

UNHAPPY TEXTS?

A Gendered and Computational Rereading of the Modern Breakthrough

KIRSTINE NIELSEN DEGN
JENS BJERRING-HANSEN
ALI AL-LAITH
DANIEL HERSHOVICH


ABSTRACT: Our article discusses the hypothesis that the texts of women writers of the Modern Breakthrough in Scandinavia were particularly unhappy. We examine this common claim, along with some of the quantitative and qualitative issues it raises. Does this correlation of gender and affect hold true for the entire spectrum of women's literary production from the era? What about male authorship and its affectivity? And what does 'unhappy' even mean? We confront this hypothesis and the associated questions through two interventions. The first is a

Kirstine Nielsen Degn (knd@hum.ku.dk) is a PhD-Fellow at the Department of Nordic Studies and Linguistics at the University of Copenhagen.

Jens Bjerring-Hansen (jbh@hum.ku.dk) is Associate Professor of Scandinavian Literature at the University of Copenhagen and Professor II at the University of Bergen.

Ali Al-Laith (alal@di.ku.dk) is a postdoctoral researcher at the Department of Computer Science and the Department of Nordic Studies and Linguistics at the University of Copenhagen.

Daniel Hershovich (dh@di.ku.dk) is Assistant Professor at the Department of Computer Science at the University of Copenhagen.

 This open access article is distributed under the terms of the CC-BY-NC-ND license (<https://creativecommons.org/licenses/by-nc-nd/4.0>) and is freely available online at: <https://sca.uwpress.org>.

quantification made possible by new digital archives and methodologies, which allow for a radical upscaling of the investigation's empirical foundation. The second is to approach the nineteenth-century texts with a framework from the fields of gender studies and affect theory. Our findings are the following: (1) The thesis of the unhappy text appears partially true, but importantly, women are even more overrepresented among the positive texts. (2) The affect category of neutrality is more significant. Neutrality turns out to be a male, canonical enterprise, while low neutrality is primarily associated with forgotten or neglected women authors. The most crucial gender bias in the affective economy of the texts is the lack of neutrality in literature by women. (3) This and other biases point to clear intersectional dynamics between the author's gender, the affective qualities and quantities of the texts, and their social status.

KEYWORDS: nineteenth-century literature, women's literature, affect theory, sentiment analysis, digital literary studies

Introduction

Were the texts of women writers of the Modern Breakthrough in Scandinavia really steeped in unhappiness?¹ It has been argued that this was the case. We examine this hypothesis of the unhappy female text more closely, along with some of the quantitative and qualitative issues it raises. Does this correlation of gender and affect hold true for the whole spectrum of female literary production from the era? What about male authorship and its affectivity? What does "unhappy" even mean? We challenge and discuss the hypothesis and the accompanying questions through two interventions. The first is a quantification made possible by new digital archives and methodologies that allow for a radical upscaling of the investigation's empirical foundation. While the hypothesis of the unhappy text is based solely on writing by women and often on relatively few textual instances, this upscaling also allows us to include the works written by men. Our second intervention is to approach the nineteenth-century texts with a theoretical framework from the fields of gender studies and affect theory. Central to us is the theoretical understanding of affects as a collective and material-discursive phenomenon,

1. We thank the Carlsberg Foundation and the Data+ Pool at the University of Copenhagen for supporting the research underlying this article as well as Tobias Skiveren, Christine Hamm, and the anonymous reviewers for valuable comments on earlier versions.

as opposed to the psychoanalytic understanding of emotions as something taking place in the individual psyche.

In our work, we comment on and rely on scholarship on women's literature of the Modern Breakthrough that is insightful and impactful. There is a need for new vantage points on shared concerns on a largely overlooked body of texts from a significant literary period.

The Modern Breakthrough and the Unhappy Text

With *Det moderne Gjennembruds Mænd* (1883; *The Men of the Modern Breakthrough*), prominent critic Georg Brandes coined a term and a literary perspective that has had a long-lasting effect on the historiography of the literary landscape of late nineteenth-century Scandinavia. With Brandes's telling title as the first example, the historiography of the Modern Breakthrough has primarily focused on a few canonical male authors. In line with this, Georg's brother, Edvard Brandes, also an influential critic, believed that the so-called *Damefortællinger* [ladies' stories] were of fluctuating quality:

men alle med det samme forsagende Præg. Det maa man lade vore skrivende Damer, at mandhaftige ere de ikke, man kan vride disse Bøger som man vil, man faar ikke andet end Resignation ud af dem. (E. Brandes 1876, 308)

(but all with the same renouncing character. You must allow of our writing ladies that they are not mannish, you can wring these books as you like, you get nothing but resignation out of them.)

A generation later, influential literary scholar Vilhelm Andersen echoed this rendering of "women's literature" as something distinct from "ordinary literature." Andersen dubbed the period's female literary production as "en særegen Provins af Kulturen" (Andersen 1925, 711) [a peculiar province of culture]. In 2005 the compact and canonical literary history *Hovedsporet* (*The Main Track*) brought the marginalization of women authors into the twenty-first century. Here the debates on gender and sexuality of the Modern Breakthrough are depicted under the heading "Kvindelitteratur—skrevet af mænd" [Women's Literature—Written by Men] building on the notion that primarily male authors produced significant literary works about women's conditions (Kondrup 2005, 422–3).

In large parts of the literary historiography of the Modern Breakthrough, Georg Brandes's focus on the men of the period has evidently persisted. However, this focus does not reflect the diversity of the literary production of this time, with women being most noticeable among the new groups of authors stepping forward from 1870 to 1900. In the 1970s and 1980s, several literary scholars made substantial efforts to reinterpret the period

and cast light on these female writers, most prominently Pil Dahlerup, who in a direct polemic with Brandes's male-centered 1883 book, 100 years later published her doctoral dissertation *Det moderne gennembruds kvinder* (1984; *The Women of the Modern Breakthrough*). Dahlerup gives a new account of the period's female authors in the dissertation, which has been pervasive in many of the subsequent literary histories that have cast light on the women of the Modern Breakthrough. With a theoretical framework drawing on psychoanalysis and structuralism, Dahlerup argues that in the women-authored works from the Modern Breakthrough, the positions of enunciation must be understood as functions with different forms of relations to the patriarchy: daughters, "sons," mothers, mistresses, wives, or emancipated women (Dahlerup 1984, 471). According to Dahlerup, the societal circumstances are most noticeable in the era's female authorships where depressions associated with father figures—either the actual biological father or another representative of the patriarchy as a system—are common features (Dahlerup 1984, 281). Thus, Dahlerup argues, the female authorships of the period center around a disillusionment of women's actual living conditions and a resulting depressive state (Dahlerup 1984, 281–3).

