



## A LEXICO-SEMANTIC AND CONTEXTUAL STUDY OF LANGUAGE PATTERNS IN DANIEL DEFOE'S *ROBINSON CRUSOE*

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### **Abstract**

*This study applies a mixed-methods digital humanities approach to Daniel Defoe's Robinson Crusoe, combining computational text analysis (using Voyant Tools) with traditional literary criticism. We analyzed the novel's entire text (sourced from Project Gutenberg) to examine word frequencies, collocations, and semantic patterns. Crusoe's narrative has long been studied for its themes of colonialism, economic individualism, and spiritual redemption, and this study introduces a quantitative lens to these issues. Our computational findings provide empirical support for enduring literary interpretations. Using frequency counts and collocation patterns, we systematically traced how Crusoe's narrative perspective on ownership and hierarchy is linguistically encoded. Most strikingly, the possessive pronoun "my" appears over 1,800 times, empirically highlighting Crusoe's colonial mindset of ownership and personal control. The lexico-semantic analysis identified two overlapping semantic domains: one of pragmatic labor (with frequent words like "make," "get," and "work") and one of spiritual providence (with terms such as "God," "pray," and "deliver"). This intersection maps Crusoe's dual focus on material survival and spiritual reliance throughout his ordeal. Contextual collocation analysis further reveals that the term "savages" often co-occurs with language of fear and threat reflecting Crusoe's portrayal of Indigenous people as dangerous while the frequency of "master" rises over time, marking the development of hierarchical relationships (for example, between Crusoe and Friday). These patterns quantitatively confirm that Crusoe's language encodes hierarchical and colonial power dynamics as critics have long argued. Overall, these computational insights show that Robinson Crusoe's central themes are structurally embedded in its linguistic texture. By making Crusoe's hidden linguistic architecture visible, computational tools transform subjective interpretation*



*into evidence based insight, bridging distant and close reading. This reproducible methodology not only enriches our understanding of Defoe's ideological framework but also serves as a model for digital literary inquiry in other canonical works, demonstrating a replicable approach.*

**Key Words:** *Lexico-semantic features; Voyant analysis; Robinson Crusoe; Daniel Defoe*

## 1. Introduction

Robinson Crusoe by Daniel Defoe is a famous, foundational book in English literature, recognized as one of the first modern novels. For hundreds of years, critics have studied its important themes like survival, colonialism, and religion by carefully reading the text. However, this study is going to use computers and digital tools (Digital Humanities) to analyze the book in a more systematic, large-scale way. This research has three main parts: words, meaning, and history. First, it will perform a lexical analysis by using computers to count and track how often and where the most important words appear. This helps to uncover the basic building blocks of Crusoe's language. Second, it will perform a semantic analysis by interpreting the connections between these words to reveal deeper themes. Finally, the contextual analysis will connect these language findings to the historical background of the early 1700s, especially Britain's desire for empire and the emphasis on hard work. By using software like Voyant, the goal isn't to replace old findings but to add hard, data-driven evidence to what we already know, proving or highlighting patterns in Defoe's classic novel that weren't visible before.

### 1.1. Background of the Study

The emergence of Digital Humanities has reshaped literary scholarship by integrating computational methods with traditional close reading, enabling new possibilities for textual interpretation. This shift represents not just technological enhancement but a major reorientation in how literature is studied. Digital Humanities encourages dialogue between scientific methodology and humanistic inquiry, making it possible to observe large scale textual patterns through what Franco Moretti terms "distant reading," while still allowing detailed analysis of individual canonical works. In this context, the present study applies digital text analysis to Daniel Defoe's Robinson Crusoe, seeking to reveal patterns that traditional close reading often overlooks.

Critical studies of Robinson Crusoe demonstrate diverse interpretive traditions. Ian Watt (1957) framed the novel as foundational to formal realism and economic individualism. Edward Said (1993) reinterpreted it as embedded in imperial ideology, while Peter Hulme (1992) examined its discursive construction of colonial hierarchy. G.A. Starr (1965) emphasized the novel's structure as a spiritual autobiography, and Lydia Liu (2009) highlighted its engagement with global material networks. While influential, these interpretations rely primarily on selective textual evidence.

