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Eponymous Heroes and Protagonists – Character Classification in German-Language Dramas

Abstract

Within literary studies, there is a coexistence of different perspectives on protagonists, heroes or main characters in dramatic texts, which provide different definitions and strategies for the identification of those characters. Essentially, most of these definitions can be translated into a set of machine-readable character traits. Characters that correspond to these traits may then be classified as protagonists of the drama in question, and be distinguished from other characters (e.g. minor, secondary, supporting characters). Designing an applicable classification is the central objective of this article. Part of the problem lies in identifying eponymous characters, which is related to classifying protagonists, but involves its own presuppositions. We start by approaching both tasks from a theoretical perspective and suggest our own definition of a protagonist, which can be operationalized for the purpose of machinable classification but still draws on existing research in literary studies and follows its definitions. An attempt at manual annotation shows however that this type of definition possesses only a limited potential for intersubjectivity. Using a variety of features such as token count of characters, topic modeling and network sizes, we then train a random forest classifier that separates characters into protagonists and non-protagonists or eponymous heroes and non-eponymous heroes, respectively. The results show that protagonists and eponymous heroes are in fact reliably identifiable using simple features because of their usually prominent position within the play. Following the literary studies perspective, a conclusive analysis of the classification of specific characters using the examples of Die Verschwörung des Fiesko zu Genua, Maria Stuart, and Emilia Galotti makes clear that machine learning models offer interesting starting points for more in-depth reflections on protagonists and eponymous heroes.

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1 Introduction

Pointing to the polyvalence of literary texts, Steen Jansen drafts a theory of the dramatic form at the end of the 1960s, a theory that aims at an operational description of dramas and enlists the help of methods of linguistic analysis.¹ Thus, Jansen introduces the concept of the *situation*, which he conceives as "a separation of the textual level into parts that correspond to complete groups on the scene level".² Hence, two situations meet where characters appear or leave the stage, or where a change of setting takes place. A decade later, Manfred Pfister takes recourse to this type of operational definition to be able to undertake a quantitative gradation and classification of existing characters. Pfister finds fault with the fact that so far, according to the current state of research, subtler gradations can only be gauged intuitively.³ Pfister's theses, shaped by structuralist thought, have been gaining new attention in the wake of the cautious advent of digital methods into the research landscape of literary studies, e.g. as computational literary studies.⁴ We want to revive Pfister's ideas for a quantitative classification of dramatic characters here, trying to employ machine learning techniques to automatically classify the most important characters measured by their function within and for the dramatic plot. In this task, we follow a multidimensional approach that combines different features, such as the characters' stage presence, metrics of social network analysis,⁵ or topic modeling. By treating the problem of character categorization and gradation as a classification task, we may consider the influencing factors of the

¹Jansen, Steen: *Entwurf einer dramatischen Form*. In: Literaturwissenschaft und Linguistik. Eine Auswahl. Texte zur Theorie der Literaturwissenschaft. Vol. 2. Ed. by Jens Ihwe. Frankfurt a.M. 1973 [french original 1968], p. 215–245, here p. 215–218.

²Translated from ibid., p. 223. Jansen notes that the *situation* thus equals, "thus equals what is usually realized through the scene in plays of classic French theater." [Unless otherwise specified, direct quotes were translated by Claudia Rapp].

³See Pfister, Manfred: Das Drama. Theorie und Analyse. Munich ¹¹2001 [1977], p.226f.

⁴See e.g. Reiter, Nils and Marcus Willand: What are they talking about? A Systematic Exploration of Theme Identification Methods for Character Speech in Dramatic Texts. In: Digitale Literaturwissenschaft. DFG Symposium 2017. Ed. by Fotis Jannidis (forthcoming in 2019), Fischer, Frank et al.: To Catch a Protagonist: Quantitative Dominance Relations in German-Language Drama (1730-1930). In: Digitial Humanities 2018: Conference Abstracts. Mexico-City 2018, p. 193-201 and Murr, Sandra and Florian Barth: Digital Analysis of the Literary Reception of J.W. von Goethe's "Die Leiden des jungen Werthers". In: Digitial Humanities 2017: Conference Abstracts. Montréal 2017, p. 540-542.

⁵For a comprehensive introduction to social network analysis, seeTrilcke, Peer: Social Network Analysis (SNA) als Methode einer textempirischen Literaturwissenschaft. In: Empirie in der Literaturwissenschaft. Eds. Philip Ajouri, Katja Mellmann and Christoph Rauen. Münster 2013, p. 201–247.

character assignation and evaluate the results in a transparent fashion.

1.1 Outlining the problem: Schiller's dramatic heroines and heroes⁶

In the preface of his stage play *Die Verschwörung des Fiesko zu Genua (Fiesco's Conspiracy at Genoa)*, premiered in 1783, Friedrich Schiller characterizes the eponymous character as a *political hero*. This type of hero, Schiller explains, has specific implications for the presentation on stage, which is based largely on the impact of his actions:

If it is true that only feeling stirs feeling, then, it seems to me, the *political hero* would be no subject for the stage to the extent that he must subordinate his human self in order to be a political hero. It was therefore not my task to breathe into my story the living fire that prevails in a pure product of enthusiasm, but rather to spin a cold, sterile political drama from the materials of the human heart [...].⁷

With this, Schiller purposely juxtaposes *Die Verschwörung Fieskos zu Genua* with his debut work *Die Räuber* (The Robbers, 1781). The drama was published two years later and in it, the "victim of artifice and cabal" replaces the "victim of an excessive sensibility",⁸ which is to say the political hero replaces the "fiery spirit" or "fiery genius".⁹

Schiller's interpretation of the dramatic characters of Fiesco and Karl Moor as different types of "heroes" finds its equivalent in the characters' intra-fictional communication system: Karl Moor criticizes for example that the recent past – which he is frequently quoted as discrediting with terms like "ink-dripping seculum" and "flaccid century of the castrated"¹⁰ – was incapable of doing anything but recite the heroic deeds of antiquity. This dramatic spelling-out of poetological concepts of the hero can be found in other plays by Schiller as well, in most cases as figural ascription that explicitly label specific characters heroes or implicitly mark them as such. In *Maria Stuart (Mary Stuart*, 1800) for example,

⁶For the sake of improved readability, we use the generic masculine in the following. ⁷Original quote:

Wenn es wahr ist, daß nur Empfindung Empfindung wekt, so müßte, däucht mich, der politische Held in eben dem Grade kein Subjekt für die Bühne seyn, in welchem er den Menschen hintenansezen muß, um der politische Held zu seyn. Es stand daher nicht bei mir, meiner Fabel jene lebendige Glut einzuhauchen, welche durch das lautere Produkt der Begeisterung herrscht, aber die kalte, unfruchtbare Staatsaktion aus dem menschlichen Herzen herauszuspinnen [...].

Taken from: Schiller, Friedrich: Die Verschwörung des Fiesko zu Genua. Ein Republikanisches Trauerspiel. In: Id.: Werke. Nationalausgabe. Ed. Norbert Oellers and Siegfried Seidel. Vol. 4. Weimar 1983, p. 5–121, here p. 9f. [emphasis in the original, translation by Flora Kimmich / Open Book Publishers].

 $^{^{8}}$ Ibid., p. 9. [translation by Flora Kimmich / Open Book Publishers]

⁹Schiller, Friedrich: Die Räuber. Ein Schauspiel. In: Id.: Werke. Nationalausgabe. Ed. von Julius Petersen and Hermann Schneider. Vol. 3. Weimar 1953, p. 1–256, here p. 14 (lines 11 and 15).

 $^{^{10}}$ Ibid., p. 21 (line 9).

the wet nurse Hannah Kennedy characterizes the title figure Mary as a steadfast heroine of noble composure:

Melville, you are in error if you deem The Queen will need our succour, to meet death With firmness. She herself sets us A pattern of becoming resolution. Fear not, nor doubt that Mary Stuart knows To die as it befits a Queen and heroine.¹¹

Following Pfister, this would be an explicit, figural, extrinsic comment, which is voiced in dialogue with Melville, with Mary absent from the scene.¹² In *Don Karlos (Don Carlos*, 1787) on the other hand, the queen turns directly to her stepson Carlos, who laments his lack of heroic valor only a few lines before her words:¹³

Most sensibly I feel the nameless pang That rages in your bosom now. Your pain Is endless as your love; as endless too The glory is to vanquish it. Contend For it, young hero, with your might! The prize Is worthy of so high a combatant, Is worthy of the youth in whom there flows The virtue of so many ancestors Of royal blood.¹⁴

¹¹Original quote:

Melvil! Ihr seid im Irrthum, wenn ihr glaubt, Die Königin bedürfe unsers Beistands, Um standhaft in den Tod zu gehn! Sie selber ists, Die uns das Beispiel edler Fassung giebt. Seid ohne Furcht! Maria Stuart wird Als eine Königin und Heldin sterben.

Taken from: Schiller, Friedrich: Maria Stuart. Trauerspiel in fünf Aufzügen. In: Id.: Werke. Nationalausgabe. Ed. by Norbert Oellers. Vol. 9/1. Weimar 2010, p. 5–180, here p. 150 (lines 3375–3380) [translation by Anne Trelawny / British Museum].

 $^{12}\mathrm{See}$ Pfister: Das Drama (2001), p. 251–257.

¹³See Schiller, Friedrich: Don Karlos. Infant von Spanien. Ein dramatisches Gedicht. In: Id.: Werke. Nationalausgabe. Ed. by Lieselotte Blumenthal and Benno von Wiese. Vol.7/1. Weimar 1974, p. 359-645, here p. 393 (lines 666-669).

¹⁴Original quote:

Beklagenswerther, theurer Karl! Ich fühle – Ganz fühl' ich sie, die namenlose Pein, Die jetzt in Ihrem Busen tobt. Unendlich, Wie Ihre Liebe, ist Ihr Schmerz. Unendlich, Wie er, ist auch der Ruhm, ihn zu besiegen. Erringen Sie ihn, junger Held. Der Preis Ist dieses hohen, starken Kämpfers werth, In Wallensteins Tod (The Death of Wallenstein, 1800), it is a comment by Wallenstein himself that makes his characterization as a hero explicit. In Act 1, Scene 7, he quarrels with his own role, and the stage direction instructs him to act "fiercely moved".¹⁵ Wallenstein doesn't want to be a hero of words, who is capable at best to "warm" himself on his own thoughts:

Show me a way out of this impasse, helpful Powers, a way that I can travel, I Who am no champion with words, can't prattle Virtue or warm myself on thinking, willing, Can't grandly say to Fortune, turning her Back on me: Go! Who needs you? Show a way! If I'm stripped of effectiveness, I'm lost. I'll shy back from no sacrifice, no danger In order to avoid this last extreme.¹⁶

The quoted examples of intra-dramatic reflection of hero concepts illustrate that they constitute a poetological component of Schiller's plays – irrespective of their specific formulation. But why are these characters perceived as heroes? What distinguishes them, in reference to their relevancy for the action? What differentiates them from other (main) characters?¹⁷ The terminological pluralism in the literary debate of the hero concept has repeatedly been criticized by scholars and is in fact only of limited help in this respect. "We speak of the 'hero' of a work of literature if we want to speak of the

Taken from ibid., p. 397 (lines 755–763) [translation by John Towler / Nöldeke].

 ¹⁵Schiller, Friedrich: Wallenstein. Trauerspiel in fünf Aufzügen (1800). In: Id.: Werke. Nationalausgabe. Ed. by Norbert Oellers. Vol. 8/2. Weimar 2010, p. 9–151, here p. 26.

¹⁶Original quote:

Zeigt einen Weg mir an, aus diesem Drang, Hilfreiche Mächte! einen solchen zeigt mir, Den ich vermag zu gehn – Ich kann mich nicht, Wie so ein Wortheld, so ein Tugendschwätzer, An meinem Willen wärmen und Gedanken – Nicht zu dem Glück, das mir den Rücken kehrt, Großthuend sagen: Geh! Ich brauch' dich nicht. Wenn ich nicht wirke mehr, bin ich vernichtet; Nicht Opfer, nicht Gefahren will ich scheu'n, Den letzten Schritt, den äußersten, zu meiden;

Taken from ibid. (lines 521–530) [translation by Flora Kimmich / Open Book Publishers].

Des Jünglings werth, durch dessen Herz die Tugend So vieler königlicher Ahnen rollt.

¹⁷Compare the hero concept as brought forth by Steffen Martus, who doesn't conceive of the hero as the protagonist of the plot, but as a "culturally specific paradigm", as a liminal figure: "In the end, the hero exhibits human traits and remains linked to normalcy. At the same time, he transcends the average capacities, sometimes as far as to the superhuman, divine. In this tension, the hero often combines action and passion." Martus, Steffen: Transformationen des Heroismus. Zum politischen Wissen der Tragödie im 18. Jahrhundert am Beispiel von J. E. Schlegels "Canut". In: Politik – Ethik – Poetik. Diskurse und Medien frühneuzetlichen Wissens. Ed. by Torsten Burkard et.al. Berlin 2011, p. 15–42, here p. 15. See also p. 33.

respective main character, the protagonist, thus following the habituated language conventions that allow for a neutral, unbiased use of the word,"¹⁸ Bettina Plett describes the conventions of literary studies in her monograph *Problematische Naturen? Held und Heroismus im realistischen Erzählen*. The intersection and intermixing of different terms are already obvious in this brief subsumption: Hero, protagonist and main character seem almost mutually interchangeable. This becomes even more pronounced when Plett adds that this usage is merely "ostensibly neutral and unbiased."¹⁹ Because the hero is always contrasted with the antihero, the positive hero is distinguished from the negative one, plus there is a differentiation between strong, middling, and weak characters: "[A]II these periphrases have in common that they are not based on a uniform/consistent understanding of the term, let alone an overarching definition that is deemed eligible for consensus[...]."²⁰

1.2 Approach

Since a consensual definition of and differentiation between heroes, main characters, and protagonists is lacking, we want to start by picking up on and outlining the research positions that are relevant to us (2 "Hero and protagonist concepts in comparison"). The hero and protagonist concepts rampant in the history of drama and poetology can only be addressed selectively, however. This prepended definition of terms is vital for the project proper, which follows. In his structuralist-leaning standard work about drama, Manfred Pfister coins the terminology of "quantitative relations of dominance."²¹ What he means by that is a set of quantitatively ascertainable (i.e. quantifiable) criteria that allow for the classification and gradation of stage personnel, which enables for example the quantitative distinction between main and minor characters. Pfister names two criteria, which however need to neither complement each other nor coincide with the significance for the plot development of a character: one being the duration of stage time of a given character,²² the other the percentage or portion of a

¹⁸Plett, Bettina: Problematische Naturen? Held und Heroismus im realistischen Erzählen. Paderborn et al. 2002, p. 21. See also Immer, Nikolas: Der inszenierte Held. Schillers dramenpoetische Anthropologie. Heidelberg 2008, p.4. Especially for the 20th and 21st century, Immer postulates a watering down of the hero concept, which he says shows in the diversity or variety of the modern hero.

