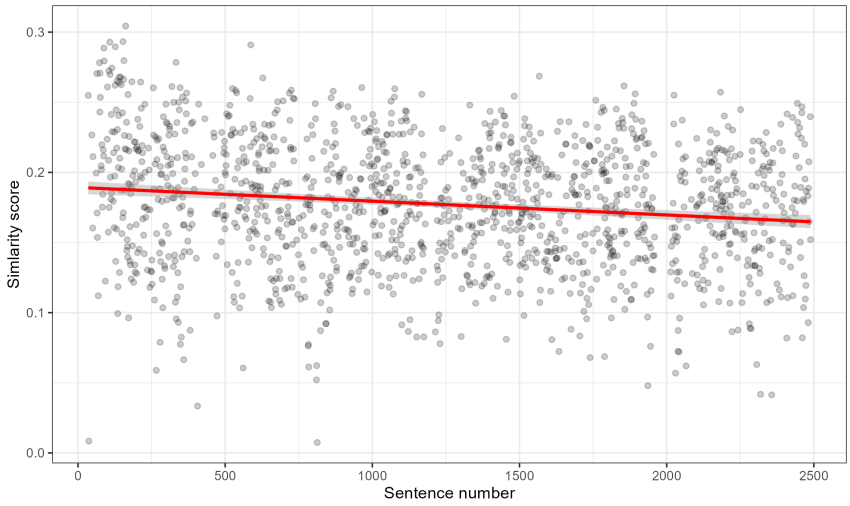
We then created pairs from the most frequent speakers (i.e., the main characters[5]) in a specific order: The first member of the pair became the Source, and the second the Target character. During their comparison, we calculated the cosine similarity between a Target sentence and all the preceding Source sentences. In contrast to the method of Dubourg et al. (2023), we did not take the average of these similarities but only selected the largest of them to characterize semantic proximity. Thus, for each sentence of the Target character, we assigned a number indicating *how semantically similar it is to the most similar* of the previous sentences of Source (Maximum Cosine Similarity, in short MCS). It can be assumed that the higher the number, the less innovative the meaning of the sentence since it repeats previous content.

There are several arguments for using the Maximum Cosine Similarity instead of the average. Firstly, if a Source character speaks on many different topics in many different registers before the current Target sentence, then on average this Target sentence will be less similar, even if the Source character has spoken the same sentence before. MCS avoids this by focusing on the maximum value, however, this also means that the result does not report on *how often* the Source character has elaborated similar meanings. Secondly, MCS values can be used to find the most similar sentence pairs between Source and Target, contributing to the overall interpretability of the results. Thirdly, the MCS scores have a higher standard deviation than the scores of average cosine similarity (for *Hamlet*, the sd of the maximum values is 0.11 while the sd of the averages is 0.04 – see Figure 2), making the sentences more differentiable. It is also important to note that both measures are influenced by temporality: In case of average cosine similarity, the earlier the utterance, the more it tends to be similar to the preceding discourse (see Figure 2a), and in case of maximum cosine similarity, the later the utterance, the more it is characterized by a high value (Figure 2b). This effect can be compensated for by weighting / adjusting the results. To do this, we first calculated the average MCS value for each act and for the drama as a whole, and then used the difference between the values for the acts and for the drama to weigh the scores according to the act in which the sentence was uttered. For example, the sentences in the first act were weighted by the difference between the average MCS for the first act and the drama as a whole. However, a high degree of variation can be seen in the dataset: Sentences with high MCS values can be found in the first act just as much as sentences with low ones at the end of a drama.

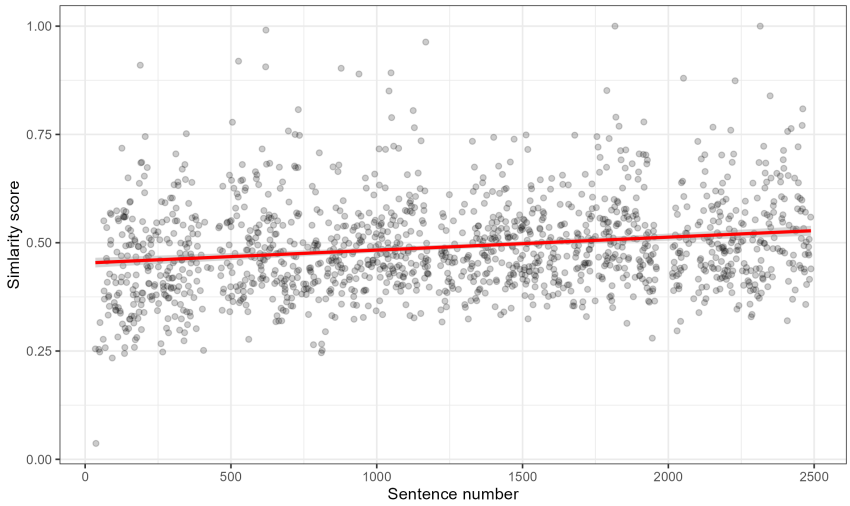
In the next step, we assigned the average of the weighted MCS scores to each Source-Target pair and performed network normalization on the dataset following the methodology developed by South et al. (2022). The key consideration here is that if character 'B' frequently repeats character 'A', but character 'A' also repeats other characters, then character 'B' is indirectly connected to such other characters as well. To conduct our network normalization, we determined the average score of a given character as Target, and then divided all similarity scores by this number where this character was the Source.