This study addresses that limitation through Digital Humanities methods, specifically Voyant Tools (Sinclair & Rockwell, 2016), which provide quantitative insights through word frequency patterns, collocations, and semantic clusters. Such analysis aligns with Stephen Ramsay's (2011) concept of "algorithmic criticism" and Matthew Jockers' (2013) demonstration of computational literary inquiry. By examining the novel as complete linguistic data, this research tests whether themes of colonial control, religious transformation, and material labor are quantitatively embedded in Crusoe's language. Ultimately, the study aims to bridge traditional close reading with data driven analysis, enriching our understanding of this canonical text.

Table 1. Previous studies regarding Defoe's narratives



Author/s	Year	Topic	Findings	Gaps
<b>Ian Watt</b>	1957	The Rise of the Novel : Formal realism and economic individualism in Robinson Crusoe	Identified Crusoe as the prototype of the modern economic individual; emphasized materialism and self-reliance.	Focused mainly on thematic interpretation; lacked linguistic or computational analysis.
<b>Edward Said</b>	1993	Culture and Imperialism Postcolonial reading of Defoe's narrative	Highlighted colonial ideology and representation of the other.	Relied on close reading did not provide empirical or quantitative linguistic evidence.
<b>Maximilian E. Novak</b>	1962	Economics and the Fiction of Daniel Defoe Economic theory in literature	Showed that Defoe's fiction mirrors capitalist accumulation and practical labor.	Did not analyze the linguistic patterns that reflect these economic ideas.
<b>G.A. Starr</b>	1965	Defoe and Spiritual Autobiography Spiritual dimension in Robinson Crusoe	Argued that Crusoe's narrative parallels Puritan conversion and divine providence.	Overlooked how linguistic choices (e.g. "God," "sin," "deliver") construct spirituality quantitatively.
<b>Franco Moretti</b>	2013	Distant Reading Using computational methods in literary history	Proposed "distant reading" to visualize patterns across large texts through data.	Did not apply methods directly to Robinson Crusoe, gap in applying digital tools to canonical English novels.
<b>Matthew L. Jockers</b>	2013	Voyant Tools Digital text analysis in humanities research	Developed a web based tool for lexical and semantic visualization.	Tool not yet applied to test colonial and spiritual themes of Robinson Crusoe quantitatively.

### 1.3 Rationale of the Study



Existing scholarship on Robinson Crusoe identifies key themes but lacks the empirical linguistic dimension that digital methods provide. For example, Watt (1957) famously analyzes Crusoe's economic individualism arguing that Crusoe embodies capitalist self-reliance and profit seeking but Watt's approach is entirely historical and literary, without any computational or quantitative text analysis. Similarly, Novak (1962) devotes chapters to Crusoe's "Original Sin" and its economic meaning, underscoring the novel's capitalist subtext, yet Novak, too, never examines Crusoe's actual word usage, leaving the language of economics unmeasured. The present study fills these gaps by applying lexical analysis to Crusoe's text. For example, software can quantify how often key economic terms (like "profit," "industry," or "goods") occur and in what contexts, providing objective data on Crusoe's vocabulary. This complements Watt's and Novak's insights by empirically verifying whether Crusoe's language actually reflects the ideological themes they describe.

Likewise, Said (1993) and Starr (1965) offer important readings of Crusoe's colonial and spiritual dimensions but rely on close reading without quantitative support. Said identifies Crusoe as an archetype of colonial ideology noting that Robinson Crusoe "set the precedent" for imperial narratives by depicting a European establishing dominion in a distant land yet his analysis does not include any corpus based evidence. Starr interprets Crusoe as a Protestant spiritual autobiography filled with providential meaning but Starr's study is entirely qualitative. Our study addresses these omissions by using semantic and contextual analysis. For instance, we can trace Crusoe's references to Empire (e.g. words like "savage," "slave," "Providence") and quantify their frequency and co occurrence, thus testing Said's and Starr's claims with data. In short, digital text mining allows us to map patterns of colonial and religious language in Crusoe that earlier critics could only discuss abstractly.

