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The Architecture of Fictionality: A Computational Analysis of Narrative Divides*

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Abstract

As both a marker of cultural imagination and a literary construct, fictionality is what defines the fluid borders separating documentary representation and storytelling. This study investigates the ways narrativity and specific genre characteristics differentiate nonfiction from fiction within modern literary works. I utilize narratological theory to analyze the methods texts use for world-creation, suspense-building, and event organization—which are core storytelling strategies—by applying computational distant reading to an extensive English-language corpus. Through measurable features, narrativity is operationalized: these include staging (the presentation of characters and settings), plot progression (how events develop), and cognitive tension (how suspense and uncertainty are managed). The first step in this three-part analysis involves statistical comparisons at the segment level, which show that nonfiction and fiction employ narrativity with systematic differences along their narrative arcs. Following that, it is demonstrated by statistical tests that, aside from the basic fiction/nonfiction divide, particular genres exhibit unique narrativity profiles, thereby confirming the variety found in fictional forms. Lastly, the explanatory power of these narrativity features is highlighted by supervised machine learning, which indicates they can dependably predict fictionality. These computational findings, when taken as a whole, establish that narrativity and its component parts are fundamental to what makes fiction unique as a literary form. This line of research facilitates a legitimate comparative analysis while also showing the computational predictability of narrative arcs in nonfiction as well as fiction. In the end, the investigation here confirms the value of computational approaches for modeling the formal characteristics of fiction, providing new perspectives on storytelling's structure and strengthening the primary role of narrativity within literary scholarship.

KURGUNUN MİMARİSİ: ANLATISALLIĞIN BİLGİSAYAR TEMELLİ ANALİZİ

Öz

Kurmaca, hem edebî bir kurgu düzeni hem de kültürel tahayyülün bir ifadesi olarak, hikâye anlatımıyla metinsel temsil arasındaki değişken sınırları çizen bir yapıdadır. Bu makalede, çağdaş edebiyatta anlatısallık ile türsel niteliklerin kurmacayı, kurmaca dışından nasıl ayırdığı sorgulanmaktadır. Anlatıbilim kuramını temel alarak, geniş ölçekli bir İngilizce derlem üzerinde yürütülen hesaplamalı "uzaktan okuma" yaklaşımıyla; anlatı kuramının temel stratejileri olan anlatı

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evreni, gerilim ve olay örgüsü gibi nitelikleri incelenmektedir. Anlatısallık, ölçülebilir göstergeler üzerinden incelenmektedir: bunlar; sahneleme (mekân ve kişilerin sunumu), olay örgüsünün ilerleyişi (olayların açımlanması) ve bilişsel gerilim (merak/gerilim ile belirsizliğin yönetimi) aşamalarından oluşur. Üç aşamalı çözümlememizde önce segment düzeyinde yapılan istatistiksel karşılaştırmalarla, kurmaca ile kurmaca dışının anlatı olay örgüsünün; hikayenin anlatı bileşenlerini nasıl sistemli bir şekilde farklı kullandığını ortaya çıkarıyoruz. Devamında, istatistiksel testlerle, kurmaca/kurmaca dışı ikiliğinin ötesinde kimi türlerin özgül anlatısallık profilleri taşıdığını göstererek kurmaca biçimlerinin çeşitliliğini doğruluyoruz. Son olarak, denetimli makine öğrenimi ile bu anlatısal özelliklerin kurmacayı güvenilir biçimde öngördüğünü kanıtlayıp kurmacanın temel özelliklerinin anlatı nitelikleri ile tanımlanabildiğini gösteriyoruz. Bir arada değerlendirildiğinde bu hesaplamalı bulgular, anlatısallığın ve bileşenlerinin kurmacanın edebî bir biçim olarak özgüllüğünün merkezinde konumlandığını göstermektedir. Çalışmamız, karşılaştırmalı çözümleme olanağı sunmakta ve ayrıca hem kurmaca hem de kurmaca dışındaki anlatı olay örgüsünün hesaplamalı olarak öngörülebilir olduğunu göstermektedir. Sonuç olarak, araştırmamız kurmacanın biçimsel niteliklerini modellemede hesaplamalı yöntemlerin değerini teyit etmekte; bu da hikâye anlatımının mimarisine yeni içgörüler sağlarken edebiyat çalışmalarında anlatısallığın merkezî konumunu pekiştirmektedir.

Anahtar kelimeler: Kurgu, anlatısallık, hesaplamalı edebiyat çalışmaları, tür sınıflaması, uzak okuma

INTRODUCTION

Fictionality names a mode of language that organizes events, agents, and worlds to produce a distinctive experience of story. All discourse exhibits some degree of narrativity, yet fiction tends to concentrate and orchestrate narrative devices more than nonfiction. On this view, narrativity—rather than mimesis, authorial intention, or paratext alone—offers a strong path toward a formal account of what separates fiction from nonfiction. The present study advances that account through large-scale, computational analysis. At the same time, it situates that analysis within debates that treat narrative as a transgeneric resource and fictionality as a rhetorical stance, so that claims about measurable difference do not ignore long-standing arguments about overlap, hybridity, and reception.

Scholars have long treated plot structure as a key textual boundary between fiction and nonfiction. Classical and modern theories alike describe plots that introduce situations and characters, develop conflicts, and deliver outcomes. Freytag's pyramid codifies one influential variant with exposition, rising action, climax, falling action, and denouement. Alternative models compress this sequence into three core phases (exposition, tension, and resolution) that capture the arc of setup, complication, and outcome while remaining agnostic about genre or period (Freytag, 1968). Across frameworks, narrativity remains central: plots cue expectations, manage uncertainty, and link episodes into coherent wholes. A comparative, feature-based analysis therefore promises traction on the fiction/nonfiction divide.

A first strand of research stresses narrativity as a shared trait across domains. Dorrit Cohn notes that narratology often blurs distinctions by treating narrative as a transgeneric phenomenon

that applies to literature, historiography, and media discourse (Cohn, 1990). García Landa and Pier likewise describe narrative as a structuring force that reaches law, games, and oral storytelling (Garcia Landa & Pier, 2014). Historians have faced similar issues: Hayden White's legacy includes arguments that historiography uses emplotment strategies similar to novels, which puts pressure on any attempt to read historical prose as a purely referential record (Meyer, 2009). Media scholars like Suarez & Gómez (2020) adds that news and documentary forms employ narrativization to produce a sense of reality by pointing out "the verification of the existence of a dramatic unit in non-fiction narratives" (2020, p. 73). From this perspective, narrativity appears necessary but insufficient for fictionality: both fiction and nonfiction rely on sequencing, causality, and patterned progression, yet neither becomes fictional or nonfictional by that reliance alone.