Finally, we calculated the differences for character pairs depending on which character

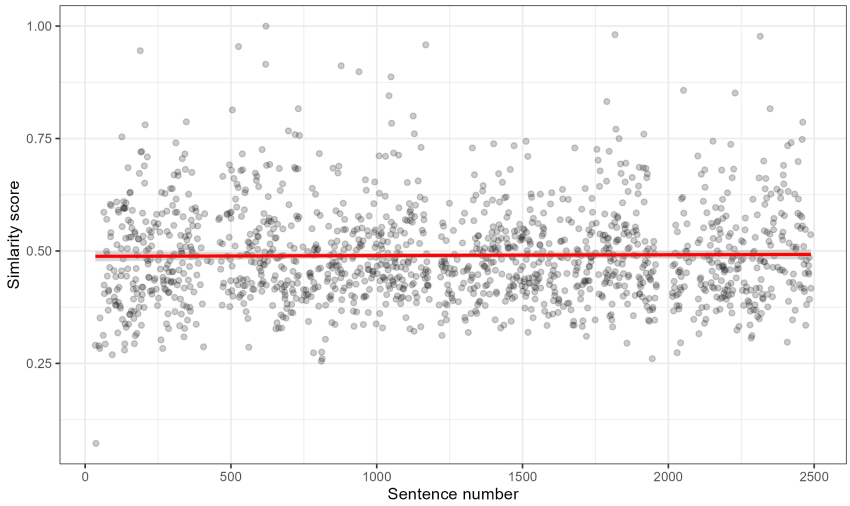
5. Main characters are considered those with more than 30 long sentences for shorter plays (less than 1,000 long sentences), more than 40 for plays with medium length (number of long sentences between 1,000 and 1,700), and more than 50 for longer plays. Occasionally, individual considerations may also come into play, for example if a character speaks a lot but only in one scene (e.g., the Gravediggers in *Hamlet*).



(a) Mean Cosine Similarity.



(b) Maximum Cosine Similarity – without weight.



(c) Maximum Cosine Similarity – weight by act.

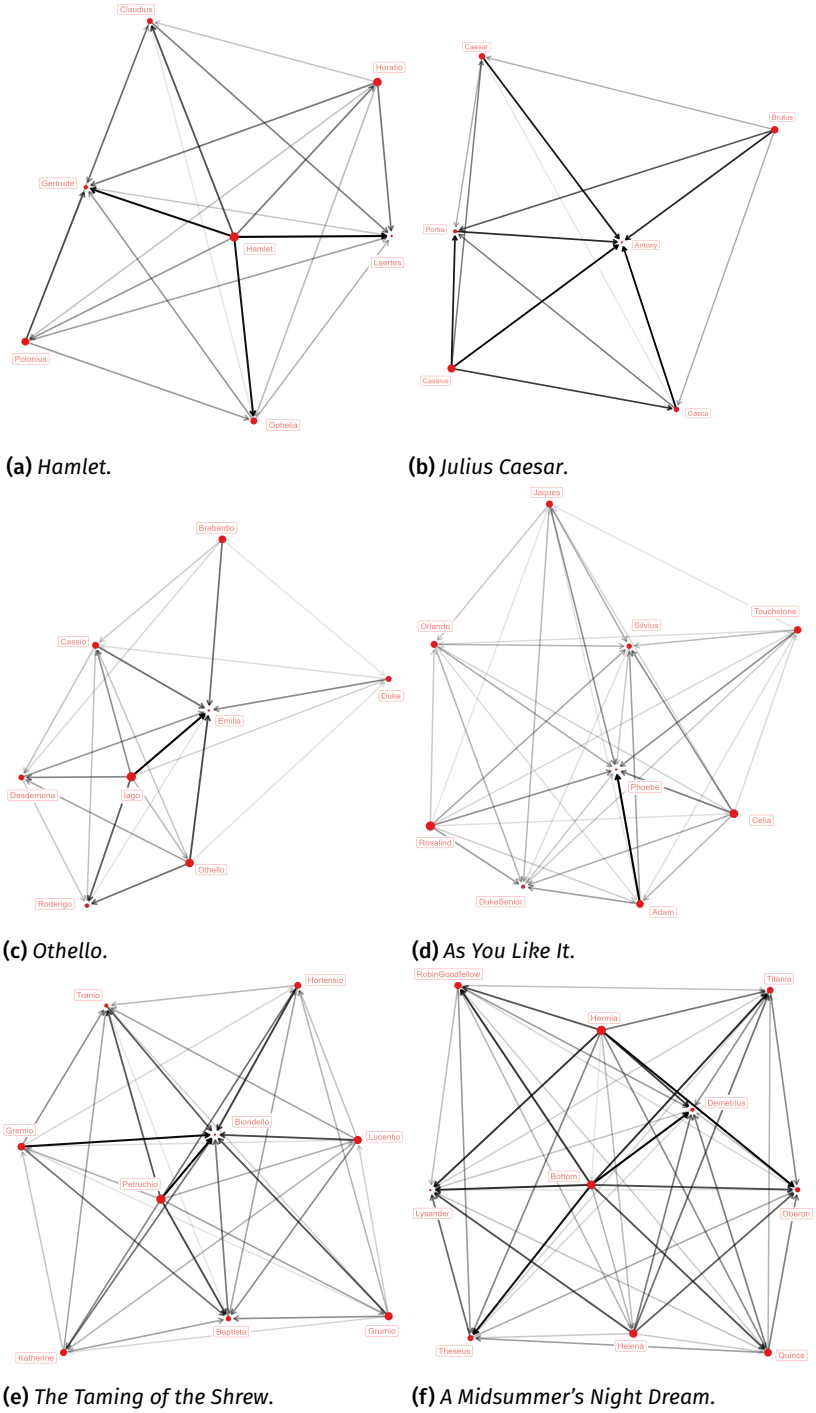
Figure 2: The relationship between time of utterance and similarity score in *Hamlet* with linear trend line.

is listed as the Source or Target (e.g., Hamlet-Claudius vs. Claudius-Hamlet). If the difference is positive, then the Target character's sentences are more likely to develop a similar meaning to the Source character's earlier sentences than vice versa, i.e., the Source character is considered more innovative in their relationship. As a final result, only these positive values were retained and used for network visualization.

4. Results

The results allow us to visualize the relationships between characters in terms of repetition and innovation as a network. In the example networks seen in Figure 3, the arrows go from Source to Target (indicating which character is more likely to repeat the other), their thickness is determined by the degree of similarity/repetition, and the size of the nodes as an innovation score indicates how often the character is listed as Source, i.e., how often it is considered innovative in pairwise comparisons. The latter is influenced by both the number of observed sentences and partly the time of utterance: The chance of a character being novel is increased by speaking both earlier, and on more occasions. Even though we applied the above-mentioned weighting method, characters that speak mainly in the second half of the plot generally received lower innovation points (e.g., Antonius in *Julius Caesar* or Emilia in *Othello*). We do not see this as a measurement bias but as a characteristic of a character type. This is supported by the fact that there are also examples where as the plot progresses one character becomes increasingly different from another, such as Mercutio, the character with the highest innovation score in *Romeo and Juliet*, compared to both Romeo and Benvolio, the characters with the second and third highest scores, respectively (Figure 3). The location of the nodes in the networks is determined by the ForceAtlas2 algorithm, which brings the nodes closer to each other based on the weight of the edges between them.