Finally, the methodological advances of Moretti and Jockers inform our approach. Moretti (2013) champions "distant reading" as a paradigm of large scale text analysis, but his work does not actually apply these methods to Robinson Crusoe. Jockers (2013) develops macroanalytic DH tools for literary history, yet he has not used them to probe Crusoe's specific treatment of empire or faith. Our study explicitly bridges this gap, we apply Moretti's and Jockers's computational techniques to Robinson Crusoe itself. By running topic models, word network analyses, and lexical frequency studies on Crusoe's text, we generate quantitative evidence on the novel's ideological content. In doing so, we directly respond to each prior limitation: we supply the linguistic data that Watt and Novak lacked; we provide empirical backing for Said's and Starr's interpretations; and we operationalize distant reading tools on Crusoe for the first time. This holistic digital humanities approach combining lexical, semantic, and contextual analysis thus yields a richer, data driven understanding of Robinson Crusoe than any single traditional study could offer.

#### 1.4 Research Questions

1. How does the frequent use of possessive language ("my," "own") and verbs of control demonstrate a colonial mindset?
2. To what extent does the evolution of religious vocabulary support a reading of the novel as a genuine spiritual autobiography?
3. How does the predominance of practical, concrete nouns and action verbs thematically emphasize self reliance and pragmatism?

#### 1.5 Purpose of the Study



The overall purpose of this research is to apply computational analysis, a method from the Digital Humanities to Daniel Defoe's *Robinson Crusoe*. By doing this, we aim to move past traditional close reading to provide empirical, data driven evidence for the novel's main themes. This systematic study is organized around three specific goals, which involve analyzing the text at the word level, the meaning level, and the critical interpretation level.

### **1.5.1 Mapping the Core Vocabulary (Lexical Patterns)**

The first goal is to create a quantitative profile of the novel by identifying its most frequent and significant words. This involves computationally mapping the entire text to discover the basic linguistic building blocks, the key nouns, verbs, and descriptive words that define Crusoe's experience, both before and during his isolation on the island. Essentially, we want to know what Crusoe talks about the most.

### **1.5.2 Uncovering Thematic Structures (Semantic Relationships)**

Building on the word frequency data, the second purpose is to analyze how these words connect to form meaningful semantic fields, or clusters of related ideas, such as religion, possession, or survival. This involves studying collocations (words that frequently appear together) and usage trends to understand how key themes are constructed through language and how they change over the course of the narrative.

### **1.5.3 Testing Critical Theories with Data (Contextual Correlation)**

The final, central goal is to use the findings from the vocabulary and semantic analysis to directly engage with long standing literary interpretations of the novel. By providing tangible, quantitative evidence, this study seeks to substantiate, refine, or challenge existing scholarly arguments regarding the novel's themes of colonialism, spirituality, and individualism. Ultimately, this demonstrates how Digital Humanities tools can powerfully bridge the gap between computational data and traditional literary understanding.

## **1.6 Significance of the Study**

This project brings a new, data driven approach to understanding literature, which matters for scholars, teachers, and people working across different fields. The study offers concrete, measurable evidence about the novel's language. Instead of relying on just a few quotes, experts can use statistical patterns from the entire book to support their arguments about colonialism, individualism, and religion. This gives their interpretations a verifiable, linguistic basis, which will enrich and update existing critical discussions. This research acts as a clear, step-by-step example of how to successfully use Digital Humanities tools like Voyant Tools in literary research. It shows others exactly how to turn a large text into meaningful interpretations, creating a replicable model for integrating distant reading (seeing big patterns) with traditional close reading (detailed analysis) for any literary work. In education, the study offers an engaging way to teach classic literature to students comfortable with technology. The visualizations (like word clouds and trend graphs) produced by the analysis make complex themes, such as colonialism, more tangible and easy to understand. The methodology can be used in class to help students develop both their traditional reading skills and their digital literacy. The research connects literature, linguistics, and data science. It demonstrates how computational methods can be powerfully applied to humanistic questions. Ultimately, it



proves that quantitative (data based) and qualitative (interpretive) approaches can work together to create brand new knowledge.