A second strand reframes fictionality as rhetorical rather than structural. Richard Walsh advances a view in which fictionality functions as a communicative stance negotiated by authors and readers, not as a fixed set of textual features (Walsh, 2003). Hence, these features are only "contextual" so much so that "[t]he rhetoric of fictionality is brought into play whenever a narrative is offered or taken as fiction, regardless of issues of form, style, or reference" (Walsh, 2003, p. 115). In a similar vein, Heyne rejects a simple binary grounded in referentiality and warns against single-criterion solutions; conventions and expectations shape both domains, and no single signal—intention, lexicon, or paratext—can fully sort texts (Heyne, 2008). On this account, narrativity by itself cannot do the classificatory work; how speakers frame discourse and how audiences interpret cues determine whether readers take a text as fictional or factual.

A third tradition returns to form and identifies signposts that tend to cluster in fiction. In The *Distinction of Fiction*, Cohn argues that access to characters' inner consciousness marks a limit case for nonfiction, since factual prose cannot legitimately claim omniscient knowledge of mental states (Cohn, 2000). Suzanne Keen shows that some works erase traditional signposts by mimicking nonfiction, which raises classification challenges and heightens the role of context and expectation (Keen, 2003). These studies imply that narrativity as such stays shared, but fictionality often relies on distinctive techniques like free indirect discourse, panoramic omniscience, flexible focalization, features that nonfiction usually avoids or constrains.

Recent scholarship complicates all three perspectives by tracing hybrid genres. Creative nonfiction, literary journalism, and documentary storytelling draw on devices once treated as hallmarks of fiction. Pickett shows that creative nonfiction may adopt unreliable narration to deepen engagement (Pickett, 2013). Aare examines literary journalism and finds imaginative techniques and rhetorical strategies akin to narrative fiction, which challenges assumptions that nonfiction stands apart by virtue of pure referentiality (Aare, 2023). Film theory underscores the point: documentary cinema follows conventions that distinguish it from fictional film, yet it still builds arcs of conflict and resolution that structure viewing experience (Cowie, 2011). Hybridity thus erodes sharp boundary claims and restricts the usefulness of any single formal criterion.

Reader reception and authorial intention add a further layer. Staes argues that fictionality arises from the interplay of intention and reception rather than from narrativity alone; readers may oscillate in their interpretation of writers like Richard Powers or William Vollmann, whose works

shuttle between modes depending on how audiences process paratext and cues (Staes, 2014). Cultural shifts amplify this fluidity. Pignagnoli traces post-postmodern sincerity, memoir, and autofiction as they flow into social media forms; in such spaces, narrativity becomes a shared resource for authenticity rather than a demarcation line (Pignagnoli, 2019). These observations limit any thesis that turns narrativity into a categorical discriminator while leaving open the possibility that narrativity exhibits different patterns across domains.

Work on plot arcs sharpens the question. In fiction, narrative arcs often appear explicit and visible: conflicts build, climaxes crest, resolutions close. Freytag's schema remains a touchstone. As Veale states, "The most psychologically compelling stories are stories of change, in which characters learn and evolve as they fulfil their dreams or become what they most despise." This highlights how character arcs often align with psychological transformation and thematic development (Veale, 2014). Computational approaches support this account: MARCUS, an NLP pipeline, extracts character arcs from event sequences, emotions, and relationships and demonstrates how arcs underwrite coherence in fiction (Bhyravajjula et al., 2022). Sentiment-based "story arcs" map emotional trajectories and reveal recurring shapes across novels (Hu, Liu, Thomsen, et al., 2021; Reagan et al., 2016). These results lend empirical weight to long-standing narratological models.

Nonfiction does not stand outside arc structure. Contrastive narratology shows that nonfiction novels differ from realist novels in narrator roles, focalization, and treatment of plot while still relying on progression (Bal, 2009; Cohn, 2000). Journalistic and biographical prose often adapts techniques of suspense, delayed revelation, and climactic closure in the service of truth claims (Cohn, 1990; Heyne, 2008). Documentary storytelling also depends on conflict and thematic development, though it follows conventions that foreground indexical ties to the world (Cowie, 2011). The distinctiveness between domains thus lies less in the presence of arcs than in their epistemological grounding: fiction often privileges aesthetic coherence and transformation; nonfiction must balance engagement with referential fidelity.

Computational narratology now supplies tools to probe such differences at scale. "Sentiment analysis," for instance, "can capture aspects of such moods, feelings, and attitudes and can be used to summarize a novel's plot in a story arc,' (Hu et al., 2019; Hu, Liu, Gao, et al., 2021; Hu, Liu, Thomsen, et al., 2021) enabling the recovery of archetypal narrative shapes such as tragedies. Similarly, multiple studies have employed sentiment arcs to model and assess narratives by focusing on aspects such as literary genre (Kim et al., 2017), plot archetypes (Reagan et al., 2016), dynamic properties (Hu, Liu, Gao, et al., 2021), narrative mood (Öhman & Rossi, 2023), and reader preferences and perceived quality (Öhman et al., 2024). On the other hand, event-based systems such as MARCUS quantify interactions among characters and events (Bhyravajjula et al., 2022). Other frameworks compute suspense and dramatic tension (O'Neill & Riedl, 2011). Most applications focus on fiction, but the same techniques can test whether nonfiction arcs show distinctive patterns or converge with fictional ones.

Of particular relevance is a recent framework that models narrativity through three constituent elements: the introduction of settings and characters, the unfolding of events, and the management of suspense and uncertainty. The model derives word- and phrase-level indicators for

each element from the English LIWC lexicon and aggregates them over textual segments to capture narrative dynamics across arcs (Boyd et al., 2020). The approach aligns with the tripartite conception of plot and yields measurable proxies for features that theorists identify as core to fiction. It also opens a path for comparison: if fiction and nonfiction differ in average levels of these elements or in how they distribute them across beginnings, middles, and ends, a corpus-scale test should detect the difference.