The overall examination of Shakespeare's plays shows that the relationship between characters is in most cases hierarchical (i.e., the characters can be ordered hierarchically according to their innovation scores). This is particularly true for tragedies/non-comedies, where the characters with the highest innovation scores can almost always be arranged in a hierarchical way, and only at lower levels can equal scores be found. Equal scores mean that there is a degree of circularity in the dramas: Character 'A' tends to repeat 'B', 'B' repeats 'C', whereas 'C' repeats 'A' etc. At a higher level, this happens mainly in comedies (among non-comedies, in *Cymbeline*, *Macbeth* and *Pericles*, a play with much debated genre). For example, in *The Taming of the Shrew* Grumio and Gremio, and also Lucentio and Katharine; in *As You Like It* Orlando, Adam and Touchstone; in *Measure for Measure* Duke, Lucio and Angelo take on the same values. This difference between genres is in line with previous results based on co-occurrence networks, which show that comedies are characterized by a denser system of relationships, while tragedies by one or two characters with a connecting function who control the social relations (more hierarchical distribution of node degrees). This also means that in comedies there are many misunderstandings and parallelisms (two characters connected by different paths) during the interactions, however, for the same reason such networks are 'protected' from falling apart when a certain piece of information is revealed to be untrue. In contrast, information flow is effective and fast in tragedies, but



(a) *Hamlet.* **(b)** *Julius Caesar.*

(c) *Othello.* **(d)** *As You Like It.*

(e) *The Taming of the Shrew.* **(f)** *A Midsummer's Night Dream.*

Figure 3: Networks of Shakespeare's plays. The arrows go from Source to Target (indicating which character is more likely to repeat the other), their thickness is determined by the degree of similarity/repetition, and the size of the nodes indicates how often the character is considered innovative in pairwise comparisons. The position of the nodes in the networks is determined by the ForceAtlas2 algorithm.

the networks themselves are fragile, as the failure of a connecting character can lead to the disintegration of the whole system (Szemes and Vida 2024).

All of this is further nuanced by another distinction between genres based on our measures. It is striking that in the 23 non-comedies the characters most repeated by others are males (except Imogen in *Cymbeline* and Lady Macbeth who is as innovative as Macbeth and Banquo), while in comedies, female characters are more likely to be the most innovative (six times out of 14). In *As You Like It* Rosalinda (and Celia in the second place) has the highest score; in *All's Well That Ends Well* the Countess (and Helen in the second place), in *The Comedy of Errors* Adriana; in *A Midsummer Night's Dream* Hermia (and Helena in the third place, while their counterparts, Lysander and Demetrius have the lowest innovation scores among the main characters); in *Much Ado About Nothing* Beatrice, and maybe most surprisingly in *The Tempest* Miranda ahead of Gonzalo and Prospero. We can say, that in the two kinds of communities, those who thematize the discourse (or at least who is repeated more than he or she repeats others) appears to differ, although not exclusively, in terms of gender. Women are more likely to play that role in the protected networks of the comedies, and men in the effective but vulnerable tragedies.

It is also worth looking at the results of pairwise comparisons in more detail and identifying the most and least similar sentences between characters. In addition to a qualitative evaluation of the method, this can also contribute to a close reading of the dramas and a deeper understanding of the characters. As an example, in *Hamlet*, the model grasps exactly the essential duality of the main character: He is striving to define himself and others but, at the same time, is constantly doubting such identifications. Hamlet's sentences which are most similar to the earlier utterances of the other characters are often about defining his own and others' identity, while his most different and innovative sentences report doubt and uncertainty, often in a conditional or interrogative mood (Table 1; see our GitHub repository for all the sentences and their most/least similar pairs from other characters).[6]

Hamlet's speech is most similar to the discourse of the court when he names or identifies someone/something and most divergent when he questions or is uncertain. Since he is considered the most innovative in the drama, we can say that his sentences about doubt are predominant and they give the essence of his character, but it is also important to see his statements in the opposite direction. Conversely, the most innovative sentences by Horatio, the second most innovative character in the drama, do not express uncertainty. He is rather the one who brings news to others and often speaks as an *eyewitness* – in this sense, he really creates new information, not just develops semantically divergent meanings (Table 2). These sentences illustrate well his dramaturgical function of linking events and communities (Moretti 2011).

Utterances expressing doubt, reflecting on either mental states like emotions or the outside world appear as most divergent in other characters from other dramas as well. One example is Hermia in *A Midsummer Night's Dream* (Table 3), who is the most innovative

6. The example sentences reported here have been hand-picked for interpretation from the ten sentences with the highest and lowest cosine distance in the pairwise comparisons. The selection is therefore somewhat arbitrary: It is analogous to a researcher trying to make sense of the output of keyword analysis or topic modeling. The full list is given in the project's GitHub repository.

High similarity, low innovation	Low similarity, high innovation
This is I, Hamlet the Dane.	I doubt some foul play.
The King is a thing –	I would I had been there.
O God, Horatio, what a wounded name, Things standing thus unknown, shall I leave behind me!	Do they hold the same estimation they did when I was in the city?
If Hamlet from himself be ta'en away, And when he's not himself does wrong Laertes, Then Hamlet does it not; Hamlet denies it.	The time is out of joint.
Here comes the King, The Queen, the courtiers.	These foils have all a length?

Table 1: Examples of the least and most innovative sentences spoken by Hamlet as Target (*Hamlet*).

Low similarity, high innovation
Not when I saw 't.
I will forestall their repair hither and say you are not fit.
Indeed, I heard it not.
It was as I have seen it in his life, A sable silvered.
It would have much amazed you.

Table 2: Examples from the most innovative sentences spoken by Horatio (*Hamlet*).

Low similarity, high innovation
Who is 't that hinders you?
Then I well perceive you are not nigh.
I understand not what you mean by this.
Too high to be enthralled to low.
Nothing but "low" and "little"?