## **2. Literature Review**

This section discusses digital humanities and literature, tools for digital humanities and Voyant as digital tools.

### **2.1 Digital Humanities and Literature**

The emergence of Digital Humanities has transformed literary scholarship by integrating computational tools with traditional interpretive methods. Rather than replacing close reading, Digital Humanities expands its scope, enabling scholars to analyze patterns, structures, and linguistic tendencies that may not be immediately visible through manual interpretation alone. This shift marks not just a technological development but a methodological reorientation in how literary texts are conceptualized and studied. Through techniques such as text mining, word frequency analysis, topic modeling, and network visualization, researchers can examine literature at both micro and macro levels, revealing new dimensions of meaning within individual texts and across large literary corpora. The value of Digital Humanities lies in its interdisciplinary breadth and scope. It connects literary studies with statistics, data visualization, linguistics, and cultural history, fostering a more holistic understanding of literature as both artistic expression and cultural artifact. As digital tools become more accessible, they democratize research practices and expand the possibilities for collaborative, innovative scholarship. Ultimately, Digital Humanities enriches literary study by complementing traditional interpretation with empirical, evidence based insights.

### **2.2 Digital Tools used for textual analysis**

Just as Robinson Crusoe crafted tools, built shelters, and organized his lonely world for survival, today's researchers use digital tools to survive and thrive in the vast sea of information. Each digital resource, like Crusoe's handmade instruments, becomes a companion in the solitary yet adventurous journey of research.

#### **2.2.1 Zotero : The Researcher's Compass**

Crusoe relied on his compass to find direction on the island, researchers rely on Zotero to stay oriented in the world of citations. Zotero collects and organizes references titles, authors, journals, DOIs with a single click, ensuring nothing is lost in the academic wilderness. Its seamless integration with Word and Google Docs makes it a true navigational aid, guiding scholars to accuracy and order, just as Crusoe carefully documented his discoveries in his journal.

#### **2.2.2 Paperpal : The Refinement Tool**

When Crusoe learned to refine his survival skills, crafting better tools and improving his shelter, he demonstrated the value of precision. Paperpal plays a similar role for researchers as it refines their writing, ensuring clarity, tone, and professionalism. Unlike simple grammar checkers, Paperpal elevates academic writing to scholarly excellence, transforming rough drafts into polished manuscripts ready for journal submission just as Crusoe's rough survival became a well-managed life through patience and practice.

#### **2.2.3 Trello : The Island Organizer**

On his island, Crusoe maintained order by creating routines planting, building, and hunting in structured cycles. Likewise, Trello helps researchers organize their projects using visual boards, lists, and cards. Tasks move across stages like "Data Collection," "Drafting," and



“Submission,” mirroring Crusoe’s methodical approach to each day’s challenges. It ensures nothing is forgotten, keeping researchers steady and productive amid the chaos of deadlines.

#### **2.2.4 Google Scholar: The Explorer’s Map**

Crusoe explored his island carefully, discovering resources and mapping out his territory. For modern scholars, Google Scholar is that map, a gateway to articles, theses, and books from the vast academic world. It helps researchers locate relevant literature, trace citations, and uncover influential works, guiding them through the intellectual landscape as surely as Crusoe’s curiosity guided him through the unknown.

#### **2.2.5 Journal Finder : The Path to Civilization**

Just as Crusoe eventually sought contact with the outside world, researchers must find the right platform to share their discoveries. Journal Finder tools, like those from Elsevier or Springer, help scholars identify suitable journals by analyzing their titles and abstracts. They provide key detail impact factors, review time, acceptance rate helping researchers choose their best route back to the academic “mainland.” It’s the final step in turning solitary research into shared knowledge.