¹⁹Plett: Problematische Naturen? (2002), p. 21.

²⁰Ibid., p. 21f.

²¹Pfister: *Das Drama* (2001), p. 226.

²²Ibid. Franziska Schößler is less tentative when she claims: "Apart from the number of characters, their frequency of appearance is also significant, because it can be counted and decides their status as a main or minor character. In addition, the connections between characters are important, i.e. who addresses whom how frequently – this allocation is calculable as well." Thereby, she reduces the distinction between main and minor characters to a quantitative measure, namely the frequency of appearance. Schößler, Franziska: *Einführung in die Dramenanalyse*. Stuttgart et al. 2012, p. 93.

character's speech relative to the whole of the primary text.²³ Finer gradations, he claims, still lack a nuanced grammar of action that would be capable of operationalizing functional relations, too, such as correspondences or active plot steps,²⁴ which is why neither of the posited criteria can guarantee absolute reliability for the distinction between main and minor characters. More finely tuned gradations such as that between "episodic" and "minor" characters can only be estimated intuitively, not determined operationally. In the final analysis, Pfister advocates a multidimensional approach for a more precise formulation of the relations among the dramatis personae. Due to the lack of a satisfactorily operationalizable grammar of action, he leaves open what exactly this approach should look like.

In the following, we try to build on this idea of a both quantitative and multidimensional classification of the dramatis personae in an innovative way with the help of sophisticated digital analysis. We hope that this enables the reappraisal and review of the reflections of structural analysis as a method. By posing the categorization of the personnel as a classification task, we can pin down the exact influence of the experimental setup. This setup involves different (annotated) datasets, which include plays from different literary eras and genres, but also the specific selection of features that the model draws on for the classification. Moreover, the classification allows for an evaluation of the results (3 "Methods and experiments"). In this manner, we hope to gain new insights into the character modeling of dramatic texts. In conclusion, we want to look more closely at a few plays by way of example, so we can draw connecting lines from the classification results to specific characters and their plot function (4 "Analysis of individual characters").

2 Hero and protagonist concepts in comparison

The historical sketch presented in this part is meant to give an insight into the poetological development of the conceptions of heroes and protagonists, most notably in the 18th century. We want to begin at the very beginning, so to speak, namely with Aristoteles' theory of tragedy. It forms a central point of reference for the German theater particularly in the 18th century, and at the same time

²³We find similar wording earlier in Jansen: "The duration of the presence of a person can be measured by the number of situations in which they appear, but also by the 'amount of their speeches'." Jansen: Entwurf einer dramatischen Form (1973), p.225.

²⁴See Pfister: Das Drama (2001), p. 227, 406. As an example of an operational, but not differentiated enough typology of significance in terms of plot function, Pfister refers to Jansen's Entwurf einer Theorie der dramatischen Form. Jansen distinguishes between different types of characters, which he classifies according to their "presence" on the stage: He lists [1] characters that appear several times without being bound to other characters or character groups, [2] characters that appear several times but always in the presence of at least one other character, [3] characters that appear several times but require the presence of a specific other character, and [4] characters that do not appear more than once. See Jansen: Entwurf einer Theorie der dramatischen Form (1973), p. 225f.

shapes both the understanding and the differentiation of the concept of the hero. His *Poetics*, in parts both descriptive – in his examples and elucidations, Aristotle draws on plays and epics by Sophocles, Euripides, Homer, Aeschylus and others²⁵ – and normative, gained poetological relevance especially in the early classical era in France²⁶ because it contributed the terminological repertoire for contemporaneous plays.²⁷ Somewhat later, German-speaking poets and theater theoreticians translated and adopted Aristoteles' *Poetics*, too, which led to the creation of distinct, (norm-) poetological writings such as Johann Christoph Gottsched's *Critische Dichtkunst*, Gotthold Ephraim Lessing's *Hamburgische Dramaturgie*, or Johann Elias Schlegel's *Gedanken zur Aufnahme des dänischen Theaters*.

In the sixth chapter of his *Poetics*, Aristotle defines tragedy as the "imitation of an action that is serious, complete [...], effecting pity and fear."²⁸ To distinguish it from comedy however, the imitation is limited to good people.²⁹ The affects of pity and fear (*eleos* and *phobos*),³⁰ which according to Aristotle the tragedy aims for, are closely linked with the characters in the play. "The impact of the word," as Manfred Fuhrman reasons, Aristotle has bound "in the tragedy to the model of the hero who falls into misfortune through a mistake."³¹ Starting from the frame in which the action takes place, Aristotle thus penetrates "all the way to the heart of the matter, to the tragic hero."³² The tragic events, triggered by the hero's actions, need not only contain pity and fear but also elicit them.³³ Often, this

²⁵For the contextualization of Aristoteles' classical references and the history of poetics, see also the recently published introduction by Achim Geisenhanslüke. Geisenhanslüke, Achim: *Poetik. Eine literaturhistorische Einführung.* Bielefeld 2018, especially p. 39-42.

²⁶See Luserke, Matthias: Die Bändigung der wilden Seele. Literatur und Leidenschaft in der Aufklärung. Stuttgart and Weimar 1995, p. 81. Manfred Fuhrmann sees the Poetics as a "chiefly [...] descriptive examination." Fuhrmann, Manfred: Nachwort. In: Aristoteles: Poetik. Griechisch/Deutsch. Transl. and ed. Manfred Fuhrmann. Stuttgart 1994 [1982], p. 144-178, here p. 167. For the Italian poetical theorists of the 16th and 17th century, the Poetics was a normative authority. For German theater, the Poetics becomes the most important reference for the theory of tragedy in the 18th century. Johann Christoph Gottsched for example recognizes a normative theory of poetry, based on which new, rule-based poetics could find authority. Compare Alt, Peter-André: Tragödie der Aufklärung. Eine Einführung. Tübingen et al. 1994, p. 14-17.

²⁷See Fuhrmann: *Nachwort* (1994), p. 175.

²⁸Aristoteles, *Poetik.* Griechisch/Deutsch. Transl. and ed. Manfred Fuhrmann. Stuttgart 1994 [1982], p. 19.
²⁹See ibid., p 17.

³⁰Aristotle's "Apology of the tragic affect" has been discussed and interpreted in a notoriously controversial fashion in the modern age, not only with respect to the terminological precision of the translation introduced by Lessing – 'Mitleid' und 'Furcht' instead of the closer 'Jammern' and 'Schaudern', which would be pity and fear instead of lamenting/wailing and cringing/shuddering – but also in relation to the affective conception of the intended cathartic effect in general. Seggern, Hans von: [art.] Katharsis. In: Metzler Lexikon Ästhetik. Ed. Achim Trebeß, p. 192. For a cursory overview of the discussion, compare Zelle, Carsten: [art.] Katharsis. In: Reallexikon der deutschen Literaturwissenschaft. Vol. 2. Ed. Klaus Weimar. Berlin, New York 2007, p. 249-252.

³¹Fuhrmann: *Nachwort* (1994), p.175.

³²Ibid., p. 149.

³³This circumstance has been interpreted in different directions. The purification through and purgation of pity and fear can refer on the one hand to the audience but on the other to the characters in the play, too. Compare Greiner, Bernhard: Tragödie als Negativ des ,ästhetischen Zustands'. Schillers Tragödienentwurf jenseits des ,Pathetischerhabenen' in ,Maria Stuart'. In: Friedrich Schiller. Dramen. Neue Wege der Forschung. Ed. Matthias Luserke-Jaqui. Darmstadt 2009, p. 135-156, here p. 136.

error-prone hero is interpreted as a 'mixed character' or, in German, 'mittlerer Held' (i.e. halfway hero), who does not occupy either extreme, which is to say that he neither possesses an immaculate moral innocence nor can he be identified as an unambiguous villain.³⁴ Aristotle himself uses a process of elimination for his characterization of heroes, but always connects the hero's character to the effect of the peripeteia: He claims for example that showing an immaculate hero fall into misfortune is simply "hideous" and therefore does not elicit either pity or fear as an affect. Vice-versa, it mustn't be shown how "scoundrels experience a turn from misfortune to fortune."³⁵ What is left is therefore a hero

that stands between the [...] possibilities. That is the case with someone who does not experience a hard turn into misfortune despite his moral greatness and exceptional striving for justice, nor because of his badness and meanness either, but because of a flaw – someone who is highly esteemed and fortunate, such as Oedipus and Thyestes and other outstanding men from such lineage.³⁶

To evoke the intended effect in the tragedy's audience, the hero must resemble the spectator to a certain measure. This similarity, Fuhrman stresses, is "supreme regulation".³⁷ Only through it, the hero gains an identification-establishing role, which allows the spectator to feel pity and fear, to wail and to shudder. Since the tragedy aims to imitate better people than can be found in the real world however – the characters must be presented as righteous even if they are marked by character flaws – it is precisely this flaw that is essential for the moment of identification between spectator and theatrical figure.³⁸

Thus, the hero in an Aristotelian sense is subject to a set of rules that consists of only a few points and is based on the reflecting description of contemporaneous antique tragedies: It is the explicitly tragic hero who, following the postulate or probability and despite his good character, experiences

³⁴Compare for example Jeßing, Benedikt: Dramenanalyse. Eine Einführung. Berlin 2015, p. 35, or Schößler: Einführung in die Dramenanalyse (2012), p. 24. Bernhard Asmuth follows Lessing in this reappraisal of the hero as "estate-wise and morally average." Asmuth, Bernhard: Einführung in die Dramenanalyse. Stuttgart und Weimar 2009, S. 95. Additionally, Albert Meier sees the dissolution of the moral "contrasting of good and evil" in the halfway hero. Meier, Albert: Des Zuschauers Seele am Zügel. Die ästhetische Vermittlung des Republikanismus in Schillers "Die Verschwörung des Fiesko zu Genua". In: Friedrich Schiller. Dramen. Neue Wege der Forschung. Ed. Matthias Luserke-Jaqui. Darmstadt 2009, p. 35-55, here p. 37.

 $^{^{35}\}mathrm{Aristoteles},\ Poetik\ (1994),\ p.\ 39.$

³⁶Aristotle, *Poetics.* Chapters 7, 11, and 14 however clarify that a peripeteia from fortune to misfortune in not the only eligible case, but also vice-versa. Aristotle does not address the resulting implications for the hero and his flaw. Compare ibid., p. 27, 35-37, 43-45. Fuhrmann stresses that this flaw is an "errancy", not a "moral inadequacy/shortcoming" or a "bad character". Fuhrmann, Manfred: "Die Dichtungstheorie der Antike. Aristoteles – Horaz – 'Longin'. Eine Einführung." Düsseldorf and Zurich 2/2003 [1992], p.42.

 $^{^{37}\}mbox{Fuhrmann}, Nachwort$ (1994), p. 170.

³⁸See Aristoteles, Poetik (1994), p. 9, 41, and 49. Aristotle compares the writer of tragedies with the painter of portraits, who depict the individual features of the people they portray in their likeness but also better. Referring to Johann Gottlob Benjamin Pfeil and Christian Heinrich Schmid, Peter-André Alt claims however that the "heroes of the classical tragedy" are far less tangible for the audience than the characters of the bourgeois tragedy (*Bürgerliches Trauerspiel* in German). Alt: *Tragödie der Aufklärung* (1994), p. 167f.

disaster because of a flaw (hamartia).³⁹ This idea overlaps in some points with the Old Greek idea of protagonists: This term is derived from the Greek protagonistes, the first fighter, and was used to designate the first actor in Old Greek drama (accordingly, "Deuteragonist" and "Tritagonist" designate the second and third actor).⁴⁰ These days, 'protagonist' is mostly understood as neutral descriptor of the main character of a literary plot,⁴¹ which is intended to distinguish him on a descriptive-linguistic level from the term 'hero,' which is frequently meant to carry moral judgment or value. The opponent of the protagonist is the antagonist, though there can be several antagonists, depending on the end goal of the plot.⁴² The rank of a protagonist for a given literary text or the stage seems comparable to that of the Aristotelian hero. Hans Jürgen Wulf explains that "on the scale of character relevance," the protagonist takes an extreme position, with all other characters taking a back seat to his textual rank."⁴³ The establishment of one first actor, i.e. exactly one protagonist, thus coincides with the idea of the one flawed hero who plunges into disaster. The designation of protagonist is neutral in terms of value judgment, the one of hero in a classical tragedy expressly is not. Thus, speaking of a hero figure in drama is at least ambiguous.⁴⁴ In analogy to the protagonist, it may represent a neutral contentual category as a 'first person.' The character is then understood as the main character and main role of a play, independent of his social background, sex, and character traits, and is at the center of its plot.⁴⁵ Other languages know such a formal and neutral usage of the term hero as well: John Anthony Cuddon defines heroes as "principal male and female characters in a work of literature. In criticism the terms carry no connotations of virtuousness or honour. An evil man and a wicked woman might be the central characters, like Macbeth and Lady Macbeth."⁴⁶ However, the hero figure may also be understood in a

³⁹A woman depicted as too brave would be improbable, because inappropriate. Compare Aristotle: *Poetics* (1994), p. 47.