Table 3: Examples of the most innovative sentences spoken by Hermia (*A Midsummer Night's Dream*).

character in the drama precisely because of questioning the nature of things around her (even compared to Bottom who appears in a subplot separate from the majority of the cast and, therefore often speaks about something else). Furthermore, the duality observed in Hamlet is also characteristic of Brutus in *Julius Caesar*. His most similar sentences to the previous discourse are predominantly about the murder; whereas the least similar ones are about doubts and emotions (Table 4). It is worth comparing this with the utterances of Caesar, who only briefly expresses doubt, specifically about going to the Senate (his most innovative utterances), and instead accepts his death to maintain the conventional image of the emperor. This is shown by the fact that he often speaks of himself in the singular third person: "Caesar shall forth."; "Danger knows full well/ That Caesar is more dangerous than he." etc.

Characters with connecting functions like Horatio can be found also in other plays, whose novelty lies in their reports about specific events. Such is Cassius in *Julius Caesar*, who can be seen as an innovator even compared to Brutus. His sentences with the highest/lowest MCS score show an opposite pattern to Brutus: He repeats the others when he uses terms referring to emotions and inner values, while his sentences about concrete events differ the most (Table 5). Cassius is in charge of moving the plot forward, bringing news and argument; he also recruits the wavering Brutus into the conspiracy. Part of it is that when Cassius speaks of emotions, he is not talking about himself, but about others. On the other hand, the sentences of Brutus that mark specific events, refer not to the conspiracy but to the murder itself; they are often retrospective and thus less novel. Until the murder takes place, or until he is determined to commit it, he speaks of more abstract topics, demonstrated by one of his most divergent sentences relative to Caesar: „Between the acting of a dreadful thing/ And the first motion, all the interim is/ Like a phantasma or a hideous dream."

Finally, it is worth highlighting *Othello*, in which Iago is associated with the highest innovation score. This is not surprising as he increasingly controls the discourse as the plot develops, and in some cases even makes others, especially Othello, repeat his sentences (e.g., "Men should be what they seem" [Iago], "Certain, men should be what they seem." [Othello]; "Or to be naked with her friend in bed/ An hour or more, not meaning any harm?" [Iago], "Naked in bed, Iago, and not mean harm?" [Othello]). The sentences of Othello that differ most from Iago's previous utterances are at the end of the drama. In these, he describes his situation using more abstract language, which

High similarity, low innovation	Low similarity, high innovation
Mark Antony, here, take you Caesar's body.	I would not, Cassius, yet I love him well.
And for Mark Antony, think not of him, For he can do no more than Caesar's arm When Caesar's head is off.	That you do love me, I am nothing jealous.
Vexèd I am Of late with passions of some difference, Conceptions only proper to myself, Which give some soil, perhaps, to my behaviors.	If I have veiled my look, I turn the trouble of my countenance Merely upon myself.
Hold, then, my sword, and turn away thy face While I do run upon it.	But if these – As I am sure they do – bear fire enough To kindle cowards and to steel with valor The melting spirits of women, then, countrymen, What need we any spur but our own cause To prick us to redress?
But, alas, Caesar must bleed for it.	Enjoy the honey-heavy dew of slumber.

Table 4: Examples of the most and least innovative sentences spoken by Brutus (*Julius Caesar*).

High similarity, low innovation	Low similarity, high innovation
Yet I fear him, For in the engrafted love he bears to Caesar –	The clock hath stricken three.
Well, Brutus, thou art noble.	The morning comes upon 's.
I blame you not for praising Caesar so.	And I do know by this they stay for me In Pompey's Porch.
Caesar doth bear me hard, but he loves Brutus.	When went there by an age, since the great flood, But it was famed with more than with one man?
I know that virtue to be in you, Brutus, As well as I do know your outward favor	No, it is Casca, one incorporate To our attempts.

Table 5: Examples of the most and least innovative sentences spoken by Cassius (*Julius Caesar*).

may indicate that by the end of the plot, he will be able to view events from an external and broader perspective (Iago's mastery of always focusing his attention on the concrete signs). However, this may also indicate that he is still incapable of introducing novel information about the concrete storyworld, and thus becomes innovative compared to Iago just when he refrains from naming things, as Iago does it instead of him. This is exemplified by one of Othello's less similar sentences said to Desdemona: "Let me not name it to you, you chaste stars."

5. Conclusion

Comparing sentence-level embeddings of character utterances can be useful both for interpreting specific plays and for identifying general patterns in bigger corpora. According to the method proposed in the paper, characters whose sentences are the most semantically different from the previous sentences of other characters can be considered innovative. In this case, the degree of difference is measured by Maximum Cosine Similarity of embedding scores of a language model (how similar the most similar sentence is), rather than the average distance from all the previous sentences. The networks resulting from pairwise comparisons present the relationships between characters and provide at the same time a new way of describing the difference between Shakespeare's comedies and non-comedies. While in non-comedies that are more hierarchical in terms of the distribution of innovation scores, the male protagonists' speeches are repeated by others, whereas in more circular comedies, female characters are more likely to thematize the discourse of the play.

When analyzing the sentence pairs with the highest/lowest similarity scores, two types of characters seem to be distinguishable in Shakespeare's plays, both of which can be considered innovative. On the one hand, some characters often introduce new information into the discourse and report on events distant in time or space. For example, Horatio in *Hamlet* as an eyewitness to various events functions as a link between groups; Cassio in *Julius Caesar*, the main organizer of the conspiracy; and Bottom in *A Midsummer Night's Dream* who also connects a subplot with the main characters. Others don't bring new information into the discourse in the traditional sense, i.e., they do not talk about something different, but in a *different way*. This may be the result of the doubt in the established relations and identities (for example, Hamlet on the question of identity, Hermia on the perception and interpretation of the outside world), the predominance of emotions (Brutus), or the use of puns and a language with erotic connotations (Mercutio). In this context, the difference between abstract and concrete sentences also seems to be a general pattern: The more poetic and abstract an utterance is, the more innovative it appears.

6. Data Availability

Data can be found here: `https://github.com/dracor-org/shakedracor`. It has been archived and is persistently available at: `https://doi.org/10.5281/zenodo.14379595`.

7. Software Availability

All code created and used in this research has been published at: https://github.com/SzemesBotond/info-drama. It has been archived and is persistently available at: https://doi.org/10.5281/zenodo.14379595.