In line with this rendering, the women of the Modern Breakthrough are depicted under the heading "Den Ulykkelige Tekst" [The Unhappy Text] in *Nordisk kvindelitteraturhistorie* (Møller-Jensen et al. 1993–1998, 328; *Nordic Women's Literary History*), and in *Danske kvindelige forfattere* (1982; *Danish Female Authors*) the women authors' relation to the new social realist and naturalist literature is described as a "female authoritarian masochism" (Dalager and Mai 1982, 16). This notion of the women's writings of the Modern Breakthrough as unhappy texts recurs in the most recent historical accounts of the period's literature. In an essay on "hysteria" in Danish literature, Camilla Schwartz describes the Modern Breakthrough's depiction of female characters as texts that are "mørke og dystre og ofte ender med selvmord" (Schwartz 2022, 330) [dark and gloomy and often end in suicide]. Along similar lines, Annegret Heitmann maps "hvordan angsten tematiseres hos en række af periodens kvindelige forfattere" (Christensen and Dam 2023, 17) [how angst is thematized by a number of the period's female writers] in a contribution to a literary history of "angst" in Danish literature.

An underlying premise of the unhappy text as something attached to a distinctive experience of womanhood is that the male authors must be writing if not happy texts, then at least texts that are not unhappy! The premise is articulated explicitly by Dahlerup, who argues that while the women writers articulate the female experience as a delimited and depressive position, in the male-authored works we find the liberated types of women such as J. P. Jacobsen's Marie Grubbe, Henrik Ibsen's Mrs. Alving, and Henrik

Pontoppidan's *Jacobe*. According to Dahlerup, we only find these empowered figures in the male-authored works because they had the external and internal opportunities to challenge the norms. They were free themselves and consequently they were able to convincingly portray liberated fictional characters (Dahlerup 1984, 349).

The notion of women's literary production of the Modern Breakthrough as consisting of tendentially unhappy texts—and the unspoken notion of the male literary production as made up of mostly happy texts—evidently persists well into the most recent literary historiography of the period. We argue that this notion has a great impact on how we perceive this significant period in Scandinavian history and thus is worth revisiting. We do this with two points of departure, the first concerning scale and empirical selection, and the second concerning theoretical framework and methodology.

Measuring Emotions, Reading at Scale

Our explorations of the emotional qualities and their distribution in the literature of the Modern Breakthrough are based on a lot of text. We rely on a corpus comprising all original (i.e., nontranslated and nonreissued) novels published in book form in Denmark from the last thirty years of the nineteenth century. This equals 839 novels by Danish and Norwegian authors or more than 50 million words in total (Bjerring-Hansen et al. 2022).² As the output statistics in Figure 1 indicates, the Modern Breakthrough was also a breakthrough of the novel in Denmark and Norway, with the yearly output increasing from about ten volumes to about fifty over the thirty-year period. Throughout the period, around 20 percent of the novels were produced by women authors.³

2. The corpus is the empirical foundation of the MeMo project <https://nors.ku.dk/english/research/projects/measuring-modernity/>. It is publicly available here: <https://huggingface.co/MiMe-MeMo>. It should be noted that until 1907, written Norwegian was practically identical to written Danish (Vikør 2022). In other words, we are dealing with a more or less linguistically coherent body of texts.

3. In line with other digital literary studies dealing with gender issues (for instance, Underwood, Bamman, and Lee 2018; Cheng 2020) we employed a coding for the authors based on a tripartition: “female,” “male,” and, in the case of unknown anonymous authorship, “unknown.” Public gender representation in Scandinavia of the late nineteenth century was predominantly organized according to this scheme. We rely on a Butlerian understanding of gender, namely as the conventional roles that individuals were expected to assume to be considered legitimate in social contexts (Butler 2002, 123–4, 178). This approach is used because the article's focus is precisely to explore gender as an affective, cultural, and historical category, not the authors' personal gender identities or the

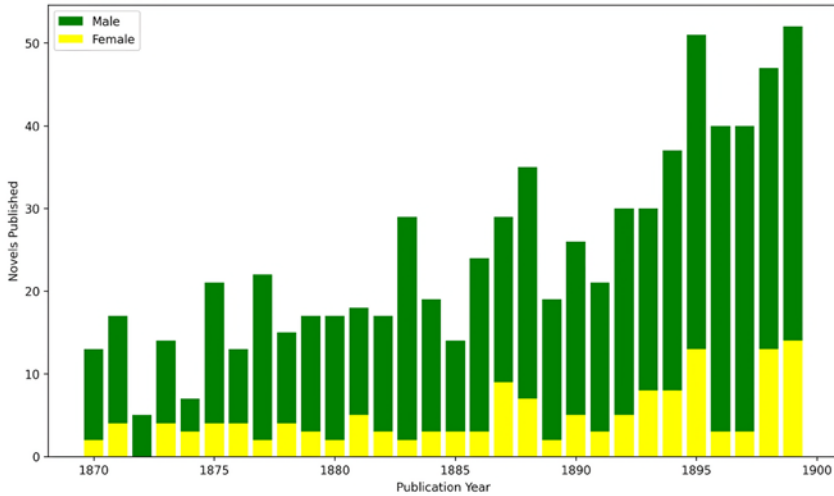


Figure 1. The novel in the Modern Breakthrough. Male and female production over a thirty-year period (1870–1899).

The cultural diversity of the texts is pronounced. From a genre perspective, we have contemporary novels, historical novels, and other forms of genre fiction such as romance, crime, and war stories (see Bjerring-Hansen and Rasmussen 2023). From an aesthetic perspective we have both avant-garde forms of realism, including naturalism and impressionism, and more traditional “it was a dark a stormy night” prose with a preference for abstract or generalized over concrete specification (Bjerring-Hansen and Wilkens 2023).

In other words, the corpus allows—and is indeed intended—for capturing and exploring the “forgotten 99 percent” of literature in circulation, which Franco Moretti famously drew attention to in his studies of nineteenth-century British novels (Moretti 2000, 208). Beyond this opening up of the canon, a basic critical argument for digital literary studies is that computational techniques allow for analyzing large textual archives to capture long-term and widespread literary trends. The important strategy here is quantification: the act of counting and measuring. As Matthew Wilkens has pointed to, literary scholars often underestimate “the extent to which their claims are implicitly quantitative, pattern-based, and dependent on reductive models of the texts they treat” (Wilkens 2015, 11). Arguments on literary trends or epochs, for example, “the unhappy text” of the Modern

processes that shape it. We will only address these questions indirectly in our highlighting of the fluid and unstable nature of the signification of public gender signals.

Breakthrough in Scandinavia, are built on what Wilkens calls “an abstractly quantifiable model” of a problem domain and of the texts’ place in it (Wilkens 2015, 11). Even without numbers, statistics, and graphs, they rely on considerations of the distribution of specific features across a range of relevant texts. What digital literary studies does and insists on doing is to make this procedure explicit not to trump tradition but to bring new perspectives and evidence to the table. Our ideal is that critical knowledge can be reviewed through computational models and computational models, in turn, can be evaluated against critical knowledge, as Andrew Piper and others have contended (Piper 2015).

Sentiment Analysis

Sentiment analysis is the quantification of the sentiments associated with the words of a text. The techniques, which have been an important tool in natural language processing and have found their way into digital humanities work, aim to compute and analyze “people’s opinions, sentiments, appraisals, attitudes, and emotions towards entities and their attributes” (Liu 2015, 1). In this process, emotional content is automatically extracted from the texts and converted into machine-readable information such as labels (in our case “positive,” “negative,” and “neutral” indicating sentiment quality or so-called polarity: *what?*) and numbers (in our case a score between zero and one indicating sentiment intensity or so-called valence: *how much?*). These labels and numbers can be modeled statistically and visualized in graphs and plots. Traditionally, sentiment analysis has been applied to texts with a strong valence and subjectivity (e.g., reviews or social media posts). In recent years, different methods of detecting sentiments have been used on literary texts (see Kim and Klinger 2019; Reborá 2023).