⁴⁰See Wulff, Hans Jürgen: Held und Antiheld, Prot- und Antagonist: Zur Kommunikations- und Texttheorie eines komplizierten Begriffsfeldes. Ein enzyklopädischer Aufriß. In: Weltentwürfe in Literatur und Medien. Phantastische Wirklichkeiten – realistische Imaginationen. Festschrift für Marianne Wünsch. Ed. Hans Krah and Claus-Michael Ort. Kiel 2002, p. 431-448, here p. 443. See also Platz-Waury, Elke: [art.] Figurenkonstellation. In: Reallexikon der deutschen Literaturwissenschaft. Vol. 1. Ed. Klaus Weimar et al. Berlin and New York 2007 [1997], p. 591-593, here p. 592.

⁴¹See Jannidis, Fotis: Figur und Person. Beitrag zu einer historischen Narratologie. Berlin 2004, p. 90 and 104. Jannidis sees a character's participation in the action/plot as decisive criterion for the distinction between protagonists and background figures.

⁴²See Platz-Waury: [art.] Figurenkonstellation (2007), p. 591.

⁴³Wulff: Held und Antiheld, Prota- und Antagonist (2009), p. 443.

⁴⁴See Jannidis: *Figur und Person* (2004), p. 105.

⁴⁵See Wilpert, Gero von: [art.] Held. In: Sachwörterbuch der Literatur. Stuttgart 7/1989, p. 365-366. Elke Platz-Waury opposes this idea. She does not see a completely neutral category in the hero, and that applies even more strongly to the heroine. See Platz-Waury: [art.] Figurenkonstellation (2007), p. 591. For a more detailed discussion of this and of the differentiation between main character and hero see Immer: Der inszenierte Held (2008), p. 50-58.

⁴⁶Cuddon, John Anthony: [art.] Hero and Heroine. In: Dictionary of Literary Terms and Literary Theory. 5/2014 [1977], p. 329.

way that involves value judgment; as a heroic character that represents accepted values and virtues, while being and staying an actional factor.⁴⁷ In this respect, Plett attests "the term 'hero' an inherent ambivalence",⁴⁸ since the allegedly neutral usage – protagonists may even be called heroes when they have nothing 'heroic' about them, and this goes mostly unquestioned – is countered by the general meaning of the word, "with its profound mythological, historical, religious, psychological, and social implications."⁴⁹ A certain interchangeability of the concepts, which concomitantly suggests a lack of clear discrimination in handling the terms, is also visible in their usage in literary studies: hero and protagonist are frequently used synonymously, the protagonist, though conceived as neutral, becomes a hero figure that presupposes certain values and vice-versa.⁵⁰

2.1 Heroes in the 18th century

A closer look at the reception of Aristotelian *Poetics* in the 18^{th} century shows however how differently the value-carrying properties and character traits of heroes may be conceived and construed. The dramatic hero's social background, frequently discussed under the term *Ständeklausel* ('estates-clause'), serves as an example and is spelled out only vaguely in Aristotle: While heroes enjoy prestige and fortune, and may stand out due to their "social status",⁵¹ what remains unanswered is the question whether this also refers to their social background or merely their moral values.⁵² Notwithstanding that, the early Enlightenment writers viewed the *Ständeklausel* as "absolutely binding", as Peter-André Alt states:⁵³ "The fact that the tragedy must present high-born personnel – [...] 'heroes and kings' – while comedy shows characters of low estate – 'private individuals' –, remains an iron law of the theory of poetry far into the 18^{th} century."⁵⁴ To support his statement, Alt refers to Gottsched's *Critische Dichtkunst*. In the tenth chapter, entitled *Von Tragödien und Trauerspielen*, Gottsched refers explicitly to Aristotle when he writes:

⁴⁷See Wulff, Held und Antiheld, Prota- und Antagonist (2009), p. 432-434.

⁴⁸Plett: Problematische Naturen? (2002), p. 10.

⁴⁹Ibid.

⁵⁰Exemplified by the following quote: "Only a bourgeois hero with flaws ensures that the tragedy realizes its moral purpose. The Aristotelian 'hamartia' is thus amplified by a class determination meant to optimize the tragic effect by guaranteeing the necessary similarity between tragic protagonist and theater audience." Alt: Die Tragödie der Aufklärung (1994), p. 168.

⁵¹Fuhrmann: Die Dichtungstheorie der Antike (2003), p.43.

⁵²See Aristoteles: Poetik (1994), p. 39 and Alt: Tragödie der Aufklärung (1994), p. 162f. Fuhrmann's and Alt's positions are not completely congruent in this point. While Fuhrmann sees at least the arrangement for a Ständeklausel in the Poetics – for example in the privileged social status of the hero – and links that to the extent of the hero's fall, termed 'Fallhöhe' in German, Alt sees the Ständeklausel spelled out only with/by the grammarians of late antiquity. Compare Fuhrmann: Die Dichtungstheorie der Antike (2003), p. 40–44.

 $^{^{53}}$ Alt: Tragödie der Aufklärung (1994), p. 165. 54 Ibid., 164.

With the Greeks thus, by the judgment of Aristotle, the tragedy had been brought to perfection [...]: because it had its purpose in awakening, through the misfortunes of the great, sadness, dread, pity and admiration in the spectators. [...] The poet thus wants to convey truths through the fables and prepare the audience, through the sight of such hard falls of the great of this world, for their own tribulations. For example Oedipus, one of the most famous tragedies of Sophocles, presents the miserable end this Theban king came to because of his despicable/hideous deeds/actions; although he had fallen into disaster almost through no fault of his own.⁵⁵

For Alt, the reference to the "greats of this world" is sufficient to identify a binding *Ständeklausel* in Gottsched's poetics. In fact, the example Gottsched invokes – Sophocles' *Oedipus Rex* – is also used several times by Aristotle to illustrate his remarks: for instance, as the model for an outstanding man who enjoys both esteem and fortune, while descending from one of the few lineages that are suitable for the material of the best tragedies anyway.⁵⁶ In the preface to his tragedy *Sterbender Cato* (Dying Cato), Gottsched varies the "greatness" of the hero, and the extent of his fall is created by Cato's virtuousness: "But Cato has become a regular hero of tragedy precisely because he was a very virtuous man [...]. He is admired, loved, venerated. And therefore, people wish him a favorable outcome for his things."⁵⁷

We do not mean to relativize the scholarship consensus reported by Alt. The *Ständeklausel* is of great significance for the plays of early Enlightenment.⁵⁸ Apart from Gottsched, he lists Johann Jacob Bodmer, Johann Jacob Breitinger, and Christoph Martin Wieland as further theoreticians who "leave little doubt that the tragedy requires exalted personnel."⁵⁹ Thus, Bodmer stresses particularly the difference between tragedy and comedy personnel:

⁵⁵Original quote:

Bey den Griechen war also, selbst dem Urtheile des Aristoteles, die Tragödie zu ihrer Vollkommenheit gebracht [...]: weil sie zu ihrer Absicht hatte, durch die Unglücksfälle der Großen, Traurigkeit, Schrecken, Mitleiden und Bewunderung bey den Zuschauern zu erwecken. [...] Der Poet will also durch die Fabeln Wahrheiten lehren, und die Zuschauer, durch den Anblick solcher schweren Fälle der Großen dieser Welt, zu ihren eigenen Trübsalen vorbereiten. Z.E. Oedipus, eins der berühmtesten Trauerspiele des Sophokles, stellt das klägliche Ende vor, welches dieser thebanische König um seiner abscheulichen Thaten halber, genommen; wiewohl er fast ohne seine Schuld darein gefallen war.

<sup>Taken from Gottsched, Johann Christoph: Versuch einer Critischen Dichtkunst: Anderer Besonderer Theil.
In: Id.: Ausgewählte Werke. Vol. 6/2. Ed. Joachim Birke and Brigitte Birke. Berlin and New York 1973 [3/1742], p. 312. Gottsched reinterprets Aristotle's observation that heroes must take an intermediate position, postulating that heroes "need neither be rather bad nor rather good." Ibid., p. 312f.
⁵⁶See Aristoteles, Poetik (1994), p. 39-41 and 47.</sup>

⁵⁷Gottsched, Johann Christoph: Vorrede. Sterbender Cato. Ed. Horst Steinmetz. Bibliographisch ergänzte Auflage. Stuttgart 2002 [1732], p. 5-18, here p. 17.

⁵⁸See Rösch, Gertrud M.: [art.] Ständeklausel. In: Reallexikon der deutschen Literaturwissenschaft. Vol. 3. Ed. Jan-Dirk Müller et al. Berlin and New York 2007 [1997], p. 494–496, here p. 495. Nevertheless, the "positive valuation of the hero loses some of its self-evident validity in the Enlightenment period." Martus: Transformation des Heroismus (2011), p. 15.

⁵⁹Alt: Tragödie der Aufklärung (1994), p.165.

These sentiments, which the tragedy should awaken, should further, in distinction from the comedy, have an impact on the life and the performances of political affairs of the country, inasmuch as the latter focuses on the behavior and changes in private life between peculiar characters.⁶⁰

Gottsched is more explicit elsewhere, too, when he states, again with recourse to King Oedipus: "He is the sort of prince the fable requires [...]."⁶¹ Rather, what should become evident is that the qualities and character traits of a dramatic hero are on the one hand always bound to their time and thus variable, that on the other hand the same heroic line and the identical dramatic personnel may even be used for different conclusions, i.e. that the "greatness" of the hero indeed leaves room for interpretation.

A little less than 20 years after Gottsched, Johann Elias Schlegel advocates for the coexistence of different dramatic characters in his reflections on the reception of Danish theater, *Aufnahme des dänischen Theaters*: Plays with personnel from low, middle and high estate should be equally part of the theater, guaranteeing an upward permeability for the audience.⁶² In the final analysis however, the tragedy still remains the preserve of the "deeds of exalted figures that excite the passions.⁶³ Johann Gottlob Benjamin Pfeil reaches a different verdict in his essay *Vom Bürgerlichen Trauerspiele* (On the bourgeois tragedy), published anonymously in 1755.⁶⁴ He places the bourgeois tragedy alongside the heroic tragedy as another genre of the theater.⁶⁵ His poetology thus opens up the tragedy for a bourgeois personnel.⁶⁶ He sees the merit of bourgeois tragedies chiefly in their effect, which "stirs our

⁶²Schlegel, Johann Elias: Gedanken zur Aufnahme des dänischen Theaters. In: Id.: Ausgewählte Werke. Ed. Werner Schubert. Weimar 1963, p. 559–585, here p. 569–573.

⁶⁰Original quote:

Diese Empfindungen, welche die Tragödie aufwecken sollte, müßten ferner, zum Unterschied der Comödie, ihren Einfluß auf das Leben und die Aufführungen in politischen Landes-Angelegenheiten haben, so wie diese ihr Auge auf das Verhalten und den Wandel im Privatleben, zwischen sonderbaren Personen, richtet.

Taken from Bodmer, Johann Jacob: Critische Betrachtung über die poetischen Gemählde der Dichter. Zurich and Leipzig 1741, p. 432.

⁶¹Gottsched: Versuch einer Critischen Dichtkunst. Zweiter Theil (1973), p. 318. See also Gottsched's remarks on genre distinction. Gottsched, Johann Christoph: Versuch einer Critischen Dichtkunst: Erster Allgemeiner Theil. In: Id.:: Ausgewählte Werke. Vol. 6/1. Ed. Joachim Birke and Brigitte Birke. Berlin and New York 1973 [1742], p. 216f.

⁶³Ibid., p. 569.

⁶⁴Alberto Martino proves that the anonymously published treatise is indeed Pfeil's work, which had long been surmised but never resolved. Compare Martino, Alberto: Geschichte der dramatischen Theorien in Deutschland im 18. Jahrhundert. Bd. 1. Die Dramaturgie der Aufklärung (1730–1780). Tübingen 1972, p. 419f.

⁶⁵See Pfeil, Johann Gottlob Benjamin (anon.): Vom bürgerlichen Trauerspiel. In: Eibl, Karl: Gotthold Ephraim Lessing. Miss Sara Sampson. Ein bürgerliches Trauerspiel. Frankfurt a.M. 1971, p. 173–189, here p. 183.

⁶⁶Lessing's Miss Sara Sampson came in the same year, but probably was not yet known to Pfeil when he wrote his essay. Compare Eibl, Karl: Gotthold Ephraim Lessing. Miss Sara Sampson. Ein bürgerliches Trauerspiel. Frankfurt a.M. 1971, p. 173.

heart much more strongly and is therefore also more likely to better it."⁶⁷ Because the misfortune that befalls a heroic main character is hard to relate to for the (bourgeois) theater audience, which is why compassion cannot be as strong: "We don't know the prototypes well enough to be able to distinguish their true greatness and weakness from the wrong."⁶⁸ To him, that is different in the bourgeois tragedy: The audience is able to find their own burden, but also their own vices in the characters and thus suffer along with the characters, and fear for themselves.⁶⁹ Pfeil here avoids speaking of the 'bourgeois' hero. Moreover, 'hero' for him is not a synonymous category with the main character of a play. That becomes evident when he distinguishes "bourgeois characters" from "characters of gods and heroes."⁷⁰ The halfway hero (*'mittlerer Held'*) is thus only a hero if he contains heroic traits in himself – and his social background in the sense of the *Ständeklausel* is one of these. A bourgeois character on the other hand is always already posited in the middle of society but isn't a hero in Pfeil's understanding.

Lessing however moves away from lofty tragedy and replaces it by the bourgeois tragedy. According to Jean-Marie Valentin, he saw "in the bourgeois tragedy the consummate modern realization of what he termed the 'true tragedy'."⁷¹ The maxim of tragedy derived from Aristotle, the arousal of pity and fear, is bound to the characters for Lessing, too, and is only achieved if the 'unfortunate' – Lessing here refers to the hero "of middle class"⁷² – is "of the same mettle as us."⁷³ What is crucial for this is the human qualities, which require a moral middle ground.⁷⁴ The demand for mixed characters arises both from Lessing's understanding of mimesis and the desired impact he ascribes to the tragedy.⁷⁵ The key term here is compassion (in German *Mitleiden*, literally 'suffering along with'), which is achieved only through identification with the 'unfortunate', i.e. through the fear that you could be similar to him.⁷⁶ Consequently, you thus no longer need authentic historical personnel, since the heroes' names

 $^{^{67}}$ Ibid.

⁶⁸Ibid.

⁶⁹See ibid., p. 183-185.