8. Acknowledgements

Botond Szemes was supported by the ÚNKP-23-4 New National Excellence Program of the Ministry for Culture and Innovation (Hungary) from the source of the National Research, Development and Innovation Fund.

The authors are grateful for the help of Zsombor Komán in the application of LLMs, Benjamin Schmidt and Malte Vogl in code review.

9. Author Contributions

Botond Szemes: Conceptualization, Methodology, Visualization, Writing – original draft

Mihály Nagy: Data Analysis, Methodology, Writing – review & editing

References

Algee-Hewitt, Mark (2017). "Distributed Character: Quantitative Models of the English Stage, 1550–1900". In: *New Literary History* 48 (4), 751–782. 10.1353/nlh.2017.0038.

Andresen, Melanie, Benjamin Krautter, Janis Pagel, and Nils Reiter (2022). "Who Knows What in German Drama? A Composite Annotation Scheme for Knowledge Transfer. Annotation, Evaluation, and Analysis". In: *Journal of Computational Literary Studies* 1 (1). 10.48694/jcls.107.

Barron, Alexander T. J., Jenny Huang, Rebecca L. Spang, and Simon DeDeo (2018). "Individuals, Institutions, and Innovation in the Debates of the French Revolution". In: *PNAS* 115 (18), 4607–4612. 10.1073/pnas.1717729115.

Chang, Kent K. and Simon DeDeo (2020). "Divergence and the Complexity of Difference in Text and Culture". In: *Journal of Cultural Analytics* 5 (2). 10.22148/001c.17585.

Craig, Hugh and Arthur F. Kinney (2009). *Shakespeare, Computers and the Mystery of Authorship*. Cambridge University Press.

Dubourg, Edgar, Andrej Mogoutov, and Nicolas Baumard (2023). "Is Cinema Becoming Less and Less Innovative with Time? Using Neural Network Text Embedding Model to Measure Cultural Innovation". In: *Proceedings of the Computational Humanities Research Conference 2023 Paris, France, December 6-8, 2023*. Ed. by Artjoms Šeļa, Fotis Jannidis, and Iza Romanowska. CEUR-WS. https://ceur-ws.org/Vol-3558/paper7806.pdf (visited on 12/01/2024).

Fischer, Frank, Ingo Börner, Mathias Göbel, Angelika Hechtl, Christopher Kittel, Carsten Milling, and Peer Trilcke (2019). "Programmable Corpora: Introducing DraCor, an Infrastructure for the Research on European Drama". In: *Digital Humanities 2019: Complexities. Book of Abstracts*. Utrecht University. 10.5281/zenodo.4284002.

Freedman, Barbara, ed. (1991). *Staging the Gaze: Postodernism, Psychoanalysis, and Shakespearen Comedy*. Cornell University Press.

Hope, Jonathan and Michael Witmore (2014). "Quantification and the Language of Later Shakespeare". In: *Actes des congrès de la Société française Shakespeare* 31, 123–149. 10.4000/shakespeare.2830.

Krautter, Benjamin (2023). "Kopräsenz-, Koreferenz- und Wissens-Netzwerke. Kantenkriterien in dramatischen Figurennetzwerken am Beispiel von Kleists Die Familie Schroffenstein (1803)". In: *Journal of Literary Theory* 17 (2), 261–289. 10.1515/jlt-2023-2012.

Luan, Yingyue and Yeun Joon Kim (2022). "An Integrative Model of New Product Evaluation: A Systematic Investigation of Perceived Novelty and Product Evaluation in the Movie Industry". In: *PloS One* 17 (3). 10.1371/journal.pone.0265193.

Moretti, Franco (2011). "Network Theory, Plot Analysis". In: *Stanford Literary Lab Pamphlets* 2. https://litlab.stanford.edu/LiteraryLabPamphlet2.pdf (visited on 12/01/2024).

Pfister, Manfred (1988). *The Theory and Analysis of Drama*. Trans. by John Halliday. Cambridge University Press.

Piper, Andrew, Hao Xu, and Eric D. Kolaczyk (2023). "Modeling Narrative Revelation". In: *Proceedings of the Computational Humanities Research Conference 2023 Paris, France, December 6-8, 2023*. Ed. by Artjoms Šeļa, Fotis Jannidis, and Iza Romanowska. CEUR-WS. https://ceur-ws.org/Vol-3558/paper6166.pdf (visited on 12/01/2024).

Reimers, Nils and Iryna Gurevych (2019). "Sentence-BERT: Sentence Embeddings Using Siamese BERT- Networks". In: *Proceedings of the 2019 Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (EMNLP-IJCNLP): System Demonstrations*. Ed. by Sebastian Padó and Ruihong Huang. Association for Computational Linguistics. https://aclanthology.org/D19-1410.pdf (visited on 12/01/2024).

Schöch, Christoph (2017). "Topic Modeling Genre: An Exploration of French Classical and Enlightenment Drama". In: *Digital Humanities Quaterly* 11 (2), 4607–4612. https://www.digitalhumanities.org/dhq/vol/11/2/000291/000291.html (visited on 12/01/2024).

Šeļa, Artjoms, Ben Nagy, Joanna Byszuk, Laura Hernández-Lorenzo, Botond Szemes, and Maciej Eder (2024). "From Stage to Page: Stilistic Variation in Fictional Speech". In: *Computational Drama Analysis*. Ed. by Andresen Melanie and Nils Reiter. De Gruyter.

Sims, Matthew and David Bamman (2020). "Measuring Information Propagation in Literary Social Networks". In: *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing (EMNLP)*. Ed. by Bonnie Webber, Trevor Cohn, Yulan He, and Yang Liu. Association for Computational Linguistics, 642–652. 10.18653/v1/2020.emnlp-main.47.

South, Tobin, Bridget Smart, Matthew Roughan, and Lewis Mitchell (2022). "Information Flow Estimation: A Study of News on Twitter". In: *Online Social Networks and Media* 31. 10.1016/j.osnem.2022.100231.

Szemes, Botond and Bence Vida (2024). "Tragic and Comical Networks- Clustering Dramatic Genres According to Structural Properties". In: *Computational Drama Analysis*. Ed. by Andresen Melanie and Nils Reiter. De Gruyter.