This study adapts and extends this framework to a contemporary, large-scale English-language corpus that includes both fiction and nonfiction. I segment texts into equal-length units across their full span, extract indicators for the three narrativity elements at the segment level, and trace their trajectories across normalized arcs. This design supports direct comparison of how fiction and nonfiction distribute narrativity across beginnings, middles, and ends. It also supports systematic tests of whether specific genres within fiction exhibit distinct narrativity profiles. Because features derive from interpretable lexica and because I retain positional information along the arc, results remain transparent and open to literary interpretation.

Three research questions guide the analysis. First, do quantifiable narrativity features separate fiction from nonfiction at scale? The expectation is that fiction shows higher and more structured levels of narrativity across arcs, with pronounced organization in setup and complication phases. Second, beyond the binary distinction, do genres within fiction display stable, discriminative narrativity profiles? I expect, for example, that mystery and thriller novels elevate signals associated with uncertainty and suspense in mid-arc segments, while literary realism foregrounds character and setting early. Third, do these features possess predictive power for fictionality? If narrativity constitutes the formal core of fiction, supervised models that rely on these features should classify fiction and nonfiction with high accuracy and should retain interpretability through feature weights and arc positions.

The study contributes to debates on fictionality and to methods in computational literary analysis in several ways. Conceptually, it re-centers narrativity as the principal discriminator of fiction independent of authorial labels or market categories and does so with explicit, testable measures. Methodologically, it formalizes a pipeline for segment-level analysis of narrative arcs that scales to thousands of texts and remains transparent: each feature and each arc position admits literary interpretation. Empirically, it presents evidence that fiction and nonfiction differ not only in average levels of narrativity but also in the organization of those levels across arcs; that genres within fiction adopt distinctive narrative strategies; and that a small set of narrativity features suffices for reliable prediction of fictionality. These results support the claim that narrativity forms the architecture of fiction while also revealing patterned narrative structure in nonfiction.

The stakes extend beyond classification. A feature-based account of narrativity clarifies how texts guide readers through worlds, events, and uncertainties and thus connects formal description to cognitive and affective experience. The approach also theoretically enables comparison across periods, languages, and media, since the features rest on general functions of storytelling rather than on era- or genre-specific motifs. By grounding interpretation in reproducible measures, the study strengthens bridges between quantitative analysis and theory-driven criticism and offers tools that

scholars can audit, reuse, and refine. At the same time, the argument acknowledges limits that follow from rhetorical and reception-based theories: paratexts and cultural expectations continue to shape how audiences sort texts even when internal features point in one direction or another (Heyne, 2008; Staes, 2014; Walsh, 2003).

Finally, this work situates its contribution within the current landscape. Narrativity functions as a shared resource across fiction and nonfiction; fictionality often operates as a rhetorical stance; signposts of interiority and omniscience persist as local markers; hybrid genres erode hard borders; readers and institutions play decisive roles in classification; and computational methods now permit direct tests at scale. Against that background, this corpus-level study evaluates narrativity features that map to settings and characters, events, and suspense/uncertainty; measures their trajectories across normalized arcs; and tests their power to separate fiction from nonfiction and to differentiate genres within fiction. The remainder of the article details the corpus, segmentation scheme, and feature construction based on LIWC-derived lexica for the three narrativity elements; presents segment-level and arc-level statistical comparisons across fiction and nonfiction; analyzes genre-specific narrativity profiles; and evaluates supervised models that predict fictionality from narrativity features. A final section discusses implications for theories of fiction, limitations of the present design, and directions for cross-lingual and cross-media extensions.

1. METHODOLOGY

Figure 1 shows the research design overview. Corpus, feature extraction and analytical procedures conducted are explained below:

1.1. Corpus

This study employed the CONLIT Dataset of Contemporary Literature (Piper, 2022), a publicly available corpus comprising approximately 2,700 English-language volumes published between 2001 and 2021 and distributed across twelve genres. The dataset includes extensive bibliographic metadata, extracted features from complete textual files, and a binary classification distinguishing Fiction (FIC) from Non-Fiction (NON). Access was obtained through the Figshare repository under a CC BY-NC 4.0 licence, following formal authorization from the curator, Andrew Piper. The original description in the *Journal of Open Humanities Data* specifies the principles of collection, the protocols of textual cleaning, and the procedures adopted to ensure representativeness.

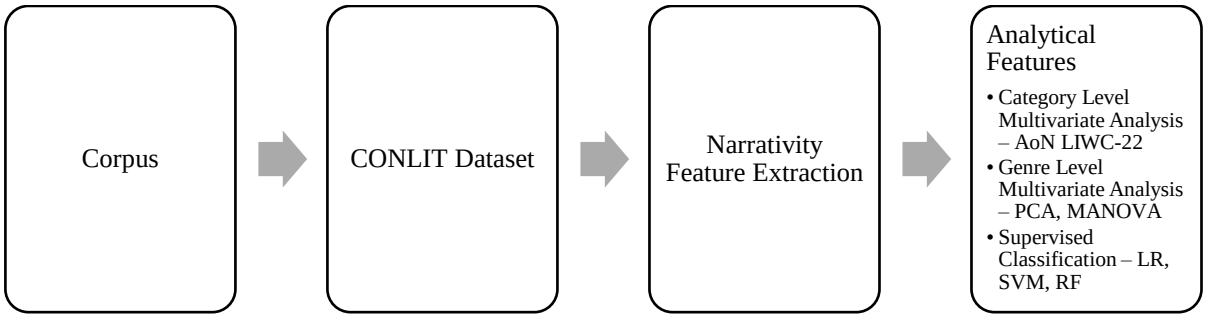

Figure 1. Research methodology pipeline

1.2. Narrativity Feature Extraction

I mobilized the Arc of Narrative module in LIWC-22 (Linguistic Inquiry and Word Count) to analyze the texts. Each text was divided into five equal segments and processed through the Narrative Arc feature, which operationalizes three structural dimensions: Staging, Plot Progression,

and Cognitive Tension.[1] This method follows the guidelines outlined by Boyd et al. (2020) in their seminal paper, which details the process of constructing dictionaries for each narrative category. For each category, a lexicon-based dictionary is compiled, and the frequency of words from these lexical categories is then divided by the total number of words in the text. This feature generates both continuous trajectories and scalar narrativity scores and presents normalized z-scores for each structural dimension across the segmented chunks as well as visualizes the narrative arc over the course of plot progression. The module follows the procedure originally introduced by Boyd et al. (2020) and further detailed in the LIWC technical manual.