Obviously an automated analysis of the sentimental qualities of novels poses all kinds of challenges and caveats. We are dealing with not only long texts but also imaginative literature infused with ambiguity, interpretational confounding, rhetorical sophistication, and narrative layering between author, narrator, and characters. Add to this the processes of language change and the dynamic nature of emotions. Some of these issues are addressed along the way. That said, we believe that it is precisely the reductionism of the metric we use that allow us to see the novels of the Modern Breakthrough in a radical new light by linking—or delinking—our computational efforts to critical understandings of the characteristics of the period and more generally to notions of how literary texts work.

How did we go about analyzing the sentiments in the novels? The long answer can be read in a newly published methods paper (Al-Laith et al. 2023),

whereas the short answer is that in a collaboration between computer scientists, linguists, and literary scholars, we developed a classifier based on a large multilingual language model (XLM RoBERTa, released by the Facebook AI team in 2019) after it had been fine-tuned on Danish tweets annotated for sentiment and, not least, a human-annotated data set of the sentiment of almost 3,000 sentences from novels from our corpus. With an accuracy of 80 percent, meaning that the model in four out of five cases classified the sentiment of the sentences from the annotated data set in accordance with the (human) domain experts, this new model outperforms other models when it comes to nineteenth-century prose in Danish. Thus it was used for an automatic prediction of sentiments of the whole corpus, whereby the more than 3.2 million sentences were processed by the algorithm and annotated as positive, negative, or neutral.

In developing, training, and validating an accurate model, the human touch in form of annotation is crucial, while the process from the point of view of the three literary scholars acting as annotators, confronted with three to four randomly picked sentences from each novel, also provided broad insight to the diverse make-up of the corpus. We decided to work on a sentence level as a compromise, avoiding cruder alternatives: text level, in which case the polarity of an entire novel should be determined and wrapped up in a single label, or word level, which would require a sentiment lexicon for nineteenth-century Danish and, more important, too often miss out on the subtle ways sentiment is expressed in language and interacts with sentence structure.⁴

The annotation task can be illustrated by pointing to two of our central challenges. The first is connected to semantic change as exemplified in one of the snippets from the corpus: “Hun blev strax noget fortumlet over disse uforberedte Kjærtegn ; men da hun laa i hans Arme , saa’ hun op paa ham med et besynderligt, ikke fornærmet Blik” [She was at once somewhat taken aback by these unexpected caresses; but as she lay in his arms, she looked up at him with a curious, not offended, look]. Since the adjective *besynderlig* in the nineteenth century also had the meaning “special” or “curious,” besides the dominant modern connotation “weird,” this sample should not be labeled as negative but as positive. Hence, the language model is implicitly trained to deal with issues of semantic change without this explicit expert knowledge (in natural language processing jargon, word-sense disambiguation or WSD).

The second challenge is related to social change and specifically involves gender and gender roles. An awareness that cultural values and norms change

4. The annotation guidelines as well as an array of interpretational and methodological challenges are documented and discussed in Al-Laith et al. 2023, 327.

over time is crucial for annotation and the usefulness of sentiment classification of historical texts. We paid special attention to text segments involving gendered behavior and dialogue, by relying on fundamental insights from social constructivist gender theory, understanding gender as a category subject to change in form and meaning over time.⁵ From this follows that a modern understanding of gender roles could potentially be at odds with the intentions in nineteenth-century texts. On one hand, dominant behavior from a male character, for example, the use of grammatical imperative (“Stop!”) would tend to be understood more negatively today than in the past; conversely, female passivity is probably more likely to be conceived as tendentially negative than positive. The latter can be exemplified by a sample involving a female character—passive, dreamy, and nostalgic—which we decided to label as positive: “Men allerhelst laa hun dog i Vinteraftenernes Skumring i sin Yndlingsstilling i Armstolen og grublede og drømte og ventede og ventede—ligesom Prinsessen i Eventyret” [But most of all, in the twilight of the winter evenings she would lie down in her favorite position in the armchair, pondering and dreaming and waiting and waiting—like the princess in the fairy tale]. Awareness of linguistic and cultural change is pivotal for our classifier (and more generally for developing useful AI models for computational explorations of a low-resource domain, such as Scandinavian literary history).

Affect Theory

The successes of sentiment analysis in digital humanities in recent years are paralleled by a similar rising interest in emotions in several other disciplines (Keen 2011, 7). In the humanities and social sciences, the increased interest in emotions or affects has even been dubbed the “affective turn” (Clough and Halley 2007). In literary studies, explorations of the connections between emotions and literature have a long history, not limited to this most recent turn toward feelings and affects. Georg Brandes thought of literature as a depiction of collective emotions: “When a people’s literature is fully developed, it represents the entire history of that population’s thoughts and feelings” (G. Brandes [1872] 2017, 699). In more recent times, many scholars have also argued for this connectedness. In a positivistic vein similar to Brandes, Martha C. Nussbaum claims that literature is a particularly privileged art form because it gives access to people’s inner emotional and

5. In this, we took crucial inspiration from Joan W. Scott’s middle range theory approach and Foucauldian criticism of essentialist and deterministic notions regarding gender as a category of historical analysis (Scott 1986, 1066–7, 1074).

intellectual life (Nussbaum 2016, 26). Analogous to this, Sianne Ngai has highlighted the aesthetic domain as “the ideal site to examine the politically ambiguous work of negative emotions” (Ngai 2005, 6). Rita Felski has argued that literary works have a special ability to depict a social phenomenology as they are concerned with how particular lifeworlds are felt and experienced (Felski 2008, 89; 92).

When we set out to juxtapose sentiment analysis, literary studies, and affect theory, it is not an unlikely or ill-fitting endeavor, but one way of trying to get hold of and make it possible to study how emotions are at work in literary works. What exactly are we looking for when reading for emotions at scale? In the following, we elaborate on how we try to make use of a conceptual framework from affect theory to answer this question.

Affect theory springs from a turn against the notion of emotions as “expressive.” Sara Ahmed has argued that emotions are not a private matter that originates in the individual psyche and moves outward (Ahmed 2004, 117). Instead, Ahmed understands emotions as cultural practices rather than psychological states (Ahmed 2014, 194). Emotions are thus regarded as collective phenomena which are embedded in and constituted by a historical, cultural, and social context (Ahmed 2004, 126). We seek to investigate this embeddedness. In Ahmed’s terminology, we set out to track “how emotions circulate between bodies, examining how they ‘stick’ as well as move” (Ahmed 2014, 4). In this respect, we want to examine how and to what extent emotions have “stuck” to literary and social categories. How do emotions circulate, stick, and move in relation to, for instance, issues concerning gender, narratology, canonicity, and popular culture?