⁷⁰Ibid., p. 182.

⁷¹Valentin, Jean-Marie: Lessings ,Hamburgische Dramaturgie': Infragestellung oder Erneuerung des dramatischen Gattungssystems? In: Lessings Hamburgische Dramaturgie im Kontext des europäischen Theaters im 18. Jahrhundert. Ed. Monika Fick. Lessing Jahrbuch 41. Göttingen 2014, p. 49-59, here p. 53.

⁷²Lessing, Gotthold Ephraim: Hamburgische Dramaturgie. In: Ders.: Werke. Bd. 4. Dramaturgische Schriften. Hg. von Herbert G. Göpfert. München 1973, S. 229–720, S. 613. See also ibid., p. 574. Here, Lessing refers to Aristotle's *Poetics* and Christian Felix Weiß' *Richard III* when speaking of the hero whose misfortune is ought to evoke compassion and fright.

⁷³Ibid., p. 580f.

⁷⁴See Barner, Wilfried et al.: Lessing. Epoche – Werk – Wirkung. München 6/1998, p. 195. Lessing speaks of the "cliff of ideal characters." Lessing: Hamburgische Dramaturgie (1973), p. 630.

⁷⁵, The names of princes and heroes may lend a play pomp and majesty, but they don't contribute anything to the affection. The misfortune of those whose circumstances come closest to ours must naturally penetrate into our soul the deepest [...]." Lessing: Hamburgische Dramaturgie (1973), p. 294. Compare Barner et al.: Lessing. Epoche – Werk – Wirkung (1998), p. 194f.

⁷⁶See: Lessing: Hamburgische Dramaturgie(1973), p. 579-581.

alone cannot elicit compassion.⁷⁷

2.2 The protagonist as multi-dimensional character: classification of character complexity

Even this brief digest of the reception of Aristotelian Poetics in the 18th century in the context of the social background of the stage personnel was able to show how differently the poetologists of the time perceived heroic qualities and assessed their dramatic impact on the audience. Categories such as 'greatness,' 'virtuousness,' 'esteem,' or 'similarity,' which served as criteria for the search for the best possible halfway hero ('mittlerer Held'), created an astonishing historical and even synchronous variability of the hero concept that involved a value judgment. The interpretation of the Aristotelian hero definition illustrates this, because it was viewed partly as moral, partly as estatist, and partly as a combination of both aspects. There are further aspects that further increase the complexity of the hero concept, such as the differentiation between figure types and characters,⁷⁸ which already Lessing touches upon, referring to Denis Diderot when he distinguishes the stage personnel of tragedy and comedy.⁷⁹ A hero – but that applies likewise to the terms protagonist and main character – needs to be graspable as a character, i.e. possess an emotional life that marks him as an individual.⁸⁰ Franco Moretti – with his typically exaggerated phrasing – sees this as a tied-down dichotomy that predestines the way we think about literary characters: Main characters are characters proper, personalities, while minor characters are types.⁸¹ Characters like Hamlet or Faust however, who are conceptualized as characters and types simultaneously, make clear that the boundaries are often fluid.⁸² As part of the spatial turn, hero figures are ascribed another quality that sets them apart from the rest of the characters: Heroes are capable of crossing spatial-semantical boundaries. Jurij Lotman views such a boundary crossing as a literary event that to him is the smallest unit within the construction of the subject.83

The goal of the following classification tasks is to automatically distinguish and tag those characters that are the most relevant for the development of the dramatic plot. Plot relevancy is however an

⁷⁷See ibid., p. 294.

⁷⁸Edward M. Forster introduced the distinction between *round* and *flat characters* for this. Compare Forster, Edward. M.: Aspects of the Novel. San Diego et al. 1985 [1927], p. 67, 78.

⁷⁹See Lessing: *Hamburgische Dramaturgie* (1973), p. 633-641.

⁸⁰See Schößler: Einführung in die Dramenanalyse (2012), p.30.

⁸¹Moretti, Franco: Network Theory, Plot Analysis. In: Literary Lab Pamphlet 2 (2011), p. 1-12, here p. 5.

⁸²Anz, Thomas: *Textwelten*. In: Handbuch Literaturwissenschaft. Vol. 1. Gegenstände und Grundbegriffe. Ed. Thomas Anz. Stuttgart and Weimar 2013, p. 111–130, here p. 123.

⁸³See Lotman, Jurij M.: Die Struktur literarischer Texte. München 1972, p. 200-401.

open category, which remains largely non-specific. Therefore, we link it to the central dramatic conflict, which can either be unleashed by characters, actively or passively, or resolved by them. The resolution of the conflict can end in the attempt, but it can also have positive or negative consequences. For this task, the terminology of 'hero' seems unsuitable to us for several reasons. As delineated above, the dramatic hero is a complex, historically determined concept that undergoes a development in the course of literary history, changing the heroic qualities and character traits in significant ways. Throughout, the hero is closely bound to the tragedy and the poetological ideas of its norms.⁸⁴ In order to capture an as comprehensive number of most plot-relevant dramatic characters as possible, including decidedly negative heroes such as Shakespeare's Macbeth or Richard III, a value-neutral basis seems important to us. Value-oriented hero definitions would limit the play corpus to be examined to only a few literary styles or eras. Additionally, the automatic resolution requires the operationalization of emotional content, ideally even its progression dependent on the character presence. Admittedly, analysis techniques such as the Sentiment Analysis are not yet capable of delivering satisfactory results of such operationalizations.⁸⁵ A value-oriented hero definition might however build on the value-neutral foundation in the future. This would allow not just the comparison between plot-relevant and non-relevant characters, but also that of qualities and character traits of different plot-relevant characters across literary styles or eras.

At this point, we decided on a value-neutral tag that we label protagonist. We understand protagonists in a mostly presuppositionless way, namely as the main characters in a play, whose central plot relevancy either unleashes the plot or resolves it.⁸⁶ In this respect, we need to distinguish between protagonists that either actively govern the events of the plot or are the passive catalysts of the conflict. While for example *Prinz Friedrich von Homburg* in Kleist's eponymous play (1821, written as early as 1809/1810) actively triggers the conflict through his autonomous disregarding of the military chain of command, Lessing's *Emilia Galotti* is the *passive* trigger of the conflict, because she becomes the prince's object of affection when she is already engaged to be married to another. From a purely quantitative perspective, this can be tracked looking at the length of their respective speeches and stage presence. While Prince Friedrich drives the dramatic plot much more than Emilia does,

⁸⁴This may in part be due to the fact that we do not have a surviving second part of Aristotle's *Poetics*, which was supposed to deal with the comedy.

⁸⁵See Schmidt, Thomas, Manuel Burghardt, and Katrin Dennerlein: "Kann man denn auch nicht lachend sehr ernsthaft sein?" – Zum Einsatz von Sentiment Analyse-Verfahren für die quantitative Untersuchung von Lessings Dramen. In: DHd 2018. Konferenzabstracts. Köln 2018, p. 244–249.

⁸⁶Jannidis names two further criteria that set off the protagonist from the other characters: The protagonist changes in the course of the plot and "attracts the most complex reader reactions." Jannidis: *Figur und Person* (2004), p. 89.

she is chiefly the subject of the plot and thus also of the speeches of other characters. The example already indicates that the characters' sex is not an exclusion criterion for the definition/assignation as protagonist. While heroic deeds are almost automatically associated with male characters in a play – Aristotle frames that under the label of appropriateness⁸⁷ – the concept of the protagonist is not charged in gender-specific ways. The presuppositionless usage of the term protagonist also means that we move away from the Old Greek understanding as first actor. We do not limit the possible number of protagonists, but instead bind them to their central meaning for the dramatic conflict.⁸⁸ This also means that protagonists and antagonists will here be subsumed under the same term. This is useful if only because the antagonist is always determined dependent on the protagonist. Since protagonists are to be defined as value-neutral, the role of the antagonist is initially unassigned/indeterminate as well: He can thus be a positive or a negative opponent.⁸⁹

Our classification tasks refer to a concept that has been strongly integrated into literary studies research. Following the structuralist idea of quantitative dominance relations and contingent on the increasing digitalization of literary texts, the past few years have seen the development of several studies that aim at the automatic (sub-)classification of the literary personnel via formal criteria. Several research projects draw on Wladimir Propp's typologization for this. In his *Morphology of the Fairytale*, he distinguishes seven different character types and their plot functions.⁹⁰ In two of his Literary Lab pamphlets, Franco Moretti on the other hand uses social network analysis for a reconceptualization of dramatic characters. With the help of network views of Shakespeare's *Hamlet*, which he understands as a visual approximation of the dramatic plot, Moretti rejects the dichotomies he claims are inaccurate, namely protagonists – minor characters or characters – types, respectively.⁹¹ "[W]hat it asks for [...] is a radical reconceptualization of characters and of their hierarchy,"⁹² he postulates instead with the usual overstated pointedness, claiming that the emotional life or consciousness of the protagonist does

⁸⁷Immer stresses that the concept of heroines is exactly as old as that or male heroes, although it rests on the "adoption of decidedly masculine, heroic qualities and abilities." Immer: *Der inszenierte Held* (2008), p. 62.

⁸⁸See Platz-Waury: [art.] Figurenkonstellation (2007), p. 591f. See also Wulff: Held und Antiheld, Prot- und Antagonist (2009), p. 443. Jannidis on the other hand advocates for avoiding the term protagonist if the main character of a text (and his opponent) cannot be identified unambiguously. See Jannidis: Figur und Person (2004), p. 104.

⁸⁹According to Jannidis, in a way the term opponent already denotes a negative basic attitude however, which the recipient is supposed to take towards the antagonist. See Jannidis: Figur und Person (2004), p. 105.

⁹⁰See e.g. Finlayson, Mark A.: ,ProppLearner': Deeply Annotating a Corpus of Russian Folktales to Enable the Machine Learning of a Russian Formalist Theory. In: Digital Scholarship in the Humanities 32/2 (2017), p. 284-300. https://doi.org/10.1093/llc/fqv067 and Declerck, Thierry, Nikolina Koleva, and Hans-Ulrich Krieger: Ontology-Based Incremental Annotation of Characters in Folktales. In: Proceedings of the 6th Workshop on Language Technology for Cultural Heritage, Social Sciences, and Humanities (2012), p. 30-34. http://www.aclweb.org/anthology/W12-1006.

⁹¹See Moretti, Franco: Network Theory, Plot Analysis (2011), p. 4f.
⁹²Ibid., p. 5.

not play a vital role in his determination. Rather, Moretti views the centrality of characters within the network as the determining criterion:⁹³ "[T]he 'protagonist,' far from being a fundamental reality of dramatic construction, is only a special instance of the more general category of 'centrality'."⁹⁴ Even though Moretti links this centrality back to the functions of the characters, he does not seek to affiliate with the established terminology of literary studies. Rather, he seems to rely solely on the postulated potential of network-analytical measures:⁹⁵ "not the protagonist, improved, but an altogether new set of categories."⁹⁶ Mark Algee-Hewitt also uses network measures (*eigenvector centrality* and *betweenness*) centrality) for the analysis of dramatic characters, but contrary to Moretti, not for an examination of individual texts but for the literary-historical analysis of 3439 English plays between 1500 and 1920. Among other things, Algee-Hewitt's data strongly suggest that since the 17th century, the central function and position of the protagonist is shared by several characters in a play.⁹⁷ In their essay To Catch a Protagonist, Frank Fischer et al. choose a similar approach. In it, they examine the stage personnel of 465 German-language plays with the help of a multidimensional approach that combines five network measures with three countable measures: the number of words spoken by one character, the number of his speech utterances, and the number of scenes he appears in. Fischer et al. however find that the multidimensionality of their method leads to interesting shifts less with quantitatively dominant characters, but rather more with less primary 'middle characters.'⁹⁸ Fotis Jannidis et al. follow a different approach, attempting to identify the main characters in German-language novels with a classification task. Contrary to Moretti, they intend a reconnection to literary studies: "One of the related problems is the definition of an evaluation metric which connects the computational problem to literary concepts like 'main characters' and 'character constellation'."⁹⁹ These literary concepts are to be optimally formalized via different quantitative measures, e.g. on the basis of the frequency of the characters in the text, the length of their speeches, or the network metric weighted degree. As their gold standard, Jannidis et al. use manually annotated summaries of the novels, with the help of

⁹³See ibid., p. 5-9.

⁹⁴Moretti, Franco: "Operationalizing:" or, the Function of Measurement in Modern Literary Theory. In: Literary Lab Pamphlet 6 (2013), p. 1-13, here p. 8. [emphasis in the original].

⁹⁵Peer Trilcke and Frank Fischer speak of a new perspective on known subjects, which could supplement, enrich, or confuse traditional ideas. Compare Trilcke, Peer and Frank Fischer: Fernlesen mit Foucault? Überlegungen zur Praxis des ,distant reading' und zur Operationalisierung von Foucaults Diskursanalyse. In: Le foucaldien 2/1 (2016), p. 1-18, here p. 15. https://doi.org/10.16995/lefou.15.

 $^{^{96}\}mathrm{Moretti}:$ "Operationalizing" (2013), p. 9.

⁹⁷See Algee-Hewitt, Mark: Distributed Character: Quantitative Models of the English Stage, 1500–1920. In: Digital Humanities 2017: Conference Abstracts. Montréal 2017, p. 119-121.

 $^{^{98}\}mathrm{See}$ Fischer et al.: To Catch a Protagonist (2018), p. 193-201, esp. p. 199f.

⁹⁹Jannidis, Fotis u.a.: Comparison of Methods for the Identification of Main Characters in German Novels. In: Digital Humanities 2016: Conference Abstracts. Krakow 2016, p. 578–582, here p. 579.

which different rankings (count-based and by first mention) of the central characters can be created.¹⁰⁰ They attain values between 37% and 51% for their rank-based evaluation measure, which they created themselves. These values go up to 53% to 81% if ranking und coreference errors are ignored.



Fig. 2.1: Speech shares in Prinz Friedrich von Homburg and Emilia Galotti measured in tokens.