2.3. Analytical Procedures

Category-Level Multivariate Analysis

Each book, divided into five equal-length quintiles, produced nineteen feature values per text. These values consisted of three arc dimensions multiplied by five segments, together with the overall narrativity score and the narrativity scores for each dimension at the segment level. Mean trajectories for Fiction (FIC) and Non-Fiction (NON) were plotted in order to visualize structural tendencies across narrative position.

To assess statistical differences, a three-factor MANOVA tested the joint effect of category on Staging, Plot Progression, and Cognitive Tension across quintiles. This test was designed to evaluate whether fiction and non-fiction exhibit distinct narrative arcs while mitigating type-I error inflation that typically arises from repeated univariate tests. Pillai's trace was employed as the omnibus statistic, and, when significant, dimension-wise ANOVA contrasts were conducted. This procedure established category-level divergences in narrative structure and provided effect sizes that informed subsequent genre-specific analyses.

Genre-Level Multivariate Analysis

For each of the twelve genres, the study calculated a centroid within the nineteen-dimensional narrativity space in order to characterize the genre-typical narrative shape. A principal component analysis (PCA) then projected these centroids into two dimensions. This projection revealed clustering patterns and outliers without imposing distributional assumptions. A second MANOVA assessed whether genre membership accounted for significant variance in narrativity features beyond the broader Fiction/Non-Fiction distinction. This step clarified the contribution of individual genres to narrative variation and identified structurally distinctive genres for closer investigation.

Supervised Classification of Category Labels

The predictor matrix comprised all narrativity variables, with fifteen per text (three dimensions across five quintiles) in addition to the overall narrativity scores (nineteen variables in total). Three complementary classifiers were implemented: logistic regression with ℓ^2 regularisation, a linear support-vector machine (SVM), and a random forest consisting of 500 trees. This

[1] The CONLIT dataset, which provides comprehensive linguistic features including metadata, word frequencies, Parts-of-Speech (POS) data, and supersense tagging, does not typically incorporate proprietary features such as those derived from the Linguistic Inquiry and Word Count (LIWC) modules, including Arch of Narrativity (AoN). Given the copyrighted nature of the literary works within the dataset, direct application of such modules was restricted. The author is deeply grateful to the dataset owner, Andrew Piper, who personally granted permission for and executed the LIWC AoN analysis, subsequently providing the raw resulting features through private correspondence for inclusion in this study.

combination balanced interpretability with the capacity to model non-linear relationships. Stratified ten-fold cross-validation was employed to ensure disjoint training and test partitions. Evaluation metrics included accuracy, macro-averaged F_1, and the area under the ROC curve.

Software Environment

Text processing and data wrangling were carried out in R 4.3.2 inside R Studio IDE with tidy data principles (*tidytext*, *tidyr* and *tidymodels* libraries enabled). LIWC-22 output was batch-exported via the command-line interface. MANOVA and PCA were implemented using *tidymodels* and *tidyr*, and visualizations were produced with *ggplot2*. All code and parameter settings are preserved in a github repository to ensure reproducibility[2].

2. RESULTS and DISCUSSION

2.1. Narrative arcs by category

A growing body of research indicates that the distinction between fiction and nonfiction lies not simply in the presence of plot or suspense as both domains use those devices; but in where the narrativity is concentrated across the arc. Fiction tends to invest early in vivid scenes, character development, and immersive setup; and generates emotional uncertainty and tension at the mid-point. Non-fiction, by contrast, typically accumulates claims, evidence, and argumentative stakes toward a decisive end. This asymmetry in the arc position of cognitive and affective pressure has been identified as a defining feature of fictionality. For instance, narrative tension in fiction emerges from curiosity and suspense during plot development, while nonfiction evokes cognitive effects centered on evaluation and reasoning, especially near its conclusion (Bermejo-Berros et al., 2022). Large-scale text analyses confirm this: traditional narratives such as novels and films exhibit a common structure in which staging is concentrated early, tension peaks mid-arc, and resolution arrives late, while fact-based narratives like TED Talks and legal opinions concentrate cognitive tension and plot progression toward the end (Boyd et al., 2020). Readers also recall significantly more detail and language when they believe a narrative is fictional, suggesting deeper early engagement with scene and persona (Hendersen & Clark, 2007).

[2] While the CONLIT Dataset is freely available to researchers, the corresponding Arc of Narrative results are currently restricted and require permission from the curator, Andrew Piper, for access, as they have not been publicly released. To inquire about reproducing the experiments, please contact me via email.