This cultural understanding of emotions makes literary works an obvious object of interest. Yet the endeavor to examine “how emotions circulate between bodies” (Ahmed 2014, 4) calls for attention to the difference between the “bodies” found in the extratextual world and literary “bodies.” As Tobias Skiveren has highlighted, literary bodies are embedded in a “body of text,” and thus they can only come into view through the sensations that literature’s various “*æstetiske kompositioner*” [aesthetic compositions] offer (Skiveren 2020, 93).

Therefore we examine the aesthetic compositions by which the affects come into view. In other words, we are interested in the affective mode or style of the text. In this respect we are, as outlined above, working with a demonstratively primitive typology of affective styles: positive, negative, and neutral. We do not aim to map in detail how affects are at work in the individual texts; instead, we want to give a quantitative overview that hopefully will create new questions and open interesting dimensions of the relations between emotions, gender, and literary history, which will provide ground for new and further investigations.

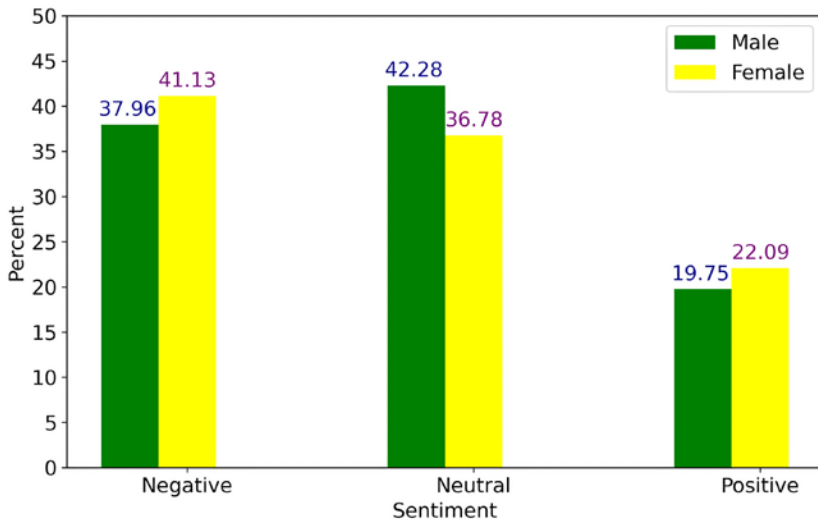


Figure 2. The big picture. The diagram shows the distribution of sentiments juxtaposed with gender. The x-axis identifies sentiment class. The y-axis is the fraction of sentences per sentiment class.

Major Trends

To begin with, let us look at a raw and basic analysis of the sentimental qualities and their quantities in the corpus. In Figure 2, the distribution of sentiment levels is shown in relation to the author’s gender and the percentage of sentences.

We are not looking at individual novels but at the corpus as a whole dispersed into six bags, according to two variables: sentiment class and gender. Each bag contains sentences that are classified as positive, negative, or neutral and produced by a male or a female author. We see that there are significant gender differences in all sentiment classes. Notably, according to our metric, female authors tend to exhibit a higher proportion of both negative and positive sentiments compared with male authors, whereby the hypothesis about female authorships being particularly “unhappy” is both confirmed and contradicted. This is not a result or a conclusion, merely a modeling of the data, which calls for further tweaks and experiments to understand the dynamics and tensions at play.

An adjustment of the metrics that proves to be somewhat significant is based on formal and narratological considerations. The analysis in Figure 3 is identical to the basic experiment, but it draws only on the last 1 percent of the novels (e.g., the last three pages of a 300-page novel).

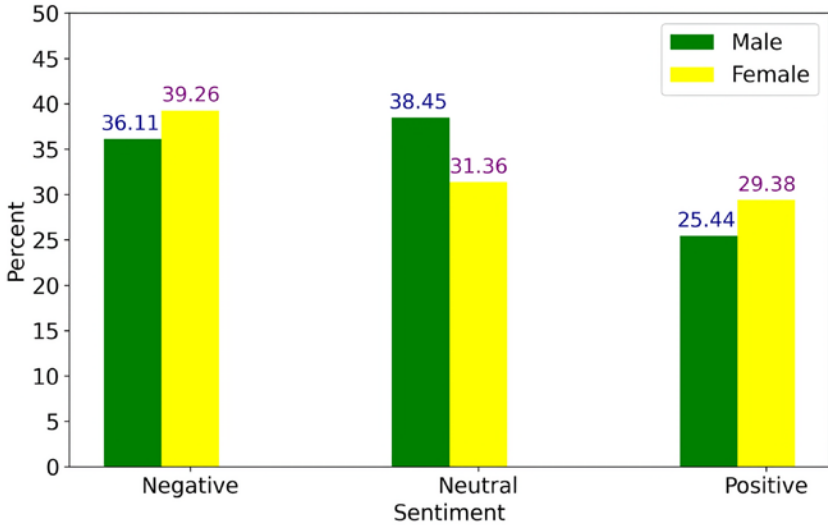


Figure 3. Closure. This graph only consists of the endings of the novels, defined as the last 1 percent of the text.

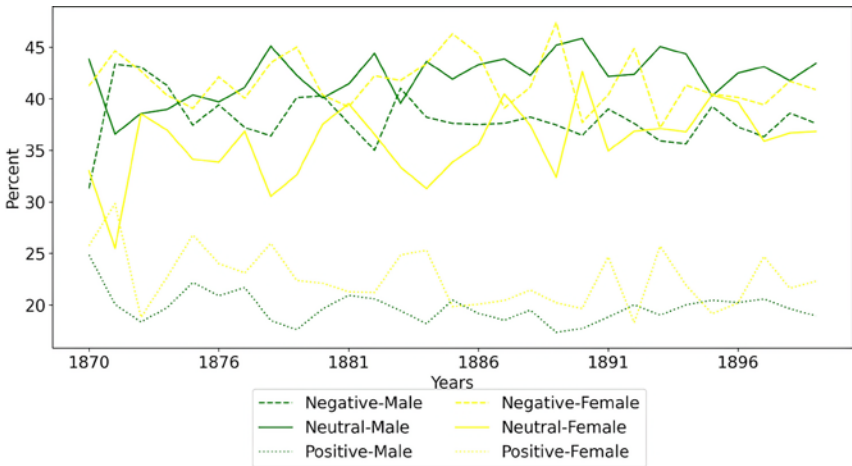


Figure 4. Time series. The sentences are aligned with gender and year of publication.