3 Methods and experiments

In this part, three experiments for the automatic recognition of protagonists will be presented and discussed. All three of them capture/conceive the task as a classification in which a given character must be assigned into one of two classes – protagonist or other character. Diverging from the usual procedure, we attempt to not conflate our annotations in such a way that a consistent and intersubjective gold standard results. Due to the complexity of the literary category and its dependence on interpretation, we understand the annotations here as valid and mutually independent ways of reading the text. Therefore, the experiments presented in the following use the datasets separately from each other (supplemented by a fourth, which will be introduced in experiment 2 3.3).

¹⁰⁰See ibid., p. 579f.



Fig. 2.2: Active and passive presence of Emilia and Prinz Friedrich, measured in scenes. A character is passively present only if he isn't active himself in this scene.

3.1 Experimental setup

Features For the classification of the characters, we formulated hypotheses about which features appear promising for the differentiation of protagonists and non-protagonists. These features are presented in the following:

- **Tokens**: This feature calculates/determines the number of tokens a character utters in the course of the whole play. A token is defined here as a *word* or a *punctuation mark*. In addition, the absolute token number is normalized according to the total length of the text, in order to allow comparisons between different plays.
- Centrality: Centrality¹⁰¹ denotes a subarea of graph theory tasked with identifying the most important nodes in a graph. For the following centrality features, we used a co-presence graph that represents which characters appear on stage together. Characters are represented in the network as nodes, their staged interaction as edges. Since a variety of plays with different-sized graphs are being compared, all following features were normalized according to the total number of nodes in the graph. This allows the comparison of plays with few and those with any

¹⁰¹Going back to Moretti, Franco: Network Theory, Plot Analysis. In: Literary Lab Pamphlet 2 (2011), p. 1-12. and Moretti, Franco: "Operationalizing:" or, the Function of Measurement in Modern Literary Theory. In: Literary Lab Pamphlet 6 (2013), p. 1-13.

figures. We assume that all features named in the following can contribute to the identification of protagonists:

- Degree: A simple measure that measures the number of edges of a node, i.e. asks with how many characters of the entire ensemble a given character appears together. The measure helps with the description of the social relations of the characters, measured in scenic copresence. Our hypothesis here is that protagonists have a large social network, are on stage with a large number of different characters, and thus possess a higher degree value.
- WDegree: In addition, weighted degree measures that characters cannot just appear together with a different number of people but also a different number of times. Thus, the nodes obtain a weight in the measure, representing how often a character is on stage together with another character. A high weighted degree value therefore shows that a character appears frequently together with other characters.
- Close: Closeness centrality finds the shortest path to a node from any other node in the graph. Closeness centrality therefore recognizes characters that are positioned in the center of the graph and can be reached via many different characters.
- Between: Like closeness, betweenness centrality makes use of the shortest path to a node but measures further how often a node (a character) was part of a shortest path. Betweenness centrality therefore shows whether a character connects possible subgroups as a link in a co-presence graph.
- Eigen Eigenvector centrality measures whether a character has connections to other 'important' characters. It is akin to Google's PageRank, which ranks a website more highly in the search results if other pages link to that page¹⁰² with many inbound links. This also means that a character becomes more important when he is scenically co-present with other important characters. This feature can help recognize non-protagonists, since some characters that are not central to the plot might never interact with the central characters.
- **Topic Model**: Via statistical methods, a topic model¹⁰³ locates clusters, i.e. groups of words in a text that belong closely together. These clusters can be interpreted as topics a text has available. The utterances of a character can thus be assigned to topics a character talks about. A

¹⁰²Named after Google's co-founder Larry Page.

¹⁰³See Blei, David M. et al.: Latent Dirichlet Allocation. In: Journal of Machine Learning Research 3 (2003), p. 993–1022.

probability value provides insight to what extent a character talks about which topic. The topic model we used was trained to analyze the entire corpus of dramas, three datasets with a total of 114 plays. The number of clusters is set at ten (T1-10). Thus, we get ten different topics into which the speech utterances of the characters are classified/divided. We assume that the topic model will find topics that are mainly reserved for protagonists, but also topics protagonists don't talk about.

- Actives und Passives: The presence of a character sheds light on how frequently a character speaks (active) or is the topic of a conversation (passive). Actives is the normalized number of scenes in which a character actively speaks. Passives is the normalized number of scenes in which a character is mentioned by other characters without being present. Since no co-referential information is present, only being mentioned by name can be taken into account here, not e.g. pronominal referrals.
- **lastAct**: Shows whether a character is part of the last act of a play. Our hypothesis here is that protagonists should be part of the dramatic conflict and its resolution, thus are more likely than non-protagonists to act in the last act.
- **nfig**: This is a prior in the Bayesian sense¹⁰⁴ and indicates how many characters a play has in total. The feature is meant to equalize uneven distributions in personnel, since the number of characters has a strong impact on the other features.
- Eras/genres: The respective eras and genres assigned to the plays will be used as prior as well. It is possible for a statistic model to make different decisions with regard to the protagonist affiliation of a character based on a play belonging to a certain era or genre. For example, protagonists are characterized differently in *Sturm und Drang* as in naturalism.

Name	Domain	Value range	Description
Tokens	Text	Real numbers, [0-1]	Token frequency normalized on the entire
			text.

Table 3.1: Overview of the features

 $^{^{104}\}mathrm{I.e.}$ in the sense of a probability distribution that is known before other observations are made.

Name	Domain	Value range	Description
Degree	Network relation	Real numbers, [0-1]	Number of edges that connect a character
			in a co-presence graph with other charac-
			ters.
WDegree	Network relation	Natural numbers	Weighted degree value; weights are mea-
			sured on the number of interactions bet-
			ween characters.
Close	Network relation	Real numbers, [0-1]	Measure for how quickly a character can
			be reached in a co-presence graph via any
			other character.
Between	Network relation	Real numbers, [0-1]	Measure for how strongly a character
			connects different groups in a co-presence
			graph.
Eigen	Network relation	Real numbers, [0-1]	Eigenvector centrality in a co-presence
			graph; shows how many important cha-
			racters a character connects.
T1-T10	Utterance content	Real numbers, [0-1]	Topic Model with 10 clusters, trained on
			the training plays.
Active	Stage presence	Real numbers, [0-1]	Number of scenes/appearances where a
			character speaks.
Passive	Stage presence	Real numbers, [0-1]	Number of scenes/appearances where a
			character is mentioned by name.
lastAct	Stage presence	Truth value	Whether a character is part of the last
			act.
nfig	Metadata	Natural numbers	Number of characters in a play.

Table 3.1 :	Overview	of the	features
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Name	Domain	Value range	Description
SD, BT, WK,	${ m Era}/{ m Genre}$	Truth Value	Era/genre from which the play derives,
POP, NAT,			namely Sturm und Drang, bourgeois tra-
WM, ROM,			gedy, Weimar classicism, popular plays,
AUF, VM			Naturalism, Vienna Moderne, Romanti-
			cism, Enlightenment, and era of Metter-
			nich.

Table 3.1: Overview of the features

Table 3.2: Distribution of annotations.

Annotation	# Plays	#Protagonists (%)	#Non-protagonists (%)	#Characters in total
A1	34	171 (16)	910 (84)	1081
A2	37	176(16)	928 (84)	1104
A3	36	106 (8)	1296 (92)	1402
TF	39	42(3)	$1513\ (97)$	1562

Table 3.3: Cohen's κ for different annotation combinations.

 Annotation combination	#Plays	Cohen's κ	
A1+A2	6	$0,\!83$	
A1+A3	6	$0,\!46$	
A2+A3	7	$0,\!43$	

Korpus All text data derives from TextGrid's digital library.¹⁰⁵ Linguistic processing was done with DramaNLP,¹⁰⁶ and i.a. the R-packet DramaAnalysis¹⁰⁷ was used for the extraction of text-based

 $[\]overline{105}$ https://textgrid.de/de/digitale-bibliothek.

 $^{^{106} \}rm https://github.com/quadrama/DramaNLP.$

 $^{^{107} \}rm https://github.com/quadrama/DramaAnalysis.$

features.

To be able to perform an automatic classification of protagonists in dramatic texts, we first need to compile data about which characters of a play actually constitute protagonists. To this end, four different datasets were compiled. Three annotators complied the datasets A1, A2, and A3, following uniform annotation guidelines. In the course of the annotation process it already became clear that despite identical guidelines, dramatic characters were being tagged following different criteria. The weight (weightiness) of individual characters for the plot and their influence on the central dramatic conflict seems to have been interpreted in different gradations of fineness. This is reflected particularly in the total number of protagonists the annotators assume for each play. Table 3.2 shows different features of those annotations. All annotated datasets comprise a comparable number of plays, which are each assigned to different literary eras or dramatic genres, respectively: Sturm und Drang (SD), Weimarer Klassik (WK, Weimar Classicism), Bürgerliches Trauerspiel (BT, bourgeois tragedy), Vormärz (VM, era of Metternich), Wiener Moderne (WM, Vienna Moderne), Aufklärung (AUF, Enlightenment), Romantik (ROM, Romanticism), Naturalismus (NAT, Naturalism) and Populäre Stücke (POP, popular plays).¹⁰⁸ Each era/genre contains roughly the same number of plays, with ten plays per era/genre on average. BT, SD, and WK were annotated parallelly by two annotators, while the plays of the other eras/genres were dealt with by only one annotator. It becomes apparent that the datasets A1 and A2 list approximately the same number of characters as protagonists (16% of all characters), while A3 categorizes fewer characters as protagonists (8% of all characters). A fourth dataset (TF, *Titelfiqur*, or titular character) comprises plays that have one or more characters in the title of the play, e.g. Lessing's *Emilia Galotti*. This procedure has the advantage that somewhat subjective decisions and thus, divergent annotations, can be avoided. For the TF dataset, we used the same plays derived from the above listed eras/genres.¹⁰⁹ In total, we end up with 42 titular characters¹¹⁰ from 39 plays, which equals 3% of all characters in TF.

Table 3.3 shows a list of the so-called inter-annotator-agreement (IAA), with whose help we can quantitatively assess how closely the annotators accord in their identification of protagonists. Since only two eras/genres were annotated parallelly, the IAA can only be calculated between six, respectively seven plays. This calculation uses Cohen's kappa.¹¹¹ Cohen's kappa measures the actual accordance

¹⁰⁸A list of all plays with assignment to the eras/genres can be found in the appendix. Although in many cases, this unambiguous positioning is problematic from a standpoint of literary studies, we decided to assign each play to exactly one era/genre, for purely pragmatic reasons.

 $^{^{109}\}mathrm{A}$ list of the plays included in TF can be found in the appendix.

¹¹⁰Three of the plays have two titular characters.

¹¹¹Cohen, Jacob: A coefficient of agreement for nominal scales. In: Educational and Psychological Measurement

of annotations between two annotators and then relates this value to an expectable probability of accordance. The result is a value between -1 and +1, with 0 signaling a random accordance and +1 a perfect accordance. The kappa value for the comparison of datasets A1 and A2 is relatively high at 0.8. This tells us that A1 and A2 frequently classify the same characters as protagonists. A comparison of A3 with the other two annotators on the other hand yields only a kappa value of 0.4. This indicates that annotator A3 frequently doesn't accord with the other two annotators in the tagging of characters.



Fig. 3.3: Feature distribution in relation to the two classes for the datasets A1, A2, A3, and TF. The scales on the x-axis represent the value range of the respective feature, the y-axis shows the respective classes (additionally distinguished in the graph by color).

^{20/1 (1960),} p. 37-46.

Distribution of features Figure 3.3 shows the quantitative distribution of features of the datasets in relation to the two target classes protagonist (P) or non-protagonist (C).

Flatly distributed areas within a feature signal only few characters of the class being allocated values, while peaks show that many characters of the class manifest values in this area. Staggered peaks signal that the feature is suitable to separate the two classes from each other. For example, the value peaks in A1 for the *passives* feature overlap, which means that protagonists and non-protagonists receive similar values for passives. On the other hand, the *eigen* feature in A1 shows the peak of class C in the low range close to 0, the peak of class P in the high range close to 1. The distribution of *eigen* is therefore potentially distinctive for the two classes and may be used to distinguish them by means of this feature.

Tokens is a strongly separating feature. As expected, non-protagonists show a low tokens value. In the figure, the blue curve shows a maximum of little more than 0. The orange curve on the other hand is flatter and reaches further to the right. That indicates that protagonists claim more speaking time than non-protagonists. Other features that can separate protagonists from non-protagonists are – as has been hinted at before – eigen and, to a certain degree also degree, wdegree, and close. They illustrate that protagonists take prominent positions in character network. Between as the third centrality feature is less unambiguous. This is on the one hand because the plays we used do not form enough character groups to allow the between measure to become truly effective. On the other hand, only very few characters get an identical between measure, which means the overview of all characters simply does not constitute a recognizable agglomeration. As will be shown however, the machine learning models we applied can still make use of this feature.

If you look at the features that operationalize the stage presence, *actives* and *lastAct* do in fact show a tendency to separate protagonists from the rest of the characters. With *lastAct*, it becomes apparent that in the last act, mainly protagonists appear, which makes using the feature seem fundamentally justified. However, it also becomes apparent that some non-protagonists are present in the last act of a play as well. In the final analysis, this is not surprising, since it's not to be expected that the final act of a play should be borne *exclusively* by protagonists. Still, this feature can serve as a strong prior to exclude characters that do not appear in the last act as protagonists. As the final feature of stage presence, *passives* shows a similar distribution of protagonists and non-protagonists, which may be because co-reference is not yet taken into account for the calculation of the *passives* value. Accordingly, characters only obtain a high value if they are referred to by name. Being mentioned by name is however at times contingent on the historical and genre conventions of character design. Whether factoring in co-referent mentions will have a positive effect on this feature, future studies will have to show.

The analysis of topic distribution illustrates that only one topic (T5) is frequently used in the character discourse of protagonists, while the other nine are far more prevalent with non-protagonists.