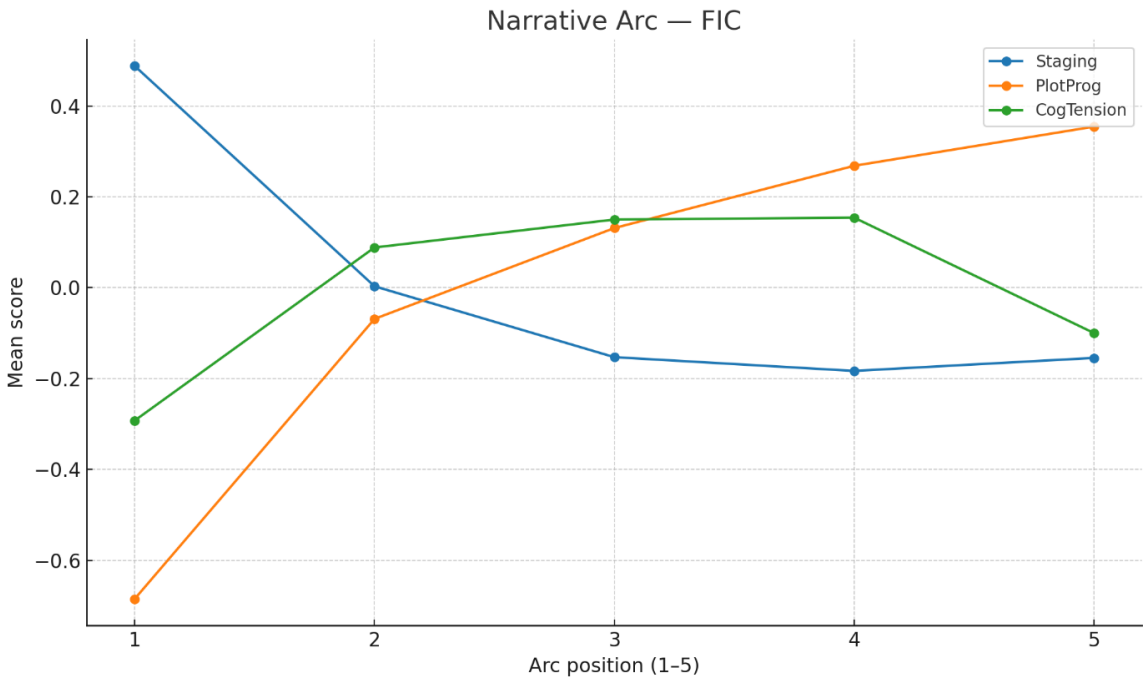

Figure 2. Narrative Arc of Fiction Category

The arc panels establish two distinct macro-patterns. In fiction (see *Figure 2*), **Staging** dominates the first quintile and then declines through the middle of the arc. **PlotProg** begins far below the mean at the outset and climbs monotonically to the highest values at the close. **CogTension** rises from a low baseline, reaches a mid-arc crest near the third and fourth quintiles, and then eases off toward the end. The shape thus aligns with an orientation → complication → release sequence: early world-commitment, a mid-arc intensity phase, and a taper that prepares closure.

Non-fiction traces a different route (see *Figure 3*). **Staging** starts modestly positive and holds steady through the third quintile before a sharp drop near the end. By contrast, both **PlotProg** and **CogTension** climb throughout and reach their maximum at the fifth quintile. Non-fiction thus concentrates argumentative and evidential force at the conclusion rather than at the center. In short, fiction invests heavily in setup and orchestrates a mid-course surge; non-fiction accumulates forward motion and cognitive pressure until the final section. This difference in arc dynamics echoes Dan Shen's work on narrative "covert progression," which highlights how fiction embeds rhetorical and aesthetic complexity earlier in the narrative, whereas nonfiction leverages late-stage epistemic payoff (Shen, 2021).

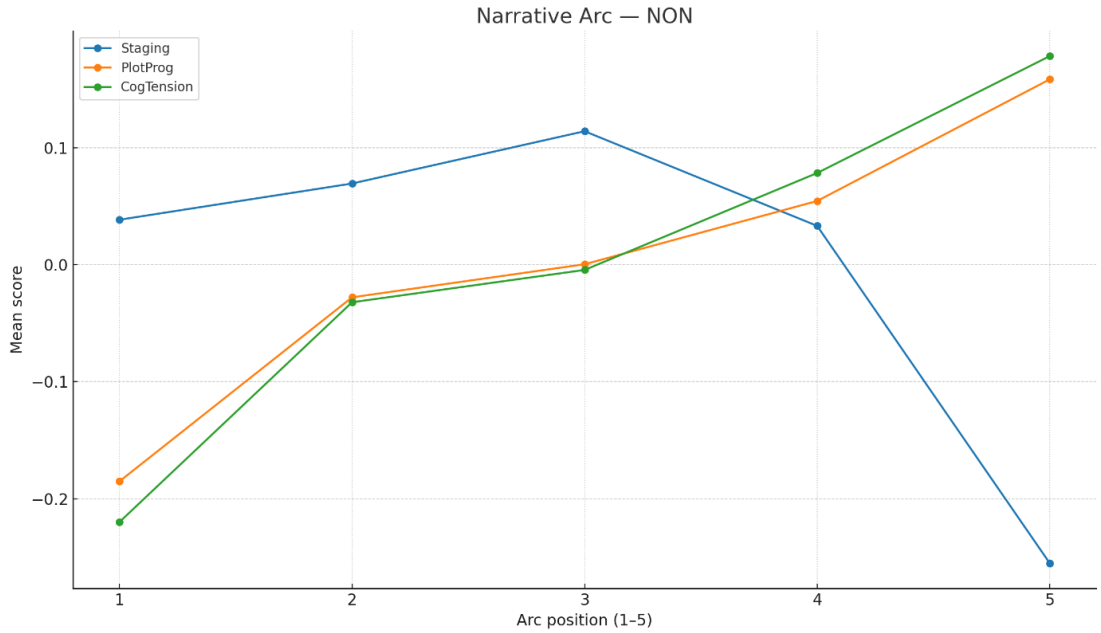

Figure 3. Narrative Arc of Non-Fiction Category

A multivariate test over all arc positions in Table 1 confirms that these differences do not reduce to local fluctuations. The MANOVA for the FIC/NON factor returns **Wilks' λ = 0.861, F(19, 2734) = 23.19, p < .001**; Pillai's trace, Hotelling–Lawley, and Roy's root converge on the same inference. The joint profile of Staging, PlotProg, and CogTension across quintiles therefore separates the two categories in a stable fashion.

Statistic	Statistic Value	Num DF	Den DF	F	p-value
Wilks' λ	0.861228	19	2734	23.18616	< .001
Pillai's trace	0.138772	19	2734	23.18616	< .001
Hotelling-Lawley trace	0.161133	19	2734	23.18616	< .001
Roy's greatest root	0.161133	19	2734	23.18616	< .001

Table 1. Category Level MANOVA Test Result

Two implications follow. First, narrativity as a distribution across an arc carries more signal than any single dimension in isolation. The fiction profile hinges on an early surplus of Staging plus a mid-course peak in CogTension; the non-fiction profile hinges on a late peak in both PlotProg and CogTension while Staging recedes. Second, the categorical contrast agrees with the study's design and aims, which place arc position at the center of measurement. Taken together, arc position rather than any single feature appears to be diagnostic of fictionality, consistent with rhetorical theories of fiction as a communicative stance (Cohn, 2000; Nielsen et al., 2015; Phelan & Frow, 2022; Walsh, 2003) and with classic accounts of plot tempo (Freytag, 1968; Genette, 1980). The fiction arcs exhibit early experiential staging and a mid-course peak in affect (suspense/curiosity), whereas nonfiction arcs back-load cognitive tension and argumentative stakes (Bermejo-Berros et al., 2022; Boyd et al., 2020).