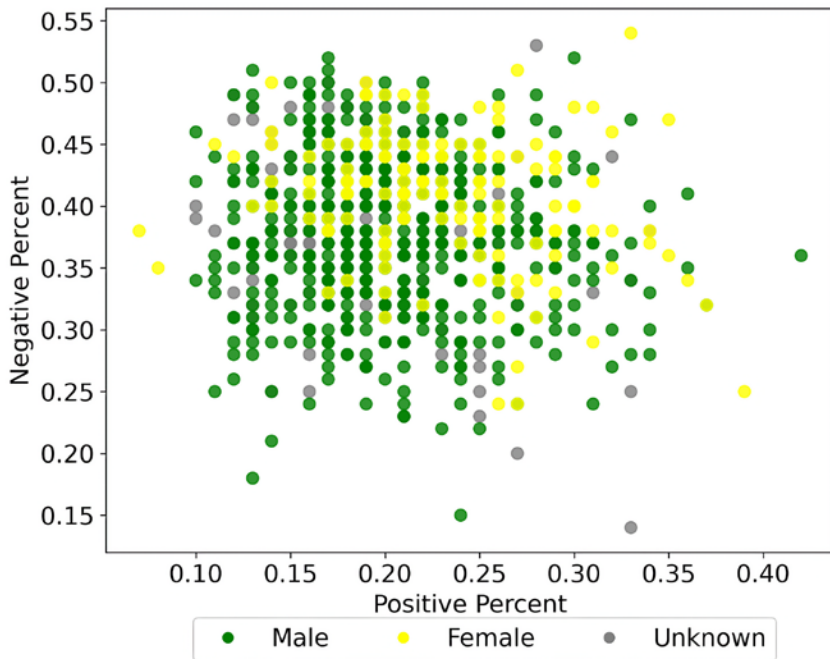


Figure 5. A system of differences and similarities. All novels are placed in a coordinate system with positive sentiment scores on the x-axis and negative scores on the y-axis.

The inspiration comes from a long tradition of theoretical emphasis on narrative closure—from Aristotle’s poetic, to Frank Kermode’s *Sense of an Ending* (Kermode 1967), to contemporary cognitive narratology (see Klauk, Köppe, and Onea 2016)—which are often paired with a naive assumption that the emotional register is particularly distinct at the end of a novel. Indeed, a notable shift in polarity can be observed as the emotional polarity of the endings swings from neutrality to positivity. But seemingly there’s no gender effect at play. So we decided to work with whole texts rather than chunks. This is also more in line with our affect-theoretical starting points, where concepts such as closure, storyworld, and disruption do not play a crucial role.⁶ We are not interested in trying to mimic an analogue

6. Affect-theoretical literary studies with a narratological orientation tend to focus on text-internal affects at the character, narrative, or composition level rather than on the affective relationship between text and reader (see Andersen 2016). On a more fundamental level, Patrick Colm Hogan, for example, distinguishes between “affect theory”

reading practice and thereby making the computational interventions too complicated and opaque.

An attempt to find a temporal logic behind the numbers proves insignificant and inconclusive as we see in Figure 4, where year of publication is aligned with sentiment classification and author gender. There are no telling developments in either category. There are no signs of impact from particular contextual events, for example, the so-called Sædelighedsfejde [Nordic sexual morality debate] in the 1880s, or time-specific aesthetic developments, such as the rise of realism (see Bjerring-Hansen and Wilkens 2023). Seemingly, there's no time-related plot in the literary history of emotions in the modern breakthrough, at least not according to our findings.

In this iterative process of (re)building, (re)modeling, and (re)visualizing, we found it compelling to look instead at all the texts embedded in the same (heterogeneous) cultural space or literary system of circulation. In the scatterplot in Figure 5, each dot represents a novel, whose position is defined by positive valence (x -axis) and negative valence (y -axis).

This visualization makes it even clearer how the women's texts are characterized by a high degree of affect and conversely how the men's texts are characterized by a low degree of affect. The high-affect quadrants are populated and partly dominated by women authors, which we remember only account for about 20 percent of the novels.

At the same time, along with the underlying data, the graph can be used to identify individual texts. In this regard, sampling outliers suggests that the canonical texts are oriented away from the positive quadrants and vice versa. On one hand, two novels by Amalie Skram, praised and criticized for her raw and "manly" naturalism (see Garton 2007, 329) are placed to the far left on the y -axis among novels from equally nonpositive and negative male authors. On the other hand, to the far right, an adventurous frontier novel like Adam Dan's *Prærierosen* (1892) [The Prairie Rose] is found in an affective domain of literature largely dominated by female authorship.⁷ In other words, when identifying individual texts and looking at their relative position in our approximated affect system, we get clear hunches of what Ahmed calls "sticky relations" between affects, gender, and aesthetic positions (Ahmed 2004, 126).

(a philosophical and cultural studies approach) and "affect science" (a cognitive approach) as two different directions in affect studies (Hogan 2016, 4).

7. The novels by Amalie Skram are the two first volumes of her naturalist saga of the Hellemyr family and its decay: *Sjur Gabriel* (1887), scoring 7 percent positive and 38 percent negative, and *To Venner* (1887), scoring 8 percent positive and 35 percent negative. Adam Dan's *Prærierosen* scores 37 percent positive and 35 percent negative.

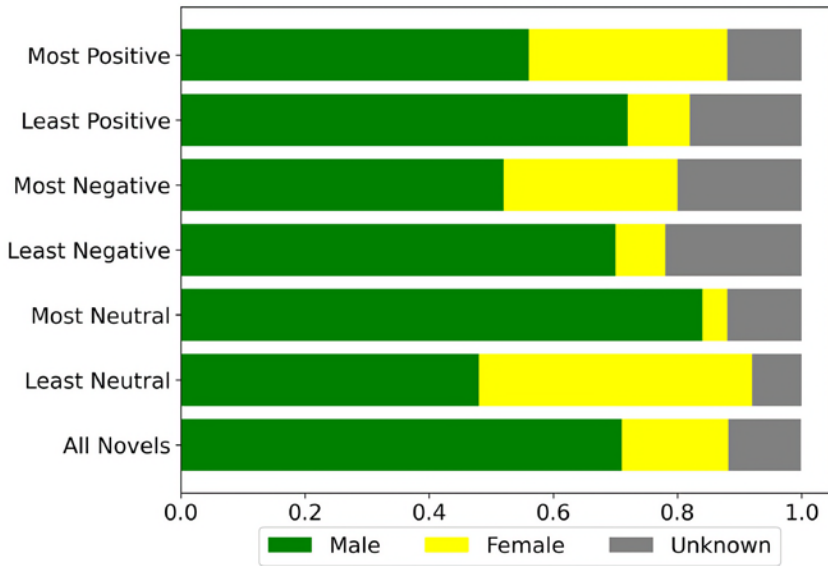


Figure 6. Sentiment intensity in groupings. The groupings are based on valence. Displayed at the bottom as a baseline are all 837 texts with their author-gender distribution ranging from 0 percent to 100 percent. Above, we have the author-gender distribution of the top fifty of the respectively most and least positive, negative, and neutral texts.

Closer Readings and Sticky Relations

To investigate these hunches, we take a step closer to the individual texts and their intersectional positioning, by focusing on groupings of fifty novels at a time. We show how the gender discrepancies become clearer when zooming in on the most “extreme” cases. But most important, the process allows us to isolate distinct aesthetic and social positions: advanced or high-brow literature on the one hand and popular or traditionally oriented literature on the other.

Figure 6 reveals several interesting correlations between gender, affect, canonicity, and popular culture. We will highlight four gendered biases: (1) women authors, in line with the unhappy text hypothesis, are significantly overrepresented among the most negative texts accounting for 28 percent, compared with the 17 percent they constitute of the corpus. (2) Contrary to the hypothesis, women authors are even more significantly overrepresented among the most positive texts, accounting for 36 percent of the top fifty. (3) Women authors are highly underrepresented among the most neutral texts, accounting for only 4 percent of the top fifty. (4) Finally, women

authors are most significantly overrepresented among the least neutral texts, accounting for 50 percent of the top fifty, roughly three times as much as they make up in the corpus.