Trilcke, Peer (2013). "Social Network Analysis (SNA) als Methode einer textempirischen Literaturwissenschaft". In: *Empirie in der Literaturwissenschaft*. Ed. by Philip Ajouri, Katja Mellmann, and Christoph Rauen. Brill | mentis, 201–247. 10.30965/9783957439710_012.

Trilcke, Peer, Frank Fischer, and Dario Kampkaspar (2015). "Digital Network Analysis of Dramatic Texts". In: *Digital Humanities 2015: Global Digital Humanities. Book of Abstracts*. Ed. by Anne Baillot, Toma Tasovac, Walter Scholger, and Georg Vogeler. University of Western Sydney.

Willbern, David (2005). "Constructing Caesar: A Psychoanalytic Reading". In: *Julius Caesar. New Critical Essays*. Ed. by Horst Zander. Routledge, 213–227.

Wilson, Richard (2002). "Introduction". In: *Julius Caesar: Contemporary Critical Essays*. Ed. by Richard Wilson. Palgrave, 1–29.

Zander, Horts (2005). "Julius Caesar and the Critical Legacy". In: *Julius Caesar. New Critical Essays*. Ed. by Horst Zander. Routledge, 3–59.

A. Appendix - Cosine Similarity Scores

A.1 Similar and Dissimilar Sentences from *Hamlet* Used to Model Comparison

Sentences:

1. How now, what noise is that?
2. Alack, what noise is this?
3. Exchange forgiveness with me, noble Hamlet.
4. O Hamlet, speak no more!
5. To die, to sleep—\No more—and by a sleep to say we end\The heartache and the thousand natural shocks\That flesh is heir to—'tis a consummation\Devoutly to be wished.
6. . This gentle and unforced accord of Hamlet\Sits smiling to my heart, in grace whereof\No jocund health that Denmark drinks today\But the great cannon to the clouds shall tell,\And the King's rouse the heaven shall bruit again,\Respeaking earthly thunder.
7. To be or not to be, that is the question:\Whether 'tis nobler in the mind to suffer\The slings and arrows of outrageous fortune,\Or to take arms against a sea of troubles And, by opposing, end them.
8. Though yet of Hamlet our dear brother's death\The memory be green, and that it us befitted\To bear our hearts in grief, and our whole kingdom\To be contracted in one brow of woe,\Yet so far hath discretion fought with nature\That we with wisest sorrow think on him\Together with remembrance of ourselves.
9. Ay, truly, for the power of beauty will sooner transform honesty from what it is to a bawd thanthe force of honesty can translate beauty into his likeness.
10. Could beauty, my lord, have better commerce than with honesty?
11. Rest, rest, perturbed spirit!
12. Their residence,both in reputation and profit, was better both ways.

2	0.85										
3	0.04	0.04									
4	0.11	0.09	0.59								
5	0.05	0.09	0.36	0.34							
6	0.12	0.13	0.52	0.47	0.54						
7	-0.04	-0.01	0.39	0.33	0.40	0.32					
8	-0.03	-0.04	0.53	0.53	0.53	0.55	0.39				
9	-0.05	-0.07	0.26	0.19	0.30	0.31	0.22	0.25			
10	-0.06	-0.09	0.26	0.14	0.19	0.28	0.21	0.18	0.72		
11	0.10	0.09	0.23	0.18	0.42	0.36	0.19	0.27	0.20	0.14	
12	0.04	-0.03	0.16	0.01	-0.02	0.09	0.10	0.05	0.07	0.24	-0.03
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**

Table 6: Similarity scores.

A.2 Similar and Dissimilar Sentences from *Hamlet* – Examples from the First Scene, the King's Speech and the Gravediggers's Dialogue

Sentences:

1. He shall with speed to England\For the demand of our neglected tribute.
2. It was that very day that young Hamlet was born — he that is mad, and sent into England.
3. Th' ambassadors from Norway, my good lord,\Are joyfully returned.
4. Therefore our sometime sister, now our queen,\Th' imperial jointress to this warlike state,\Have we (as 'twere with a defeated joy,\With an auspicious and a dropping eye,\With mirth in funeral and with dirge in marriage,\In equal scale weighing delight and dole)\Taken to wife.
5. I think it be no other but e'en so.
6. Is not this something more than fantasy?
7. It harrows me with fear and wonder.
8. I like thy wit well, in good faith.
9. Cudgel thy brains no more about it, for your dull ass will not mend his pace with beating.

2	0.34							
3	0.27	0.22						
4	0.35	0.28	0.31					
5	0.10	0.12	0.15	0.19				
6	0.05	0.12	0.03	0.19	0.16			
7	0.19	0.23	0.09	0.29	0.19	0.17		
8	0.06	0.17	0.23	0.21	0.14	0.09	0.18	
9	0.26	0.23	0.08	0.20	0.10	0.10	0.23	0.20
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Table 7: Similarity scores.

A.3 Similarity Scores of *Julius Caesar* 1.2.30-187

Character	Sentence	Max Similarity	Most Similar Sentence
Brutus	Not I.	NA	NA
Cassius	I pray you, do.	NA	NA
Brutus	I am not gamesome.	NA	NA
Brutus	I do lack some part Of that quick spirit that is in Antony.	0.236	I pray you, do.
Brutus	Let me not hinder, Cassius, your desires.	0.346	I do lack some part Of that quick spirit that is in Antony.
Brutus	I'll leave you.	NA	NA
Cassius	Brutus, I do observe you now of late.	0.431	Let me not hinder, Cassius, your desires.
Cassius	I have not from your eyes that gentleness And show of love as I was wont to have.	0.259	I'll leave you.