Evaluation In the following, we introduce different metrics with which the classification of the presented features can be evaluated, and the results compared. The most basal metric is **accuracy**. It specifies how many percent of data points were correctly classified. Accuracy employs a differentiation of faulty and correct observations. Those data points that were classified as belonging to a certain class and that actually belong to that class are **true positives** (TP). Those data points that were correctly classified as not belonging to that class are **true negatives** (TN). Analogously, those data points that were classified as belonging to that class though they do not belong to it are false positives, while **false negatives** are those that were classified as not belonging to the class though they do belong to it. This results in the following formula for accuracy:

$$Accuracy = \frac{TP + TN}{TP + TN + FP + FN}$$

The formula describes the number of correct observations relative to the number of all data points. An uneven distribution of classes however leads to one-sided results. If for example 80% of data points are distributed into class A and only the remaining 20% into class B, it is possible to end up with an accuracy of 80% if all data points were classified as belonging to class A. But if the goal is to correctly identify class B, an accuracy of 80% reflects a high result, albeit one that does not possess any informative value in relation to the classification task. Here, **precision**, **recall**, and **F1-score** can help, since they specify classification errors relative to the class. Precision is defined as

$$Precision = \frac{TP}{TP + FP}$$

and it states how many data points were in actually relevant for the respective class. Recall is defined as

$$Recall = \frac{TP}{TP + FN}$$

and it states how many data relevant points for a class were actually found. F1-score is an attempt to combine those two metrics and correlate them via the harmonic measure. The formula for F1 is:

$F1 = 2 \cdot \frac{Precision \cdot Recall}{Precision + Recall}$

F1 thus specifies how good the classification is if both precision and recall are taken into account and enhances the comparability of the results.

Classification methods For the machine classification method, we use the algorithm **Random Forest**¹¹² in all our experiments. It joins decision trees to an ensemble and calculates the parameters by means of mathematical regression. Random Forest is suitable for examining the decision-making properties more closely, since for example the individual, learned decision trees can be inspected. Moreover, the algorithm allows for the direct calculation of the weighting of properties.

For the implementation of the Random Forest, we used the **randomForest** package¹¹³ in combination with the **Caret** package,¹¹⁴ which are both part of the programming language **R**.¹¹⁵ Caret offers different possibilities for preprocessing and sampling. The data was calibrated with the methods "center" and "scale," and sampled with the **SMOTE**¹¹⁶ method while training. SMOTE equalizes uneven distributions in the class distributions and thus ensures that certain classes are not over- or underrepresented. Since protagonists and non-protagonists are distributed highly unevenly in terms of numbers, this is necessary to ensure that the ML model does not assign all characters to the majority class. The datasets were divided into ten equally-sized blocks while training (10-fold cross-validation), which is meant to avoid a random division of data in training part and test part distorting/falsifying the results too strongly. All features were used as described above.

3.2 Experiment 1

In the first experiment, we train three different model on the annotations A1 to A3.

¹¹²Ho, Tin Kam: Random Decision Forests. In: Proceedings of the 3rd International Conference on Document Analysis and Recognition. Montréal 1995, p. 278-282, and Breiman, Leo: Random Forests. In: Machine Learning 24/2 (2001), p. 5-32.

 $^{^{113} \}rm https://cran.r-project.org/web/packages/randomForest/index.html.$

¹¹⁴https://cran.r-project.org/web/packages/caret/.

¹¹⁵https://www.r-project.org/.

¹¹⁶Chawla, Nitesh V. u.a.: SMOTE: Synthetic Minority Over-sampling Technique. In: Journal of Artificial Intelligence Research 16 (2002), p. 321-357. https://arxiv.org/pdf/1106.1813.pdf.

		Protagonist		Noi	Non-Protagonist			
	Data	Precision	Recall	F1	Precision	Recall	F1	Accuracy
iity ine	A1	-	$0,\!00$	-	$0,\!84$	1,00	0,91	0,84
Majon 3aseli	A2	-	$0,\!00$	-	$0,\!84$	$1,\!00$	$0,\!91$	$0,\!84$
	A3	-	$0,\!00$	-	$0,\!92$	$1,\!00$	$0,\!96$	$0,\!92$
IS INE	A1	0,72	$1,\!00$	0,84	1,00	$0,\!93$	$0,\!96$	0,94
loken 3aseli	A2	0,70	$0,\!99$	$0,\!82$	1,00	$0,\!92$	0,96	$0,\!93$
	A3	$0,\!44$	$1,\!00$	0,61	1,00	$0,\!90$	$0,\!95$	$0,\!91$
Ш	A1	$0,\!84$	$1,\!00$	0,91	1,00	$0,\!96$	$0,\!98$	$0,\!97$
landc	A2	0,80	$1,\!00$	$0,\!89$	$1,\!00$	$0,\!95$	$0,\!98$	$0,\!96$
	A3	$0,\!51$	$1,\!00$	$0,\!68$	1,00	$0,\!92$	$0,\!96$	$0,\!93$

Table 3.4: Classification results for the three gold standards and baselines.

Table 3.4 shows the classification results. To test how significant the results of the classificatory are, we further implemented so-called baselines. Baselines are classifications that, in contrast to elaborate features, are based on simple procedures and provide a benchmark for what values a classificatory should be capable of reaching at the minimum.

The first baseline is based on the majority class (A(1-3)MajorityBL) and is calculated by choosing the class that provides the majority, in each classification decision. Majority baselines are particularly effective with unevenly distributed classification problems in which one class possesses a clear majority. In the present case, classifying all characters as protagonists would therefore assign the majority of characters correctly and label only the actual protagonists wrongly. Consequently, the accuracies are already quite high, with 84 to 92%. Precision and recall of the evaluation show however that no protagonist was identified, which is in keeping with the definition of the baseline.

To gain a sense of the complexity of the protagonist identification, a second baseline (A(1-3)TokensBL) that uses only one feature, namely the *tokens* one, was therefore implemented. The hypothesis behind this is that the *tokens* feature should be highly distinctive, because we assume that the character discourse of protagonists claims a much larger part of the whole text than that of non-protagonists. Equipped only with the information from the *tokens* feature, the randomForest model reaches an accuracy between 91 and 94%. With the *tokens* feature, the model is able to achieve better

results for A1 and A2 than the majority baseline. This suggests that the model already recognizes certain structures in the data that go beyond mere guessing or simple heuristics. For A3 on the other hand, the classification stays a little behind the majority baseline, with 91% accuracy. For this dataset, the model tends towards overgeneration. It learns structures that cannot be generalized. This becomes apparent when you look at the results of precision and recall: all characters the system classifies as non-protagonists were in fact non-protagonists (precision (C) of 100%); inversely, (almost) all protagonists were found (recall (P) between 99 and 100%). The system however tends to classify characters that are not annotated as protagonists as protagonists (precision (P) of merely 44 to 72%). Two things can be inferred from that:

- 1. The tokens baseline alone enables the model to achieve better classification results than the majority baseline. When the non-class makes up such a large proportion/share as it does here, ML models frequently tend to align with/adapt to the majority baseline and label all cases as non-class. We do not see this type of phenomenon at play here. The model obviously learned something about protagonists that causes it to tag certain characters against the majority class.
- 2. The model overgeneralizes the protagonist class and wrongly classifies too many characters as protagonists. This suggests that there are characters that speak a lot relative to the total quantity of characters but are not in fact protagonists of the play.

Since the two baselines already yield strong results, we need to verify whether a model trained with all the available features is capable of yielding better results at all. As can be inferred from table 3.4, the system (A1-3) is capable of surpassing all values of the *tokens* baseline or achieving 100% recall (P) and precision (C) as well. We can conclude from this that taken together, all features possess an informative surplus value vis-à-vis the mere speaking time of a character.¹¹⁷ Moreover, it can be inferred that to a certain degree, the data and features contain and map information that enable us to identify the protagonists of a play quite reliably. The system still makes some mistakes though. Characters are classified as protagonists although they were not annotated as such. This suggests that the currently employed features are not yet capable of comprehensively distinguishing protagonists and their qualities from other characters.

3.3 Experiment 2

¹¹⁷This corroborates earlier studies. See e.g. Reiter, Nils et al.: *Detecting Protagonists in German Plays around* 1800 as a Classification Task. In: Proceedings of the EADH 2018. Galway 2018, to appear.

	Precision (TF)	Recall (TF)	F1 (TF)	Precision (C)	Recall (C)	F1 (C)	Accuracy
TFMajorityBL	-	0,00	-	0,97	1,00	0,98	0,97
${ m TFT}okens { m BL}$	$0,\!38$	1,00	$0,\!55$	1,00	$0,\!95$	$0,\!97$	$0,\!95$
TF	$0,\!46$	1,00	$0,\!63$	1,00	$0,\!96$	$0,\!98$	$0,\!96$

Table 3.5: Classification results for the titular characters and baselines.

Since the annotation of protagonists is dependent on the assessment of the annotators to a certain degree, a second experiment is meant to illustrate whether a ML model with the given features is also capable of recognizing titular characters (TF). The setup of the experiment stays the same as described in 3.2, but now the system is trained and tested on the dataset TF. Tabelle 3.5 shows the results. As before in 3.2, the system is capable of making sensible predictions that go beyond heuristics and baselines. On the whole, the classification results are a little weaker, which can be explained however by the setup: Through the classification of titular characters, the model implicitly still learns something about protagonists, but does not have any information about whether a protagonist is (or rather, happens to be) mentioned in the title or not. Thus, the model classifies as eponymous characters which human annotators would classify as protagonists, but which are not mentioned in the title. From this perspective, the classification task is far more difficult than the one in experiment 1. Despite this, the model is capable of making good predictions. This once again suggests that the employed features are useful approximations of the qualities of protagonists.

3.4 Experiment 3

	Precision (P)	Recall (P)	F1 (P)	Precision (C)	Recall (C)	F1 (C)	Accuracy
A1oTokens	$0,\!82$	$0,\!98$	$0,\!89$	1,00	$0,\!96$	$0,\!98$	0,96
A2oTokens	0,78	$1,\!00$	$0,\!88$	1,00	$0,\!95$	$0,\!97$	0,96
A3oTokens	$0,\!51$	$1,\!00$	$0,\!67$	1,00	$0,\!92$	$0,\!96$	$0,\!93$
TFoTokens	$0,\!37$	$1,\!00$	$0,\!54$	1,00	$0,\!94$	$0,\!97$	$0,\!95$

Table 3.6: Classification results without *tokens* features. For the sake of simplicity, P here stands for the classes *protagonist* and *titular character*.

In a final experiment, the actual predictive efficiency of the *tokens* feature shall be tested. To this end, all features **except** for the *tokens* feature are employed for the training. The appertaining results can be found in table 3.6. It becomes apparent that a model without the tokens feature makes better predictions (in part) than a model that uses only the *tokens* feature. The results fall slightly behind those of the full system however, which includes all the features. We can conclude that the *tokens* feature and the totality of the remaining features each capture similar information, which however cover complementary patterns in part.

3.5 Discussion

The experiments were able to show that the *tokens* feature possesses a high predictive efficiency for the classification of protagonists. But they also make clear that there are other features that, when combined, possess a similar predictive efficiency as the *tokens* feature, and that offer a surplus value when united with *tokens*, which *tokens* on its own does not cover. In the following, we want to examine what role the individual features played in the classification process.

Feature importance¹¹⁸ is a method that tries to illustrate, as transparently as possible, how an ML algorithm makes decisions, i.e. which features have contributed to the classification to what extent. To this end, the performance of the model is systematically compared if one of the features is omitted. The potential decrease in predictive efficiency equals the relative importance of the respective feature.

Figure 3.4 shows the feature importance for the four main models A1, A2, A3, and TF. As could be expected, the *tokens* feature has the highest predictive efficiency. Depending on the dataset however, several topics, as well as presence and centrality features contribute to the performance. Here, A2 is comparatively strongly dependent on the *tokens* feature, while the other features barely have any influence in this case. The protagonists of the plays in A2 thus seem to contrast strongly with the other characters through the length of the character discourse. On top of that we can see that *actives* and *passives* often do not play a weighty role in the classification. Since *actives* in particular is supposed to correlate with *tokens* to a certain degree, it seems reasonable to assume that the speaking time of a character is a better indicator for the classification of protagonists than the mere presence on stage. Knowledge of the eras/genres is rarely ever decisive for whether the model recognizes a character as protagonist or not. Only the literary movement of Sturm und Drang in A1 and A2 shows a relatively high feature importance. This suggests that Sturm und Drang plays exhibit certain characteristics that

¹¹⁸See Breiman, Leo: Random Forests. In: Machine Learning 24/2 (2001), p. 5-32.



Fig. 3.4: Relative feature importance of the models A1, A2, A3, and TF.

influence the protagonist classification.¹¹⁹ Overall, the Sturm und Drang plays tend towards relatively unambiguous protagonists who, on a quantitative level, strongly contrast with the rest of the character ensemble, above all with regard to the tokens. This applies in particular to Guelfo in Klinger's *Die Zwillinge*, Götz in Goethe's *Götz von Berlichingen*, and Fiesco in Schiller's *Die Verschwörung des Fiesko zu Genua*.

In the overall view, we can recognize a comparable idea of the feature importance for the four models: *tokens* is the most important feature throughout, followed by topic models, presence and centrality features in various constellations. Eras/genres have the lowest influence on the classification This shows that the classification generates stable results, even though the plays of the models were taken from different literary eras and genre traditions and were written by authors that favor very diverse linguistic styles (e.g. versified or in prose) and forms of dramatic presentation (e.g. closed or open form).¹²⁰ We can thus conclude that the employed features can map the qualities of protagonists rather reliably.

4 Analysis of individual characters

In the following, we want to reproduce/trace the presented classification results in greater detail with the aid of several examples. We confine ourselves to three plays with eponymous characters: Schiller's *Die Verschwörung des Fiesko zu Genua* and *Maria Stuart* as well as Lessing's *Emilia Galotti*.

Here, we rely on our fourth dataset (TF) and the associated model, which is meant to classify eponymous characters. The chiefly descriptive observations take the form of a workshop report and are based mainly on the structure of the plays. The classification also includes a topic model, but the ten learned topics are only interpretable to a limited extent and hardly provide any conclusions as to the semantics of the character discourses. The feature analysis in figure 3.3 thus indicates that only T5 is a positive differentiator for the labeling as an eponymous character or protagonist. The twenty most probably terms of T5 do not include any semantics-bearing words.¹²¹ The terms are also often part

¹¹⁹For now, we can only speculate what exactly these characteristics look like. The plays in our corpus associated with Sturm und Drang are marked by a diverse structure. The number of characters varies between nine and 70, the number of scenes between five and 75. See also Reiter, Nils und Marcus Willand: Poetologischer Anspruch und dramatische Wirklichkeit: Indirekte Operationalisierung in der digitalen Dramenanalyse. Shakespeares natürliche Figuren im deutschen Drama des 18. Jahrhunderts. In: Quantitative Ansätze in den Literatur- und Geisteswissenschaften: Systematische und historische Perspektiven. Ed. Toni Bernhart et al. Berlin, Boston 2018, p. 45-76, here esp. p. 54-62.