2.2. Genre structure in narrativity space

Figure 4 shows the centroid map which suggests that genres achieve fictionality by different means. Mystery and science fiction—high on PC2—pair strong mid-arc tension with compact resolution; YA—low on PC2—relies on a smoother progression. Romance and mass-market segments occupy a middle ground. Such differentiation supports close readings that align formal arc shape with genre-specific contracts. This pattern aligns with existing studies showing that mystery and science fiction frequently rely on narrative strategies that maximize suspense, uncertainty, and surprise at the mid-point, which culminates in swift resolution or revelation (Bermejo-Berros et al., 2022). In contrast, young adult fiction has been shown to follow a more evenly modulated arc and places consistent emphasis on character development and emotional continuity throughout the story rather than dramatic mid-point peaks. Romance, often driven by relational arcs and emotional tension, typically unfolds with moderate build-up and resolution, placing it structurally between high-tension genres and smoother, youth-targeted formats (Boyd et al., 2020).

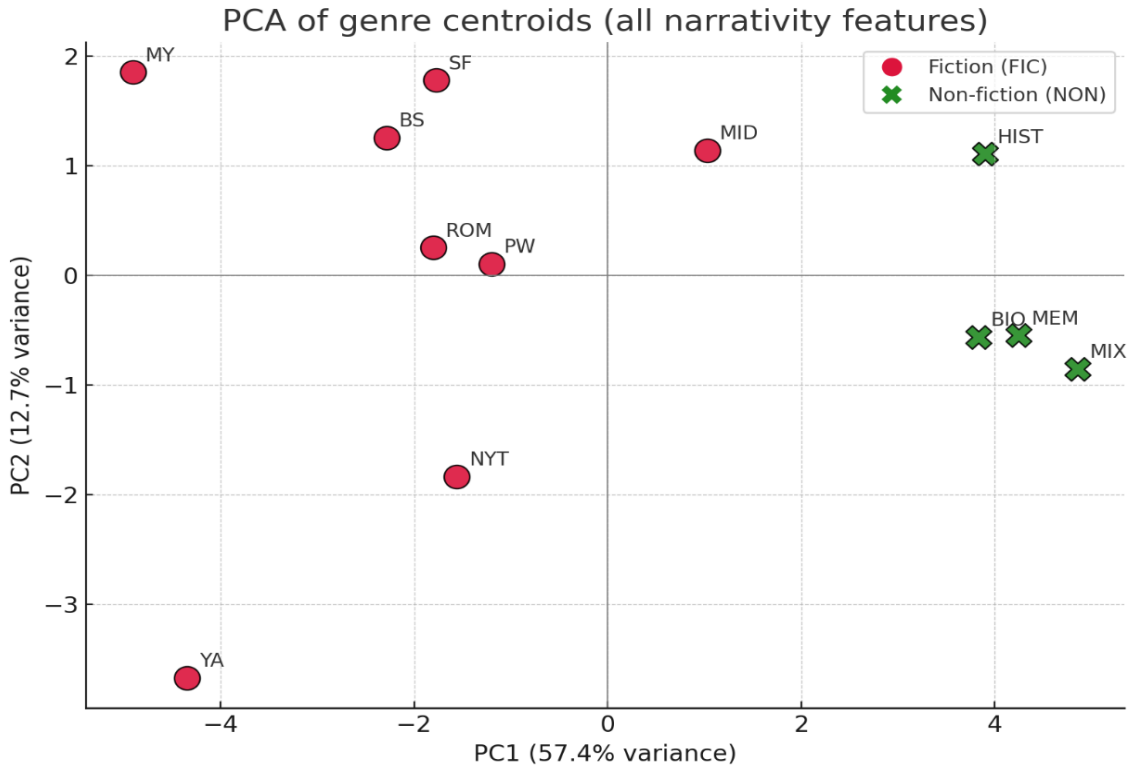

Figure 4. Genre Level PCA Genre Centroids

The PCA of genre centroids projects the nineteen-dimensional narrativity space onto two principal axes (PC1 = 57.4%, PC2 = 12.7% of variance). The scatter reveals a polarity along PC1: all non-fiction centroids (HIST, BIO, MEM, MIX) occupy the positive half-plane, whereas all fiction centroids lie on the negative side. The gap along PC1 appears wide rather than marginal, with no visible overlap between the two sets of centroids. This axis thus functions as a fictionality gradient at the level of narrativity profiles.

Within fiction, PC2 arranges genres along secondary contrasts. Young Adult (YA) rests at the lowest PC2 coordinate, while Mystery (MY) and Science Fiction (SF) sit highest; Romance (ROM), Bestseller (BS), and Publisher's Weekly (PW) cluster near the origin. Although loadings are not reported here, the arc panels suggest a plausible reading: genres with strong mid-arc pressure and

clear release (e.g., MY, SF) move upward on PC2, whereas genres with gentler modulation (e.g., YA) move downward. The PCA therefore visualizes both the categorical boundary and internal variety. Genre differences along PC2 are interpretable as contrasts in mid-arc pressure versus even modulation: mystery/SF (high PC2) maximize mid-arc uncertainty with swift revelation (Todorov, 2010), YA (low PC2) sustains character-centered development with fewer sharp peaks, and romance occupies a mid-range shaped by relational tension and conventional closure (Regis, 2003).

Omnibus multivariate test

An omnibus MANOVA at the genre level corroborates the picture. A Wilks' lambda well below 1 and an $F \approx 4.27$ ($p \ll .001$) as shown in Table 2 confirm that **genre as a factor explains a significant portion of variance when *all 19 narrativity dimensions are considered together***.

Statistic	Statistic Value	Num DF	Den DF	F	p-value
Wilks' λ	**0.725**	209	26091	4.26800	< .001

Table 2. Genre Level MANOVA Test Result

Genre thus introduces systematic structure beyond the fiction/non-fiction split, consistent with the expectation that different fictional traditions deploy distinct narrative strategies.

2.3. Predictive validity

Supervised classifiers that rely only on narrativity variables achieve robust out-of-sample performance. Logistic regression attains accuracy = 0.750, macro-F1 = 0.635; an RBF-kernel SVM tracks this result (accuracy = 0.748, macro-F1 = 0.622); a random forest yields a slightly lower score (accuracy = 0.730, macro-F1 = 0.607). Macro-recall around 0.60 across models signals non-trivial error but leaves a large margin over chance (0.50) (see Table 3). Two conclusions follow. First, narrativity alone encodes sufficient structure to support reliable category prediction: an empirical anchor for the claim that narrativity forms the architecture of fiction.