Cassius	You bear too stubborn and too strange a hand Over your friend that loves you.	0.297	I have not from your eyes that gentleness And show of love as I was wont to have.
Brutus	Cassius, Be not deceived.	NA	NA
Brutus	If I have veiled my look, I turn the trouble of my countenance Merely upon myself.	0.349	I have not from your eyes that gentleness And show of love as I was wont to have.
Brutus	Vexèd I am Of late with passions of some difference, Conceptions only proper to myself, Which give some soil, perhaps, to my behaviors.	0.365	Let me not hinder, Cassius, your desires.
Brutus	But let not therefore my good friends be grieved (Among which number, Cassius, be you one) Nor construe any further my neglect Than that poor Brutus, with himself at war, Forgets the shows of love to other men.	0.568	Let me not hinder, Cassius, your desires.
Cassius	Then, Brutus, I have much mistook your passion, By means whereof this breast of mine hath buried Thoughts of great value, worthy cogitations.	0.573	But let not therefore my good friends be grieved (Among which number, Cassius, be you one) Nor construe any further my neglect Than that poor Brutus, with himself at war, Forgets the shows of love to other men.
Cassius	Tell me, good Brutus, can you see your face?	0.681	Brutus, I do observe you now of late.
Brutus	No, Cassius, for the eye sees not itself But by reflection, by some other things.	0.468	Tell me, good Brutus, can you see your face?
Cassius	'Tis just.	NA	NA
Cassius	And it is very much lamented, Brutus, That you have no such mirrors as will turn Your hidden worthiness into your eye, That you might see your shadow.	0.628	Tell me, good Brutus, can you see your face?
Cassius	I have heard Where many of the best respect in Rome, Except immortal Caesar, speaking of Brutus And groaning underneath this age's yoke, Have wished that noble Brutus had his eyes.	0.574	Tell me, good Brutus, can you see your face?
Brutus	Into what dangers would you lead me, Cassius, That you would have me seek into myself For that which is not in me?	0.674	Let me not hinder, Cassius, your desires.
Cassius	Therefore, good Brutus, be prepared to hear.	0.696	Brutus, I do observe you now of late.
Cassius	And since you know you cannot see yourself So well as by reflection, I, your glass, Will modestly discover to yourself That of yourself which you yet know not of.	0.627	And it is very much lamented, Brutus, That you have no such mirrors as will turn Your hidden worthiness into your eye, That you might see your shadow.
Cassius	And be not jealous on me, gentle Brutus.	0.672	Therefore, good Brutus, be prepared to hear.

Cassius	Were I a common laughter, or did use To stale with ordinary oaths my love To every new protester; if you know That I do fawn on men and hug them hard And after scandal them, or if you know That I profess myself in banqueting To all the rout, then hold me dangerous.	0.352	But let not therefore my good friends be grieved (Among which number, Cassius, be you one) Nor construe any further my neglect Than that poor Brutus, with himself at war, Forgets the shows of love to other men.
Brutus	What means this shouting?	NA	NA
Brutus	I do fear the people Choose Caesar for their king.	0.498	I have heard Where many of the best respect in Rome, Except immortal Caesar, speaking of Brutus And groaning underneath this age's yoke, Have wished that noble Brutus had his eyes.
Cassius	Ay, do you fear it?	0.383	I do fear the people Choose Caesar for their king.
Cassius	Then must I think you would not have it so.	0.341	Not I.
Brutus	I would not, Cassius, yet I love him well.	0.6	Cassius, Be not deceived.
Brutus	But wherefore do you hold me here so long?	0.324	Brutus, I do observe you now of late.
Brutus	What is it that you would impart to me?	0.404	Into what dangers would you lead me, Cassius, That you would have me seek into myself For that which is not in me?
Brutus	If it be aught toward the general good, Set honor in one eye and death i' th' other And I will look on both indifferently; For let the gods so speed me as I love The name of honor more than I fear death.	0.493	I have heard Where many of the best respect in Rome, Except immortal Caesar, speaking of Brutus And groaning underneath this age's yoke, Have wished that noble Brutus had his eyes.
Cassius	I know that virtue to be in you, Brutus, As well as I do know your outward favor.	0.733	Therefore, good Brutus, be prepared to hear.
Cassius	Well, honor is the subject of my story.	0.543	If it be aught toward the general good, Set honor in one eye and death i' th' other And I will look on both indifferently; For let the gods so speed me as I love The name of honor more than I fear death.
Cassius	I cannot tell what you and other men Think of this life; but, for my single self, I had as lief not be as live to be In awe of such a thing as I myself.	0.375	Then, Brutus, I have much mistook your passion, By means whereof this breast of mine hath buried Thoughts of great value, worthy cogitations.
Cassius	I was born free as Caesar; so were you; We both have fed as well, and we can both Endure the winter's cold as well as he.	0.471	I do fear the people Choose Caesar for their king.
Cassius	For once, upon a raw and gusty day, The troubled Tiber chafing with her shores, Caesar said to me "Dar'st thou, Cassius, now Leap in with me into this angry flood And swim to yonder point?" Upon the word, Accoutered as I was, I plungèd in And bade him follow; so indeed he did.	0.542	Cassius, Be not deceived.

Cassius	The torrent roared, and we did buffet it With lusty sinews, throwing it aside And stemming it with hearts of controversy.	0.322	Were I a common laughter, or did use To stale with ordinary oaths my love To every new protester; if you know That I do fawn on men and hug them hard And after scandal them, or if you know That I profess myself in banqueting To all the rout, then hold me dangerous.
Cassius	But ere we could arrive the point proposed, Caesar cried "Help me, Cassius, or I sink!" I, as Aeneas, our great ancestor, Did from the flames of Troy upon his shoulder The old Anchises bear, so from the waves of Tiber Did I the tired Caesar.	0.631	For once, upon a raw and gusty day, The troubled Tiber chafing with her shores, Caesar said to me "Dar'st thou, Cassius, now Leap in with me into this angry flood And swim to yonder point?" Upon the word, Accoutered as I was, I plungèd in And bade him follow; so indeed he did.
Cassius	And this man Is now become a god, and Cassius is A wretched creature and must bend his body If Caesar carelessly but nod on him.	0.634	For once, upon a raw and gusty day, The troubled Tiber chafing with her shores, Caesar said to me "Dar'st thou, Cassius, now Leap in with me into this angry flood And swim to yonder point?" Upon the word, Accoutered as I was, I plungèd in And bade him follow; so indeed he did.
Cassius	He had a fever when he was in Spain, And when the fit was on him, I did mark How he did shake.	0.302	For once, upon a raw and gusty day, The troubled Tiber chafing with her shores, Caesar said to me "Dar'st thou, Cassius, now Leap in with me into this angry flood And swim to yonder point?" Upon the word, Accoutered as I was, I plungèd in And bade him follow; so indeed he did.
Cassius	'Tis true, this god did shake.	0.467	He had a fever when he was in Spain, And when the fit was on him, I did mark How he did shake.
Cassius	His coward lips did from their color fly, And that same eye whose bend doth awe the world Did lose his luster.	0.364	No, Cassius, for the eye sees not itself But by reflection, by some other things.
Cassius	I did hear him groan.	0.342	Were I a common laughter, or did use To stale with ordinary oaths my love To every new protester; if you know That I do fawn on men and hug them hard And after scandal them, or if you know That I profess myself in banqueting To all the rout, then hold me dangerous.
Cassius	Ay, and that tongue of his that bade the Romans Mark him and write his speeches in their books, "Alas," it cried "Give me some drink, Titinius" As a sick girl.	0.577	But ere we could arrive the point proposed, Caesar cried "Help me, Cassius, or I sink!" I, as Aeneas, our great ancestor, Did from the flames of Troy upon his shoulder The old Anchises bear, so from the waves of Tiber Did I the tired Caesar.