Intersectional Dynamics

Starting with the hypothesis of the unhappy texts, it is partially confirmed by our sentiment analysis. Female authors account for 28 percent of the texts and are thus overrepresented compared with their 17 percent representation in the total corpus. However, it is not the canonized authors who are often highlighted as the prime examples of the unhappy, dark, and angst-filled literature written by women who top the list. Looking closer at the works that make up the list, a different picture reveals itself than when reading literary histories. Authors such as Amalie Skram and Olivia Levison, who wrote some of the prime examples of “unhappy texts,” are not found in the top fifty, and we have to scroll down to positions twenty-four and thirty-eight to find Erna Juel-Hansen and Adda Ravnkilde. Instead, the most negative novels are religious works like Theodora Mau’s *Deodata* (1871) and *Solstraalen* (1872) ([The Ray of Sunshine], and Laura Kieler’s *I En Lysengels Skikkelse* (1892) [In the Shape of an Angel of Light]. Even though these works (based on a sentiment analysis like ours) should be the primary examples in the representation of unhappy women’s texts, they are hardly mentioned in critical literature, and when they do turn up, they are deemed outside the interest of literary historiography as they are considered to be written in a retrospective and naively positive fashion (see Dahlerup 1984, 270; Hjordt-Vetlesen and Mortensen 1993, 361). Our distant reading, however, indicates that something beyond naive positivity and romanticism is also at work in the religiously informed novels.

For the most positive novels, the hypothesis of the unhappy text is challenged. Even more so than regarding negativity, women authors are overrepresented among the most positive novels, accounting for 36 percent of the top fifty. Positivity was very much a “female” undertaking, too. Even more pronounced than among the most negative texts, the focus on the most positive texts makes up a noncanonical top fifty. Among the male authors, two canonical writers have found their way to the list: Peter Nansen with *Maria* (1894) and fairy-tale writer H. C. Andersen with the late novel *Lykke-Peer* (1870) [Lucky Peter], of whom Nansen is the only one usually thought of as a part of the Modern Breakthrough. The rest of the male authors and all of the female authors are either completely unknown or noncanonical authors.

Among the unknown authors, we have Camilla Ravn’s *Interiører fra vore Bedsteforældres og Forældres Tid* (1899) [Interiors from the Time of Our

Grandparents and Parents], published under the pseudonym Ulrik Horn, and Emma Larsen's *Skæbnens Veje* (1898) [The Paths of Fate]. In addition, we find authors such as Adolphine Fogtmann, Christine Mønster, Louise Bjørnsen, Drude Krog Janson, and Theodora Mau, who are mentioned in women's literary histories but are far from being canonized. The shared attributes among these noncanonical women authors are that they are considered religious, traditional, and/or naively romantic writers. Fogtmann's form and content are described by Dahlerup as "så ukompliceret traditionelt og så småt, at det ikke kan sætte læseren i bevægelse . . . Epigonlitteratur" (Dahlerup 1984, 146) [so uncomplicatedly traditional and so small that it cannot move readers. . . Epigonal literature].⁸

In this way, the most positive texts are traditionally linked to a retrospective and idealistic style of writing. They are largely thought of as unmodern and rooted in a bygone romanticism, not of interest for literary historiographers studying the *Modern Breakthrough*. However, as our analysis shows, positivity should not be dismissed when studying the women writers, as the positive works make up a large part of the women's literary production and may highlight the sticky relations between affects and canonicity.

The Least Neutral Text

While Figure 5 only indirectly accounts for neutrality, the process of zooming in on groupings of fifty texts at a time, as displayed in Figure 6 and Tables 1 and 2, allows us to incorporate neutrality as an affective and stylistic feature into our analysis. Just from a brief glance at the neutrality rank displayed in Tables 1 and 2, it is clear that we can observe a pronounced gender and canonicity bias regarding neutrality. Female authors account for only 4 percent of the top fifty most neutral texts, and men account for 84 percent. Neutrality can consequently be said to be a male undertaking during this period. This should not be understood as an inherent or essential masculine/feminine trait. Instead, it should be viewed as a specific historical and cultural example of how emotions have stuck to particular social categories, shaping conventional gender roles that people were expected to embody for social legitimacy. In this context, it is also worth noting that the top fifty primarily consists of canonical authors, particularly those associated with

8. Theodora Mau is similarly listed by Dahlerup under the heading "Døtrene: De religiøse" [The Daughters: The Religious] (Dahlerup 1984, 270), and Louise Bjørnsen is described as a gothic-inspired writer rooted in romanticism (Busk-Jensen 1993, 217–9). Mønster and Janson are also described as authors where religious themes and messages are central (respectively, Iversen 1993, 422; Hjordt-Vetlesen and Mortensen 1993, 367).

Table 1. The Most Neutral Texts—The Ten Novels with the Highest Percentage of Neutral Sentiment

Rank	Author	Title	Year	Neutral (%)
1	Kristian Gløersen	<i>Fra Mit Friluftsliv</i>	1881	69
2	Herman Bang	<i>Liv og Død</i>	1899	65
3	Herman Bang	<i>Stuk</i>	1887	63
4	Laurits Johansen	<i>Til Nordpolen pr Ballon</i>	1894	62
5	Unknown	<i>Olietrykmandens Frieri</i>	1879	61
6	Herman Bang	<i>Stille Eksistenser</i>	1886	61
7	Alexander Thorsøe	<i>Interiører Fra Det Danske Hof</i>	1897	61
8	Johannes Jørgensen	<i>En Fremmed</i>	1890	60
9	Christian Krohg	<i>En Duel</i>	1888	60
10	Christian Lundgaard	<i>Don Juan</i>	1896	59

Table 2. The Least Neutral Texts—The Ten Novels with the Lowest Percentage of Neutral Sentiment

Rank	Author	Title	Year	Neutral (%)
828	Rosalia Rosenfeld	<i>Hvem af de to</i>	1878	22
829	Louise Bjørnsen	<i>Skibladner</i>	1883	22
830	Theodora Mau	<i>En Formynder</i>	1874	22
831	Leopold Budde	<i>En Historie fra Fattige Steder</i>	1874	22
832	Drude Krog Janson	<i>Mira</i>	1897	21
833	Otto Martin Møller	<i>Af Elskovs Naade</i>	1896	20
834	Theodora Mau	<i>Solstraalen</i>	1872	19
835	Anders J. Meldgaard	<i>Pastor Brandt</i>	1888	19
836	Louise Bjørnsen	<i>En Kvinde</i>	1894	18
837	Theodora Mau	<i>Deodata</i>	1871	13

modern realism. We find novels by Herman Bang in places two, three, and five, while Jonas Lie, Bjørnstjerne Bjørnson, and Holger Drachmann are represented with a total of nine works. The only woman author in the top fifty is naturalist Amalie Skram, represented by two works. Contrary to the implicit hypothesis of the unhappy female texts, regarding male-authored works as “happy” texts, it is not among the most positive novels that we find the male authors overrepresented but among the most neutral texts. Parallel to this, our sentiment analysis finds that women authors are significantly overrepresented among the least neutral novels, accounting for 50 percent of the top fifty compared with their 17 percent representation in the total corpus.