This conclusion is echoed in recent machine learning research, which shows that narrativity features such as syntactic structure, lexical choices, and part-of-speech distributions can effectively distinguish fiction from non-fiction at both document and paragraph levels. For example, Kazmi et al. (2022) used linguistically motivated features in a logistic regression classifier and found that fiction tends to display higher character-level diversity and lower lexical density compared to non-fiction. These findings corroborate the value of interpretable features for classification and validate the theoretical framework underpinning narrativity dimensions.

Model	Accuracy	Precision (macro)	Recall (macro)	F1-Score (macro)
Logistic Regression	**0.750**	0.715	0.625	**0.635**
SVM (RBF)	0.748	**0.719**	0.615	0.622
Random Forest	0.730	0.674	**0.602**	0.607

Table 3. Category Level Supervised Classification

Second, the near parity between a linear model and a non-linear kernel implies an almost linear separation in the feature space, a result that aligns with the clear PC1 divide in the centroid plot. The

success of a simple linear boundary and the clarity of PC1 imply an interpretable mechanism rather than a black-box signal. Feature weights from the logistic model can serve as stylistic evidence for arc positions; this point strengthens the bridge between quantitative analysis and narratological argument. Related work in explainable AI has also emphasized the role of linear classifiers in generating semantically meaningful insights, showing that logistic models not only predict accurately but also provide transparent justifications of genre differences (Biran & McKeown, 2014). Predictive models trained on narrativity features reach ~0.75 accuracy; the success of linear classification and the dominant PC1 divide argue for an interpretable boundary. And this aligns with prior work on fiction/nonfiction separability using linguistic features (Biran & McKeown, 2014; Kazmi et al., 2022).

CONCLUSION

This study tested whether quantifiable dimensions of narrativity separate fiction from nonfiction and whether genres within fiction display distinct arc profiles across a large contemporary English corpus. Segment-based measures reveal an early surplus of setup and a mid-arc crest of cognitive tension in fiction, while nonfiction concentrates forward motion and epistemic pressure in final segments; linear classifiers that rely on these features predict category labels with robust accuracy.

These results warrant an arc-centric account of fictionality. Fiction asserts identity through three linked moves: generous early world disclosure, sustained pressure on causal hypotheses near the center, and release that privileges aesthetic closure over evidential summation. Nonfiction follows a complementary logic: modest entry, cumulative argument, and a terminal surge of reasons and warrants. The boundary thus appears not as a ban on shared devices but as a difference in where and when texts invest formal energy. Genres refine the picture. Mystery and science fiction accentuate mid-arc uncertainty and compress resolution; young-adult fiction levels the curve; romance holds to relational desire and conventional closure. The map of narrativity therefore locates fiction's distinctiveness in positional choreography rather than in any single cue such as referentiality or authorial intention.

The pattern accords with rhetorical views of fictionality as a stance negotiated by authors and readers, yet adds a formal anchor: a distribution of staging, plot progression, and cognitive tension that scripts curiosity, delay, and payoff at specific arc slots. The interior economy of attention—who, where, and what next—emerges as the structural core that invites counterfactual play, intensifies empathy, and frames ethical tests. In short, fiction organizes time and knowledge so that surprise, explanation, and closure align with a design for affect; nonfiction organizes them so that inquiry, warrant, and judgment crest at the end.

Computational analysis strengthens this claim. Interpretable lexica linked to arc position yield transparent measures, allow replication, and scale analysis to hundreds of texts without loss of hermeneutic traction. Feature weights and coordinates on the arc give evidence that critics can inspect, contest, and reuse. Thus, quantitative method does not replace criticism; it furnishes a calibrated lens that turns narratological hypotheses into testable propositions and returns evidence

that advances theory. Yet, limits persist. LIWC vocabularies capture only part of narrative labor; equal-length segmentation may blur scene shifts; paratext and reception still sway category judgments. Future work can extend the arc model with focalization and interior access, test other languages and media, and relate arc position to local stylistic cues such as free indirect discourse or deictic shifts. Even with those caveats, the present study shows that narrativity, measured as a positional architecture, offers a durable formal index of fictionality.

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Günce Yayınları

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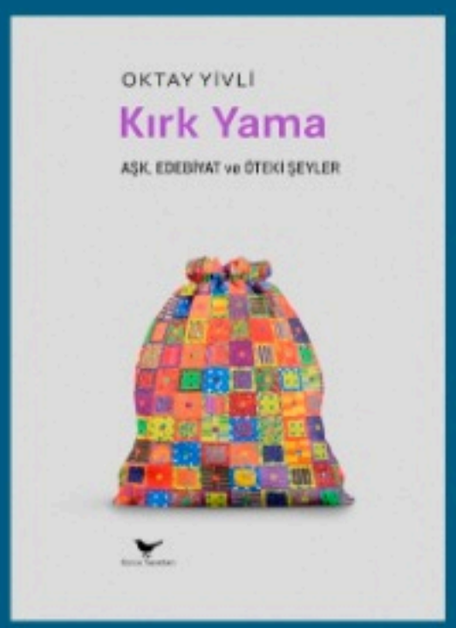