Cassius	You gods, it doth amaze me A man of such a feeble temper should So get the start of the majestic world And bear the palm alone.	0.347	His coward lips did from their color fly, And that same eye whose bend doth awe the world Did lose his luster.
Brutus	Another general shout!	NA	NA
Brutus	I do believe that these applauses are For some new honors that are heaped on Caesar.	0.508	I have heard Where many of the best respect in Rome, Except immortal Caesar, speaking of Brutus And groaning underneath this age's yoke, Have wished that noble Brutus had his eyes.
Cassius	Why, man, he doth bestride the narrow world Like a Colossus, and we petty men Walk under his huge legs and peep about To find ourselves dishonorable graves.	0.449	And this man Is now become a god, and Cassius is A wretched creature and must bend his body If Caesar carelessly but nod on him.
Cassius	Men at some time are masters of their fates.	0.421	You gods, it doth amaze me A man of such a feeble temper should So get the start of the majestic world And bear the palm alone.
Cassius	The fault, dear Brutus, is not in our stars, But in ourselves, that we are underlings.	0.576	But let not therefore my good friends be grieved (Among which number, Cassius, be you one) Nor construe any further my neglect Than that poor Brutus, with himself at war, Forgets the shows of love to other men.
Cassius	"Brutus" and "Caesar" — what should be in that "Caesar"?	0.698	Therefore, good Brutus, be prepared to hear.
Cassius	Why should that name be sounded more than yours?	0.29	If it be aught toward the general good, Set honor in one eye and death i' th' other And I will look on both indifferently; For let the gods so speed me as I love The name of honor more than I fear death.
Cassius	Write them together, yours is as fair a name; Sound them, it doth become the mouth as well; Weigh them, it is as heavy; conjure with 'em, "Brutus" will start a spirit as soon as "Caesar." Now, in the names of all the gods at once, Upon what meat doth this our Caesar feed That he is grown so great?	0.623	"Brutus" and "Caesar" — what should be in that "Caesar"?
Cassius	Age, thou art shamed!	NA	NA
Cassius	Rome, thou hast lost the breed of noble bloods!	0.466	I have heard Where many of the best respect in Rome, Except immortal Caesar, speaking of Brutus And groaning underneath this age's yoke, Have wished that noble Brutus had his eyes.

Cassius	When went there by an age, since the great flood, But it was famed with more than with one man?	0.33	For once, upon a raw and gusty day, The troubled Tiber chafing with her shores, Caesar said to me "Dar'st thou, Cassius, now Leap in with me into this angry flood And swim to yonder point?" Upon the word, Accoutered as I was, I plungèd in And bade him follow; so indeed he did.
Cassius	When could they say, till now, that talked of Rome, That her wide walks encompassed but one man?	0.439	Ay, and that tongue of his that bade the Romans Mark him and write his speeches in their books, "Alas," it cried "Give me some drink, Titinius" As a sick girl.
Cassius	Now is it Rome indeed, and room enough When there is in it but one only man.	0.525	Rome, thou hast lost the breed of noble bloods!
Cassius	O, you and I have heard our fathers say There was a Brutus once that would have brooked Th' eternal devil to keep his state in Rome As easily as a king.	0.64	"Brutus" and "Caesar" — what should be in that "Caesar"?
Brutus	That you do love me, I am nothing jealous.	0.541	And be not jealous on me, gentle Brutus.
Brutus	What you would work me to, I have some aim.	0.325	What is it that you would impart to me?
Brutus	How I have thought of this, and of these times, I shall recount hereafter.	0.322	I pray you, do.
Brutus	For this present, I would not, so with love I might entreat you, Be any further moved.	0.398	I would not, Cassius, yet I love him well.
Brutus	What you have said I will consider; what you have to say I will with patience hear, and find a time Both meet to hear and answer such high things.	0.301	Therefore, good Brutus, be prepared to hear.
Brutus	Till then, my noble friend, chew upon this: Brutus had rather be a villager Than to repute himself a son of Rome Under these hard conditions as this time Is like to lay upon us.	0.66	O, you and I have heard our fathers say There was a Brutus once that would have brooked Th' eternal devil to keep his state in Rome As easily as a king.
Cassius	I am glad that my weak words Have struck but thus much show of fire from Brutus.	0.651	Therefore, good Brutus, be prepared to hear.
Brutus	The games are done, and Caesar is returning.	0.517	"Brutus" and "Caesar" — what should be in that "Caesar"?
Cassius	As they pass by, pluck Casca by the sleeve, And he will, after his sour fashion, tell you What hath proceeded worthy note today.	0.347	He had a fever when he was in Spain, And when the fit was on him, I did mark How he did shake.
Brutus	I will do so.	NA	NA
Brutus	But look you, Cassius, The angry spot doth glow on Caesar's brow, And all the rest look like a chidden train.	0.584	And this man Is now become a god, and Cassius is A wretched creature and must bend his body If Caesar carelessly but nod on him.

Brutus	Calphurnia's cheek is pale, and Cicero Looks with such ferret and such fiery eyes As we have seen him in the Capitol, Being crossed in conference by some senators.	0.483	I have heard Where many of the best respect in Rome, Except immortal Caesar, speaking of Brutus And groaning underneath this age's yoke, Have wished that noble Brutus had his eyes.
Cassius	Casca will tell us what the matter is.	0.469	As they pass by, pluck Casca by the sleeve, And he will, after his sour fashion, tell you What hath proceeded worthy note today.

Table 8: Similarity scores of *Julius Caesar* 1.2.30-187.