¹²⁰See Klotz, Volker: Geschlossene und offene Form im Drama. München 14/1999 [1960].

¹²¹The 20 most probable terms of T5 are: "ich", "und", "die", "nicht", "der", "ist", "zu", "-", "das", "Ich", "in", "so", "den", "dem", "es", "ein", "mich", "sie", "Sie", "er".

of other topics, too. The most probable word in T5 for example, "ich," is listed far towards the front in three other topics as well, while "and" is listed similarly in six. The remaining topics do include a few semantic expressions, but these are limited to addresses, information on the social rank or status of the character, or occupational titles.¹²² A future task will consist in better tracking the learning of the topics and optimizing it for the semantic interpretability, without limiting the efficiency of the classification in the process.

To be able to track the contribution of individual features to the classification result, we make use of the implementation of a Shapley analysis¹²³ of the R-package iml^{124} (Interpretable Machine Learning). This analysis goes back to the mathematician Lloyd Shapley and reinterprets the features of an ML model as players according to game theory,¹²⁵ which allows for the contribution of each feature to be approximated with the Shapley coefficient ϕ (phi) as a "profit distribution."¹²⁶ The resulting graphs show a listing of all features with their absolute values on the y-axis and the corresponding phi value on the x-axis. A positive phi value illustrates that the respective feature has contributed to the classification of the character as eponymous. The opposite applies to a negative value of the feature, which indicates that the feature was processed as a property of non-eponymous characters. A higher phi value equals a higher *relative* importance of the feature in the classification. For better readability, the coordinate systems are not set to a fixed scale. When comparing several Shapley graphs, you therefore need to bear in mind that the x-axis may show different scales. In figure 4.7 for example, Fiesco's *tokens* feature with a phi value of approximately 0.45 contributed a lot more to the classification than the T8 feature for Verrina, which has a phi value of only 0.09.

In reference to the classification however, the results of the Shapley analysis should be interpreted with a measure of caution. Because features can interact with each other, an identical feature value for two characters does not necessarily mean that the phi values of this feature must accord as well. Regardless of whether an individual phi value actually maps the classificatory reality or not, the comparability between characters and plays exists in principle, because the same method was used for all data points. This therefore means that we can in fact work out trends between characters and plays on the basis of the features.

 124 https://cran.r-project.org/web/packages/iml/index.html.

¹²²E.g. "Herr", "König", "Königin", "Vater", "Narr", "Graf", "Majestät", "Schulmeister", "Mutter", "Tochter", "Sohn", "Doktor".

¹²³Shapley, Llyod S.: A value for n-person games. In: Contributions to the Theory of Games. Vol. 2. Ed. H. W. Kuhn and A. W. Tucker. Princeton and New Jersey 1953, p. 307-317.

¹²⁵A mathematical theory that attempts to model interacting agents and decisions.

¹²⁶For more details, see e.g. https://christophm.github.io/interpretable-ml-book/shapley.html

4.1 Fiesco as a prototype of dominant titular characters?

Schiller's Die Verschwörung des Fiesko zu Genua is one of the few plays in our corpus (TF) for which the automatic classification tags only a single character of the play as eponymous. The result therefore suggests that Schiller conceptualized this eponymous character Fiesco as a 'prototypical' protagonist in the sense of the main character that is unambiguously central for the plot of the play.¹²⁷ The decisive factor for this is particularly the number of words spoken by Fiesco, which the Shapley graphs in figure 4.7 illustrate. Hence, the classification utilizes chiefly one of the two criteria of quantitative dominance mentioned by Pfister. Figure 4.5 sets the amount of Fiesco's character discourse in relation to six other characters of the play. The graph illustrates the speech shares of those seven characters that are, measured by the number of their spoken words in the course of the play, the most important ones. In 326 speech utterances, Fiesco utters a total of 11,651 tokens. Fiesco's wife Leonore and the republican Verrina, who follow Fiesco in this ranking, only exhibit 3561 and 3358 tokens, respectively. Fiesco thus noticeably stands out from the character ensemble. The co-presence table in figure 4.6 supports this observation. Granted, with Leonore, Verrina, the Moor Huley Hassan, Gianettino Doria, and Bourgognino, there are five other figures that are present in all acts, but none of them to such a marked extent as the titular character Fiesco. He is actively part of the action on stage in 39 out of a total of 75 scenes. On top of that, he is the subject of the dialogues of other characters in another 24 scenes. Verrina and the co-conspirator Bourgognino on the other hand are an active part of the plot in only 16 scenes, Lenore in a mere eleven. The degree value of 0.81 also underlines¹²⁸ how dominant the titular character was designed, at least according to quantitative measures: Fiesco appears on stage together with 35 of the 43 remaining characters of the play at least once.¹²⁹ Consequently, Fiesco seems to be the undisputed protagonist of the play, though as the leader of the conspirators, he is not a positive hero, as Albert Meier stresses: "With Fiesco, it becomes clear in the end that he was never interested in Genoa's freedom but always solely in his own magnitude."¹³⁰ This is already set up in Fiesco's personality: As a "clandestine planner and strategist", "fabricated façade and actual intentions" stand ambivalently side by side in him.¹³¹ While the hero identification that involves value judgments

¹²⁷Compare Jannidis: Figur und Person (2004), p. 104f.

¹²⁸See figure 4.7. To create a comparability across different plays, the values are normalized according to the number of characters in a play.

¹²⁹Qualitatively, Fiesco seems dominant as well: "Thanks to his charismatic personality, he dominates Genua's social and public life." Guthke, Karl S.: Schillers Dramen. Idealismus und Skepsis. Zweite erweiterte und bearbeitete Auflage. Tübingen 2005, p. 65-94, here p. 71f.

¹³⁰Meier: Des Zuschauers Seele am Zügel (2009), p. 38. See also Guthke: Schillers Dramen (2005), p. 71-73. This conclusion refers to the original book version of 1783.

¹³¹Immer: Der inszenierte Held (2008), p. 238.

is not the aim of this article, an automatic subclassification, i.e. the identification of (tendentially) positive, negative, or tragic protagonists,¹³² seems highly profitable for future studies for the analysis of large text corpora. It remains to be seen however whether and how such specific protagonist concepts can be operationalized.



Fig. 4.5: Speech shares in Schiller's *Die Verschwörung des Fiesko zu Genua*, measured in tokens. The seven characters with the largest speech shares of the main text are listed here.

4.2 Mary Stuart and Queen Elisabeth: Two opponents

Although both plays, *Maria Stuart* and *Die Verschwörung des Fiesko zu Genua*, draw on historical subject matter, the initial constellation in the development process is fundamentally different. 17 years after the premiere of the 'republican tragedy' *Fiesko*, *Maria Stuart* is first performed in the year 1800. Schiller had his eyes on the subject matter as early as 1783 but began actually working on the play only in 1799.¹³³ If, as Meier recognizes, Schiller's principle of the sublime – Schiller sees the sublime as an object "against which we lose out *physically*, but above which we rise *morally*, i.e. through ideas"¹³⁴

 $^{^{132}}$ In the sense of the Aristotelian concept of the tragic hero.

¹³³Compare Guthke: Schillers Dramen (2005), p. 209.

¹³⁴Schiller, Friedrich: Vom Erhabenen. In: Id.: Nationalausgabe. Vol. 20/1. Ed. Benno von Wiese. Weimar 1962, p. 169-195, here 169. [emphasis in the original].



Fig. 4.6: Co-presence table of *Die Verschwörung des Fiesko zu Genua*. Vertical lines mark the act boundaries of the play.

- becomes apparent already in *Fiesko*, and the Sturm und Drang poet has taken a step towards neoclassicism with this,¹³⁵ then the development is completed in *Maria Stuart.*¹³⁶ The prose gives way to blank verse, the scheming conspiracy leader Fiesco leaves the stage to two female protagonists that only meet on stage once – for the climax in the third act. Figure 4.8 shows the structuring of the play via the act boundaries, which simultaneously mark a change of location as well. Mary is in the center of the first act, which is set on Castle Fotheringhay. Elisabeth on the other hand is the focus of act two and four, which are both set in the Palace of Westminster. Following these structural observations, the classification result is markedly different from that of Schiller's *Fiesko*. All of four characters are tagged as eponymous in *Maria Stuart*. Apart from the titular character Mary and her relative and opponent Queen Elizabeth, we have two male characters, namely Mortimer, the nephew of Mary's confidant Paulet, and the Count of Leicester. The most important criterion for the classification as eponymous for all four mentioned characters is the number of words spoken (figure 4.11). In addition, the topics 8 and 2 are also decisive. Both topics are not employed by any of the four characters, which is precisely why they are criteria for the recognition of Mary, Elizabeth, Mortimer, and Leicester as eponymous characters.

Overall, the quantitative relations of the characters are discernably more even than in *Fiesko*. Mary and Elizabeth are both actively present on stage in exactly one third of all scenes (16 out of 48, see figure 4.10). This once again illustrates the structural design of the play with the two settings that are linked to the two characters Mary and Elisabeth, and only overlap in one scene of the play. The

¹³⁵See Meier: Des Zuschauers Seele am Zügel (2009), p. 48f.

¹³⁶See Greiner: Tragödie als Negativ des ,ästhetischen Zustands' (2009), p. 145-147.



Fig. 4.7: Shapley graph for individual characters on the TF data for *Die Verschwörung des Fiesko zu Genua*. The letters in brackets after the character names are meant to be read as: (actual class – predicted class).

quality of their presence however is different. In the dungeon, Mary is largely isolated; she is limited in her scope of action and can only act through third parties. While Elizabeth has a self-determined scope of action, she must subordinate it to the domestic stability of England.¹³⁷ The quantitative values of Mortimer and Leicester stay slightly behind those of Elizabeth and particularly Mary in most cases (*tokens, actives, passives, eigen*). As figure 4.9 shows, Mary's character discourse over the course of the plot commands the largest share of the main text with 7,659 tokens. Mortimer and Leicester have around 4,000 tokens, Elisabeth has short of 4,500. Burleigh, whose utterances comprise a total of 2,819 tokens, is not classified as a protagonist, even though he is more often present on stage than Mortimer and Leicester.¹³⁸ From the perspective of plot, this seems consistent, since Mortimer and Leicester possess a more comprehensive plot function, as Bernhard Greiner establishes:

The central male characters [...] are not merely fatal engines of the plot either, but at the same time dramaturgically for the two female protagonists the catalysts of the relinquished wholeness. Their actions geared at saving Mary seal her doom. The interview of the queens instigated by Leicester leads to the deadly insult precisely because of his presence; the failed attack of Mortimer's group of conspirators provides Elizabeth with the excuse to sign the death sentence.¹³⁹

In *Maria Stuart*, the weighting of the quantitative relations turns out to be a measure that implicitly maps/models the plot function of the agents and their contribution to the central dramatic conflict.



Fig. 4.8: Co-presence table of Schiller's *Maria Stuart*. Vertical lines mark the act boundaries of the play.

¹³⁷See Immer: Der inszenierte Held (2008), p. 382.

¹³⁸Burleigh is present in 14 scenes, Leicester and Mortimer in eleven each.

¹³⁹Greiner: Tragödie als Negativ des ,ästhetischen Zustands' (2009), p. 147.



Fig. 4.9: Speech shares in *Maria Stuart* measured in tokens. The seven characters with the largest shares of the main text are listed here.



Fig. 4.10: Active and passive presence in *Maria Stuart*, measured in scenes. A character is passively present only if he is not active in the respective scene.



Fig. 4.11: Shapley graph for individual characters on the TF data for *Maria Stuart*. The letters in brackets after the character names are meant to be read as: (actual class – predicted class).

4.3 Emilia Galotti – passively present titular character?

The automatic classification labels all of five eponymous characters for Lessing's bourgeois tragedy Emilia Galotti. Besides Emilia, her father Odoardo Galotti, the prince Hettore Gonzaga - who is descended from high nobility -, his chamberlain Marinelli, and the countess Orsina are all labeled as titular characters. If you only take into account the criteria of quantitative dominance relations elaborated by Pfister, i.e. the number of words spoken and the overall duration of a character's presence on stage, you would hardly perceive Emilia as the (or even a) central character of the play. With a mere 2,363 tokens, Emilia does not only speak less than the prince and Marinelli, who have the largest speech shares of the main text with each a little over 5,500 tokens, she also speaks less than her father Odoardo and the countess (see figure 4.12).¹⁴⁰ Likewise, she is actively present only in seven of the 43 scenes of the play. Again, other characters are more dominant here: Marinelli is part of the action in 19 scenes, the prince in 17, and even Claudia Galotti, Emilia's mother, appears on stage in 13 scenes (see figure 4.13). Why then is Emilia still recognized as the titular character? The feature analysis in figure 4.14 shows that the topics T8, T2, and T4 have the strongest influence on the classification. The number of words spoken is valued positively as well, even though it is noticeably lower than that of Marinelli or the prince. With a scant ten percent share of the main text however, it still seems to take up enough room. This may also be explained with the normalization that was undertaken here: To ensure the comparability of the texts, the values of the features are normalized in proportion to the length of the text. Since other characters speak more, but not excessively more than Emilia, and at the same time, the total number of the character personnel remains on a manageable level, the small extent of Emilia's character discourse is sufficient for her to be worth considering as titular character. For the human reader on the other hand it is rather Emilia's consistent passive presence in the dialogues and thoughts of both the prince and her parents¹⁴¹ which marks her as a (or the) titular character.¹⁴² The first act is exemplary for this. Triggered by the written petition of one Emilia Bruneschi, the prince

¹⁴⁰See in this context Ter-Nedden, Gisbert: Lessings Trauerspiele. Der Ursprung des modernen Dramas aus dem Geist der Kritik. Stuttgart 1986, p. 189. Ter-Nedden identifies the central opponents of the play as Odoardo (virtuous hero) and the prince (ruler).