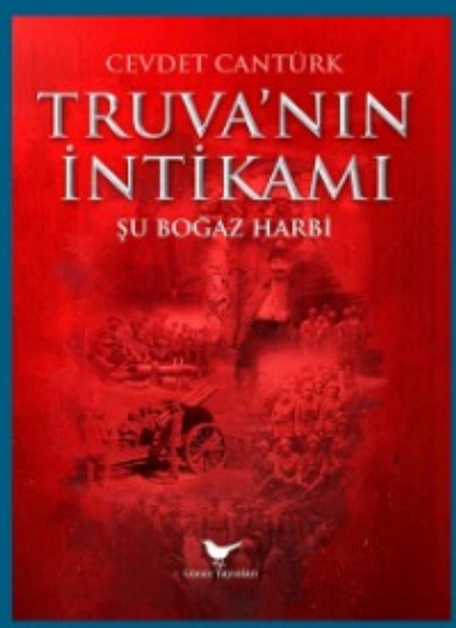

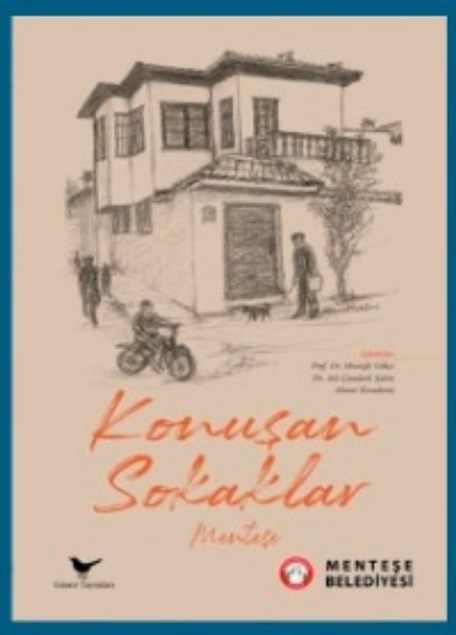

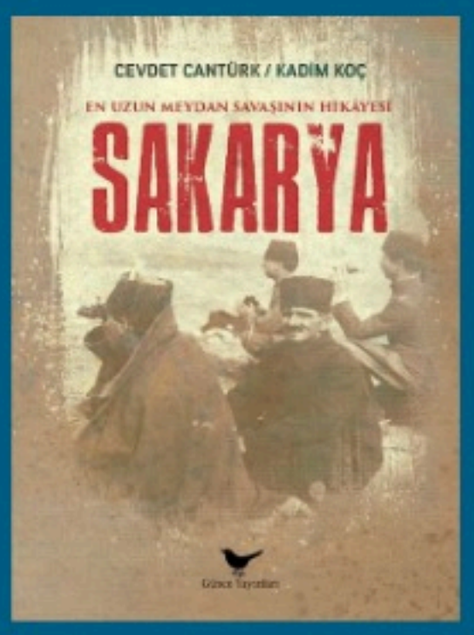

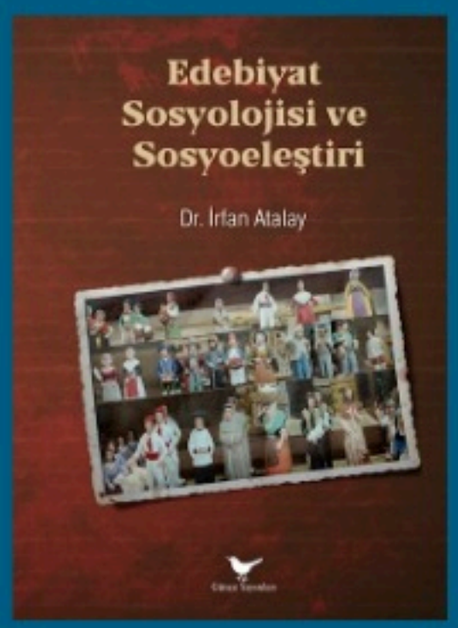

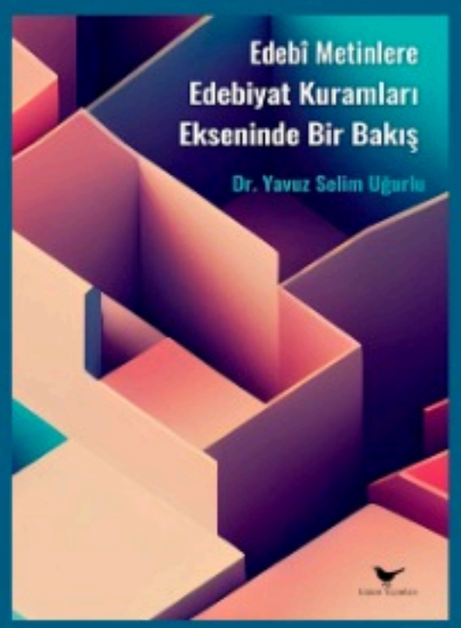

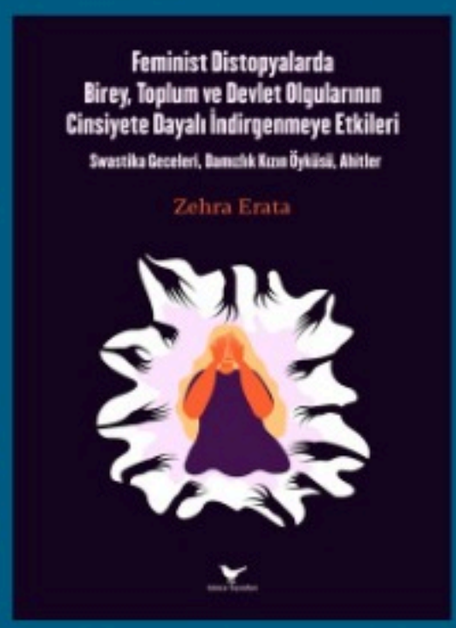

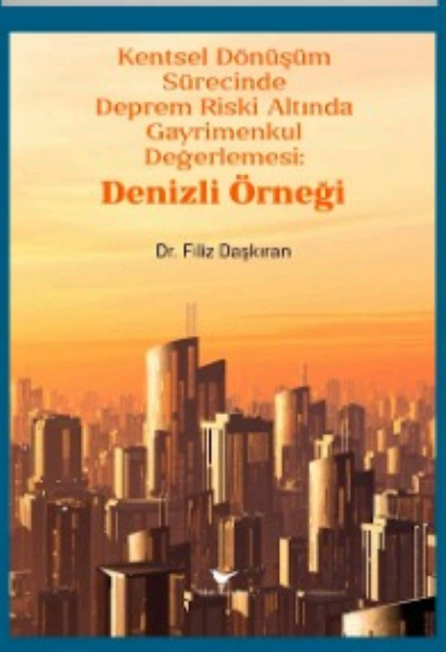

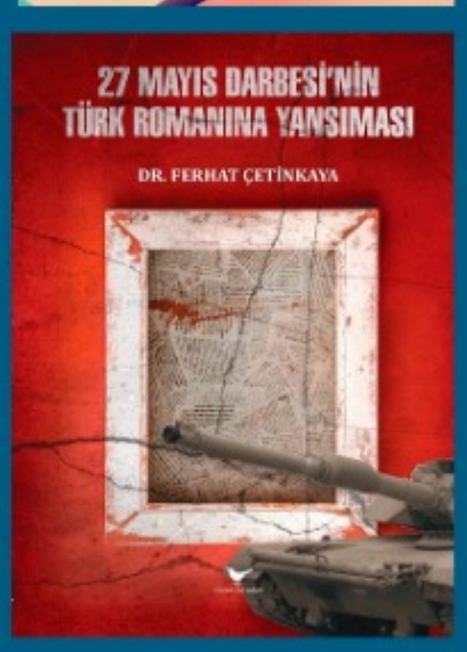

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