Again, the top fifty predominantly consists of noncanonical works. We find a range of religious and traditional texts that were also present in the top fifty of the most positive texts, such as Theodora Mau, Adolphine Fogtmann, Louise Bjørnsen, and Drude Krog Janson. In addition, we find authors like Magdalene Thoresen and Anna Margrethe Krebs, who are described by Lise Busk-Jensen as conservative critics of realism (Busk-Jensen 2009, 58). We find an author like Massi Bruhn, who despite being a rather central figure in the women’s movement (Mortensen 2023), is dismissed in *Nordisk kvindelitteraturhistorie* (1993) [Nordic Women’s Literary History] as “efterklangslitteratur” [epigonal literature] where “romantikken klæber til både motiver og form” [romanticism clings to both motives and form] (Hjortd-Vetlesen and Mortensen 1993, 384).

Our analysis points to a correlation between what is regarded as “modern” literature and neutral sentiment. The texts who top the list of the least neutral works are regarded as old-fashioned, conservative epigonal literature in historiography. What is important is that this has a significant implication regarding gender. Our analysis shows that if we talk about a specific women’s style of writing in the period, we must highlight their lack of neutral sentiment, rather than their unhappiness (“lack” understood in a merely quantitative sense). We could even give it a new heading as “the least neutral text.” This outlines an interesting intersectional dynamic between gender, neutrality, and canonization, which raises several questions. In what manner have the sticky relations between these cultural categories influenced literary historiographies? Literary scholars like Jan Rosiek have engaged critically with the notion that the modern part of modern literature is a development away from metaphysics (Rosiek 2003, 9). Our analysis raises the same question. Has our understanding of modern literature equaling nonmetaphysical literature made us regard an “unsentimental” or neutral

style of writing as the only truly modern literary disposition?⁹ Have we in this way solely emphasized a style of writing, which can be said to be a primarily male undertaking?

Our radical upscaling of the empirical foundation has both challenged and confirmed the thesis of the unhappy text. The women authors are overrepresented among the most negative texts but are also among the most positive. Most interestingly, a gendered bias has emerged regarding neutrality. The traditional hypothesis of a specifically female unhappiness has been shown to be canon-oriented and normative in its emphasis on negative sentiment and its notion of an unsentimental and antimetaphysical writing style constituting the modernity of modern literature. In this motion, it has largely overlooked and rejected religiously influenced or strongly affective works as uninteresting epigonal literature and consequently marginalized large parts of women's literary production. The unknown and noncanonical works have thus been shown to pose a significant challenge to the hypothesis of the unhappy women's text.

Conclusions

The key findings in our rereading of novels from the Modern Breakthrough, based on a vast body of text and our particular metrics, are that (1) the thesis of the unhappy text appears partially true, but importantly, women are even more overrepresented among the positive texts. (2) However, the affect category of neutrality is more significant. Neutrality turns out to be a male, canonical enterprise, while low neutrality is primarily associated with forgotten or neglected women authors. The most crucial gender bias in the affective economy of the texts is the lack of neutrality in literature by women. (3) This and other biases point to clear intersectional dynamics between the author's gender, the affective qualities and quantities of the texts, and their social status.

9. What we are suggesting here is a perspective that has gained attention in academic contexts outside of Denmark, particularly among feminist scholars. For instance, Christine Hamm has argued that Amalie Skram's marriage novels can be read as a critique of the patriarchy, precisely due to what Hamm highlights as the emotionally charged, melodramatic features of the novels (Hamm 2006, 8–9). Also, Henrik Ibsen's plays were infused with melodramatic sequences as among others Toril Moi has shown (Moi 2006). Finally, Margaret Cohen has argued that the nineteenth-century realist French novel, often celebrated as the emergence of the modern novel, actually occurred through a "hostile takeover" of the contemporary genre of sentimental novels, primarily written by women (Cohen 1999, 6).

These findings are new and raise critical questions regarding a literary historiography, in which an understanding of “modern” and “proper” literature seems to be totally dependent on a type of writing that first and foremost has been a male undertaking. The findings are of a new kind compared with the close(r) and (more) psychologically charged readings with which we have been in discussion. As an immanent result of the digital methodology, our analyses seem to capture emotions on the body rather than the mind of the texts. It can be argued that we have identified particular styles of writings in the texts rather than psychological states, but we chose to say (as programmers sometimes do) that this is not a bug but a feature of our work, because such a “superficial” reading is in line with our affect-theoretical starting point, and of course, because there are limits to how much psychological depth and sensitivity one can expect from a language model and artificial intelligence. These boundaries and the division of labor between humans and machines will be negotiated further in the coming decades. In these negotiations, literary data, especially older texts from low-resource languages such as Scandinavian, can play an important role in improving the cultural and historical depth of language models and testing their analytical (non)sense.¹⁰

Works Cited

- Ahmed, Sara. 2004. “Affective Economies.” *Social Text* 22 (2): 117–39.
- . 2014. *The Cultural Politics of Emotion*. 2nd ed. Edinburgh: Edinburgh University Press.
- Al-Laiith, Ali, Kirstine Degn, Alexander Conroy, Bolette Pedersen, Jens Bjerring-Hansen, and Daniel Hershovich. 2023. “Sentiment Classification of Historical Danish and Norwegian Literary Texts.” *Proceedings of the 24th Nordic Conference on Computational Linguistics (NoDaLiDa)*, 324–34. <https://aclanthology.org/2023.nodalida-1.34>.
- Andersen, Per Thomas. 2016. *Fortelling og følelse: en studie i affektiv narratologi*. Oslo: Universitetsforlaget.
- Andersen, Vilhelm. 1925. *Illustreret dansk litteraturhistorie. Vol. 4: Den danske Litteratur i det nittende Aarhundredes anden Halvdel*. Copenhagen: Gyldendal.
- Bjerring-Hansen, Jens, Philip Diderichsen, Dorte Haltrup Hansen, and Ross D. Kristensen-McLachlan. 2022. “Mending Fractured Texts: A Heuristic Procedure for Correcting OCR.” *Proceedings of the 6th Digital Humanities in the Nordic and Baltic Countries Conference*, Uppsala, Sweden, March 15–18, 2022 (DHNB 2022), 177–86.

10. For full details of the methods and codes used, including access to our language model sentiment classifier, see the online code appendix to this article: <https://github.com/mime-memo/unhappy>.