¹⁴¹This passive presence does not however make Emilia a passive or negative heroine in the sense of Delbrück, who lists a low social class, mental instability, and weakness of will as possible qualities of passive heroes. See Delbrück, Hansgerd: [art.] *Held.* In: Metzler Literatur Lexikon. Begriffe und Definitionen. Ed. Günther Schweikle and Irmgard Schweikle. Stuttgart 2/1990, p. 192f.

¹⁴²See here again Ter-Nedden, Gisbert: Der fremde Lessing. Eine Revision des dramatischen Werks. Ed. Robert Vellusig. Göttingen 2016, p. 343f. Ter-Nedden sees an analogous form of progress in the first two acts, introducing first the world of the ruling prince and then the world of the Galotti family. Both times, the same previous history is recapped in different conversational situation, and Emilia occupies a central role in that history.

loses himself in restless thoughts of Emilia Galotti: "I can no longer work though. – I was so calm, I fancy, so calm – suddenly some poor Bruneschi must bear the name Emilia: – gone is my calm, and everything! –."¹⁴³ Already in the first act, Emilia becomes the focus of the conversations with varying conversation partners – the painter Conti, Marinelli, and Camillo Rota. This applies in particular to the sixth scene, when Marinelli announces the imminent marriage of Emilia and the Count Appiani, which leads the desperate prince to leave his chamberlain Marinelli the completely free hand in this matter.¹⁴⁴ This passive presence of Emilia can be shown for large parts of the play. In 16 scenes, she is referred to by name in the character discourse, although she is not actively involved in the action on stage herself at the time. Compared to other characters, this value is very high. Marinelli's name for example is mentioned in only five scenes, while Emilia's mother Claudia is not referred to by name at all without her presence on stage. Figure 4.13 shows this.

The five characters classified as eponymous once again illustrate expressly that the learned model overgeneralizes and tends to tag too many titular characters. Having said that, the classification labels precisely those characters as eponymous that could be called the central characters of the play, and thus, protagonists.¹⁴⁵

 ¹⁴³Lessing, Gotthold Ephraim: *Emilia Galotti. Ein Trauerspiel in fünf Aufzügen.* In: Id.: Werke und Briefe. Ed. Wilfried Barner et al. Vol. 7. Werke 1770–1773. Frankfurt a.M. 2000, p. 291-371, here p. 293 (lines 19-22).
 ¹⁴⁴See ibid., p. 300-305.

¹⁴⁵In these characters, "the powers that enable the overcoming of the conflict seem inherent." Fick, Monika: *Emilia Galotti.* In: Lessing Handbuch. Leben – Werk – Wirkung. Ed. id. Stuttgart 2000, p. 316–343, here p. 337.



Fig. 4.12: Speech shares in Lessing's *Emilia Galotti* measured in tokens. The seven characters with the largest shares of the main text are listed here.



Fig. 4.13: Active and passive presence in *Emilia Galotti*, measured in scenes. A character is passively present only if he is not active in the respective scene.



Fig. 4.14: Shapley graph for individual characters on the TF data for *Emilia Galotti*. The letters in brackets after the character names are meant to be read as: (actual class – predicted class).

5 Conclusion

In these pages, we examined to what extent dramatic characters can be identified both manually and automatically as protagonists or titular characters. We consciously decided not to aim at an intersubjective clarification in the context of the annotation. The concept of 'protagonist' was annotated subjectively by our annotators the way they understood it – within the provided guidelines. Accordingly, the inter-annotator-agreement turned out mixed, with 0.43 to 0.83. As the results of the classification show however, the intersubjective annotability is not a compulsory prerequisite for a good performance, provided the individual annotation data is internally consistent, and is treated separately in the learning process. As a central result on the technical level we can stipulate that even complex concepts of literary studies can be automatically identified 'successfully.' But in order to develop tools and methods that do more than reproduce subjective impressions, we need reference datasets that do not exist to date. Thus, a central challenge in the area of computational literary studies – next to the technical implementation of concepts of literary studies – is above all their intersubjective annotability.

As part of the automatic protagonist identification, we have here presented an inventory of methods that allows for interpretive statements that go beyond the mere evaluation of a method. The inventory thus enables us on the one hand to evaluate or judge the method with regard to its results. On the other hand, we are now capable of visualizing the decision-making power, or decisiveness of the properties for the classification and the exact distribution of the individual feature values. The number of words a character utters (*tokens*), is throughout – and in most cases by quite a long way – the most decisive feature for the classification. Characters that speak a lot are therefore much more probable protagonists or titular characters of a play than characters with only a short speaking time. That is not surprising and only becomes recognitionally valid through a second observation: The experiments were able to illustrate that the performance of the classification does not noticeably decrease without the *tokens* feature. The multi-dimensional combination of network metrics, active and passive stage presence, as well as topic modeling can absorb/field the information loss caused by the omission of the *tokens*, even though the *tokens* are allotted a very high *feature importance*.

The feature values and their distribution – and this chimes with our initial hypothesis – bring very interesting insights to light, which can then be examined qualitatively and allow for subsequent activities that are genuinely part of literary studies, such as the extrapolation of literary-historical statements or the interpretation of individual texts. In this respect, we were able to show that machine learning procedures can support hermeneutic cognitive processes this side of 'big data' analyses. The learning procedures directs the reader's attention towards the central dramatic characters – even before they have read the play at all. On top of that, the automatic detection of dramatic protagonists enables the discussion of existing hypotheses (e.g. about dramatic conflict situations, character constellations, etc.) beyond the individual text, thus allowing for comparisons of oeuvres, genres, and eras.

Acknowledgements

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 $^{^{146} \}rm https://quadrama.github.io.$

Appendix

List of plays used, itemized by dataset and era:

$\mathbf{A1}$

Sturm und Drang
Klinger, F. M.: Die neue Aria
Klinger, F. M.: Die Zwillinge
Leisewitz, J. A.: Julius von Tarent
Schiller, F.: Die Räuber
Schiller, F.: Die Verschwörung des Fiesko zu Genua
Goethe, J. W.: Götz von Berlichingen mit der eisernen Hand
Lenz, J. M . R.: Der Hofmeister
Weimar Classicism
Schiller, F.: Maria Stuart
Schiller, F.: Die Jungfrau von Orléans
Schiller, F.: Wilhelm Tell
Schiller, F.: Wallensteins Tod
Schiller, F.: Die Piccolomini
Goethe, J. W.: Die natürliche Tochter
Goethe, J. W.: Iphigenie auf Tauris
Goethe, J. W.: Torquato Tasso
Vienna Moderne
Hofmannsthal, H. von: Der Turm (alte Fassung)
Hofmannsthal, H. von: Ödipus und die Sphinx
Hofmannsthal, H. von: Elektra
Hofmannsthal, H. von: Der Schwierige
Hofmannsthal, H. von: Der Turm (neue Fassung)
Hofmannsthal, H. von: Der Rosenkavalier
Schnitzler, A.: Der einsame Weg
Schnitzler, A.: Anatol
Schnitzler, A.: Professor Bernhardi
Schnitzler, A.: Liebelei

Schnitzler, A.: Das weite Land Naturalism Holz, A. und Schlaf, J.: Die Familie Selicke Holz, A.: Sozialaristrokraten Holz, A.: Sonnenfinsternis Holz, A.: Ignorabismus Holz, A. und Jerscke, O.: Traumulus Schlaf, J.: Meister Oelze Wedekind, F.: Frühlings Erwachen Wedekind, F.: Erdgeist Wedekind, F.: Der Marquis von Keith Wedekind, F.: Die Büchse der Pandora Anzengruber, L.: Die Kreuzelschreiber Anzengruber, L.: Die Meineidbauer Anzengruber, L.: Der Gwissenswurm Anzengruber, L.: Das vierte Gebot

$\mathbf{A2}$

Sturm und Drang

Klinger, F. M.: Die neue Aria
Klinger, F. M.: Die Zwillinge
Leisewitz, J. A.: Julius von Tarent
Schiller, F.: Die Räuber
Schiller, F.: Die Verschwörung des Fiesko zu Genua
Goethe, J. W.: Götz von Berlichingen mit der eisernen Hand
Lenz, J. M. R.: Der Hofmeister
Bourgeois Tragedy
Engel, J. J.: Eid und Pflicht
Hebbel, F.: Maria Magdalena
Holtei, K. von: Ein Trauerspiel in Berlin
Lessing, G. E.: Emilia Galotti

Lessing, G. E.: Miss Sara Sampson Pfeil, J. G. B.: Lucie Woodvil Romanticism Tieck, L.: Ritter Blaubart Tieck, L.: Prinz Zerbino Tieck, L.: Der gestiefelte Kater Tieck, L.: Die verkehrte Welt Eichendorff, J. von: Der letzte Held von Marienburg Lessing, G. E.: Die Juden Eichendorff, J. von: Das Incognito Eichendorff, J. von: Die Freier Uhland, L.: Ludwig der Bayer Uhland, L.: Ernst Herzog von Schwaben Schlegel, A. W.: Ion Schlegel, A. W.: Alarkos Brentano, C.: Ponce de Leon Brentano, C.: Die Gründung Prags Arnim, L. A. von: Marino Caboga Arnim, L. A. von: Halle und Jerusalem Arnim, L. A. von: Das Loch Enlightenment Wieland, Ch. M.: Klementina von Porretta Wieland, Ch. M.: Lady Johanna Gray Schlegel, J. E.: Canut Schlegel, J. E.: Die stumme Schönheit Schlegel, J. E.: Der geschäftige Müßiggänger Gottsched, J. Ch.: Der sterbende Cato Gottsched, L. A.: Die Pietisterey im Fischbein-Rocke Gottsched, L. A.: Das Testament

Lessing, G. E.: Der junge Gelehrte

$\mathbf{A3}$

Bourgeois Tragedy
Engel, J. J.: Eid und Pflicht
Hebbel, F.: Maria Magdalena
Holtei, K. von: Ein Trauerspiel in Berlin
Lessing, G. E.: Emilia Galotti
Lessing, G. E.: Miss Sara Sampson
Pfeil, J. G. B.: Lucie Woodvil
Lenz, J. M. R.: Der Hofmeister
Weimar Classicism
Schiller, F.: Maria Stuart
Schiller, F.: Die Jungfrau von Orléans
Schiller, F.: Wilhelm Tell
Schiller, F.: Wallensteins Tod
Schiller, F.: Die Piccolomini
Goethe, J. W.: Die natürliche Tochter
Goethe, J. W.: Iphigenie auf Tauris
Goethe, J. W.: Torquato Tasso
Age of Metternich
Grabbe, Ch. D.: Scherz, Satire, Ironie und tiefere Bedeutung
Grabbe, Ch. D.: Don Juan und Faust
Grabbe, Ch. D.: Herzog Theodor von Gothland
Grabbe, Ch. D.: Napoleon oder Die hundert Tage
Grabbe, Ch. D.: Die Hermannsschlacht
Grabbe, Ch. D.: Hannibal
Büchner, G.: Leonce und Lena
Büchner, G.: Woyzeck
Büchner, G.: Dantons Tod
Gutzkow, K.: Zopf und Schwert
Gutzkow, K.: Das Urbild des Tartüffe

Gutzkow, K.: Richard Savage, Sohn einer Mutter

Gutzkow, K.: Uriel Acosta
Laube, H.: Monaldeschi
Laube, H.: Struensee **Popular Plays**Iffland, A. W.: Das Erbtheil des Vaters
Iffland, A. W.: Die Jäger
Iffland, A. W.: Figaro in Deutschland
Iffland, A. W.: Verbrechen aus Ehrsucht
Iffland, A. W.: Der Spieler
Kotzebue, A. von: Die deutschen Kleinstädter
Kotzebue, A. von: Menschenhaß und Reue
Kotzebue, A. von: Die Indianer in England
Kotzebue, A. von: Die beiden Klingsberg
Schröder, F. L.: Der Vetter in Lissabon

\mathbf{TF}

Sturm und Drang Schiller, F.: Die Verschwörung des Fiesko zu Genua Goethe, J. W.: Götz von Berlichingen mit der eisernen Hand Weimar Classicism Schiller, F.: Maria Stuart Schiller, F.: Die Jungfrau von Orléans Schiller, F.: Wilhelm Tell Schiller, F.: Wallensteins Tod Schiller, F.: Die Piccolomini Goethe, J. W.: Iphigenie auf Tauris Goethe, J. W.: Torquato Tasso Vienna Moderne Hofmannsthal, H. von: Ödipus und die Sphinx Hofmannsthal, H. von: Elektra Schnitzler, A.: Anatol

Schnitzler, A.: Professor Bernhardi Naturalism Schlaf, J.: Meister Oelze **Bourgeois Tragedy** Lessing, G. E.: Emilia Galotti Lessing, G. E.: Miss Sara Sampson Pfeil, J. G. B.: Lucie Woodvil Romanticism Tieck, L.: Ritter Blaubart Tieck, L.: Prinz Zerbino Tieck, L.: Der gestiefelte Kater Uhland, L.: Ludwig der Bayer Schlegel, A. W.: Ion Schlegel, A. W.: Alarkos Brentano, C.: Ponce de Leon Arnim, L. A. von: Marino Caboga Enlightenment Wieland, Ch. M.: Klementina von Porretta Wieland, Ch. M.: Lady Johanna Gray Schlegel, J. E.: Canut Gottsched, J. Ch.: Der sterbende Cato Age of Metternich Grabbe, Ch. D.: Don Juan und Faust Grabbe, Ch. D.: Herzog Theodor von Gothland Grabbe, Ch. D.: Napoleon oder Die hundert Tage Grabbe, Ch. D.: Hannibal Büchner, G.: Leonce und Lena Büchner, G.: Woyzeck Büchner, G.: Dantons Tod Gutzkow, K.: Richard Savage, Sohn einer Mutter

Gutzkow, K.: Uriel Acosta

Laube, H.: Monaldeschi Laube, H.: Struensee **Popular Plays** Iffland, A. W.: Figaro in Deutschland Kotzebue, A. von: Die beiden Klingsberg