- Bjerring-Hansen, Jens, and Sebastian Ørntoft Rasmussen. 2023. "Litteratursociologi og kvantitative litteraturstudier Den historiske roman i det moderne gennembrud som case." *Passage* 89: 171–89.
- Bjerring-Hansen, Jens, and Matt Wilkens. 2023. "Deep Distant Reading: The Rise of Realism in Scandinavian Literature as a Case Study." *Orbis Litterarum* 78 (5): 335–52. <https://doi.org/10.1111/oli.12396>.
- Brandes, Edvard. 1876. "Julelitteratur." *Det Nittende Aarhundrede, Maanedsskrift for Litteratur og Kritik*: 296–312.
- Brandes, Georg. [1872] 2017. "The 1872 Introduction to Hovedstrømninger i Det 19de Aarhundredes Litteratur (Main Currents of Nineteenth-Century Literature)." Translated by Lynn R. Wilkinson. *PMLA* 132 (3): 696–705.
- . 1883. *Det moderne Gennembruds Mænd. En Række Portrætter*. Copenhagen: Gyldendal.
- Busk-Jensen, Lise. 1993. "Rædsomme romaner for en penny." In *Nordisk kvindelitteraturhistorie*, edited by Elisabeth Møller-Jensen and Inger-Lise Hjordt-Vetlesen, 215–28. Copenhagen: Rosinante.
- . 2009. "Sædelighedsfejden." In *Dansk litteraturs historie*. Vol. 3: 1870–1920, edited by Lise Busk-Jensen et al., 50–8. Copenhagen: Gyldendal.
- Butler, Judith. 2002. *Gender Trouble: Feminism and the Subversion of Identity*. London: Routledge.
- Cheng, Jonathan. 2020. "Fleshing Out Models of Gender in English-Language Novels (1850–2000)." *Journal of Cultural Analytics* 5 (1): 1–35.
- Christensen, Markus Floris, and Anders Ehlers Dam. 2023. "Indledning Angsten og ordet." In *Angst i dansk litteratur*, edited by Markus Floris Christensen and Anders Ehlers Dam, 9–30. Aarhus: Aarhus University Press.
- Clough, Patricia Ticineto, and Jean Halley. 2007. *The Affective Turn: Theorizing the Social*. Durham, NC: Duke University Press.
- Cohen, Margaret. 1999. *The Sentimental Education of the Novel*. Princeton, NJ: Princeton University Press.
- Dahlerup, Pil. 1984. *Det Moderne gennembruds kvinder*. 2. udgave. Copenhagen: Gyldendal.
- Dalager, Stig, and Anne-Marie Mai. 1982. *Danske kvindelige forfattere: udvikling og perspektiv*. Copenhagen: Gyldendal.
- Felski, Rita. 2008. *Uses of Literature*. Malden, MA: Blackwell.
- Garton, Janet. 2007. "Efterskrift," In *Amalie Skram: Constance Ring*, 291–344. Copenhagen: Borgen/DSL.
- Hamm, Christine. 2006. *Medlidenhet Og Melodrama: Amalie Skrams Romaner Om Ekteskap*. Oslo: Unipub.
- Hjordt-Vetlesen, Inger-Lise, and Birgit Mortensen. 1993. "At elske og elskes." In *Nordisk kvindelitteraturhistorie*, edited by Inger-Lise Hjordt-Vetlesen and Elisabeth Møller-Jensen, 363–71. Copenhagen: Rosinante.
- Hogan, Patrick Colm. 2016. "Affect Studies." In *Oxford Research Encyclopedia of Literature*. Oxford: Oxford University Press.

- Iversen, Irene. 1993. "Når driften truer." In *Nordisk kvindelitteraturhistorie*, edited by Inger-Lise Hjordt-Vetlesen and Elisabeth Møller-Jensen, 419–55. Copenhagen: Rosinante.
- Keen, Suzanne. 2011. "Introduction: Narrative and the Emotions." *Poetics Today* 32 (1): 1–53.
- Kermode, Frank. 1967. *The Sense of an Ending: Studies in the Theory of Fiction*. Oxford: Oxford University Press.
- Kim, Evgeny Kim, and Roman Klinger. 2019. "A Survey on Sentiment and Emotion Analysis for Computational Literary Studies." *Zeitschrift für digitale Geisteswissenschaften*. https://doi.org/10.17175/2019_008.
- Klauk, Tobias, Tilmann Köppe, and Edgar Onea. 2016. "More on Narrative Closure." *Journal of Literary Semantics* 45 (1): 21–41. <https://doi.org/10.1515/jls-2016-0003>.
- Kondrup, Johnny. 2005. "Naturalisme." In *Hovedsporet: dansk litteraturs historie*, edited by Jens Anker Jørgensen et al., 412–45. Copenhagen: Gyldendal.
- Liu, Bing. 2015. *Sentiment Analysis: Mining Opinions, Sentiments, and Emotions*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9781139084789.002>.
- Moi, Toril. 2006. *Henrik Ibsen and the Birth of Modernism*. Oxford: Oxford University Press.
- Møller-Jensen, Elisabeth, Eva Hættner Aurelius, Inger-Lise Hjordt-Vetlesen, Margaretha Fahlgren, Unni Langås, Lone Finnich, and Anne-Marie Mai. 1993–1998. *Nordisk kvindelitteraturhistorie*. Edited by Elisabeth Møller-Jensen. Copenhagen: Rosinante.
- Moretti, Franco. 2000. "The Slaughterhouse of Literature." *Modern Language Quarterly* 61(1): 207–27.
- Mortensen, Birgit. 2023. "Massi Bruhn." In *Dansk Kvindebiografisk Leksikon*. https://kvindebiografiskleksikon.lex.dk/Massi_Bruhn.
- Ngai, Sianne. 2005. *Ugly Feelings*. Cambridge, MA: Harvard University Press.
- Nussbaum, Martha C. 2016. *Litteraturens etikk: følelser og forestillingsevne*. Translated by Agnete Øye. Oslo: Pax.
- Piper, Andrew. 2015. "Novel Devotions: Conversional Reading, Computational Modeling, and the Modern Novel." *New Literary History* 46 (1): 63–98.
- Rebora, Simone. 2023. "Sentiment Analysis in Literary Studies. A Critical Survey." *Digital Humanities Quarterly* 17 (2). <https://www.digitalhumanities.org/dhq/vol/17/2>.
- Rosiek, Jan. 2003. *Andre spor: studier i moderne dansk lyrik*. Hellerup: Spring.
- Schwartz, Camilla. 2022. "Hysteri på tværs: fra myndighedslængsel til voksenalder, fra Skram til Lind, Nordenhof og Rasmussen." In *Læsninger på tværs: litteraturhistorie i praksis*, edited by Handesten Lars, Camilla Schwartz, and Jon Haarder Jon, 321–37. Hellerup: Spring.
- Scott, Joan W. 1986. "Gender: A Useful Category of Historical Analysis." *American Historical Review* 91 (5): 1053–75.

- Skiveren, Tobias. 2019. *Kødets Poiesis: Kropumulige kroppe i ny dansk litteratur*. Copenhagen: Spring.
- Underwood, Ted, David Bamman, and Sabrina Lee. 2018. "The Transformation of Gender in English-Language Fiction." *Journal of Cultural Analytics* 3 (2): 1–25.
- Vikør, Lars S. 2022. "Rettskrivingsreform." In *Store norske leksikon*. <https://snl.no/rettskrivingsreform>.
- Wilkens, Matt. 2015. "Digital Humanities and Its Application in the Study of Literature and Culture." *Comparative Literature* 67 (1): 11–20.