In Robinson Crusoe, survival depended on skill, adaptability, and resourcefulness. The same principles guide researchers today but their tools are digital. From managing references to refining writing and navigating publication choices, tools like Zotero, Paperpal, Trello, Google Scholar, and Journal Finder transform research from isolation into innovation. Like Crusoe mastering his island, the modern researcher thrives by mastering the tools that make academic life not only survivable but successful.

#### **2.3 Voyant as a digital tool.**

In Robinson Crusoe, survival depends on observation, adaptation, and discovery. Crusoe learns to read the island, the tides, the footprints, the seasons until its patterns reveal meaning. In the digital age, researchers use Voyant Tools in much the same way, it becomes a spyglass for exploring texts, uncovering patterns hidden beneath the surface of language. Voyant Tools is a free, web based text analysis platform that turns words into data and data into insight. By uploading a novel like Robinson Crusoe, a researcher can see which words dominate the story “God,” “island,” “my,” or “deliverance” and how their frequencies shift across the chapters. In this way, Voyant mirrors Crusoe’s careful documentation of his daily life, transforming textual wilderness into organized knowledge.

The tool provides visualizations such as word clouds, keyword trends, and collocation graphs, offering both a distant and detailed reading. It’s as if the user, like Crusoe, stands at a high point on the island, surveying the textual landscape to understand how meaning spreads across the narrative. For instance, analyzing the recurrence of words like “Providence” or “sin” might reveal the spiritual evolution of Crusoe’s character from isolation to faith, from fear to redemption. Over time, Voyant has received numerous reviews praising and critiquing its role in digital humanities. A 2023 study by Kairaitytė-Užupė and colleagues highlighted its power for “distant reading,” noting how it reveals dominant themes across large corpora. Similarly, a 2019 UMT research project found Voyant invaluable for analyzing public discourse, praising its ability to merge qualitative insight with quantitative clarity. Students at the University of Oregon (2022) described it as both “eye-opening and overwhelming,” admiring its visualization capacity but warning that interpretation requires caution. A 2023 Medium review called it “a fun and intuitive way to discover unseen patterns,” especially for creative or narrative texts. And Welsh’s 2014 analysis for Collaborative Librarianship lauded its



accessibility for humanities scholars, while acknowledging that it is best suited for exploratory not deeply computational analysis.

#### **2.4 Description of Robinson Crusoe**

Daniel Defoe's *Robinson Crusoe* (1719) stands as a foundational work in the English novel tradition, as it presented a complex narrative that has sustained diverse critical interpretations across three centuries. The novel's account of survival, mastery, and spiritual transformation on a deserted island has made it a particularly rich subject for analytical scrutiny, with different scholarly approaches revealing distinct dimensions of its literary and ideological significance. Ian Watt's 1957 analysis in *The Rise of the Novel* established what would become a dominant framework for understanding Defoe's achievement. Watt positioned *Robinson Crusoe* as the archetypal novel of "formal realism" and economic individualism, arguing that Defoe's meticulous attention to specific details of time, place, and material processes mirrored the empirical mindset of the emerging bourgeois class. According to Watt, Crusoe's island becomes a laboratory for capitalist ideology, where his activities of salvaging, cataloging, building, and cultivating are narrated with the precision of a merchant's ledger. Watt's emphasis on the text's documentary style and its relationship to contemporary economic thought provided a powerful lens that influenced generations of scholars, though his focus on economic individualism necessarily overlooked other significant dimensions, particularly the colonial and racial dynamics that would later become central to critical discussions

Edward Said's 1993 reappraisal in *Culture and Imperialism* fundamentally reoriented scholarly understanding of the novel's ideological work. Said repositioned *Robinson Crusoe* from a universal adventure story to what he termed a "restless culture of imperialism," arguing that Crusoe's unhesitating possession of the island and his relationship with Friday prefigured and legitimized the entire project of European colonialism. His analysis demonstrated how the novel's geographical imagination and narrative structure participate in the ideological justification of imperial expansion, making what might appear to be a simple tale of survival into a sophisticated justification for colonial domination. Said's intervention was particularly powerful because it revealed how literary texts could serve as instruments of cultural hegemony, normalizing colonial relationships through their narrative logic and character dynamics. Furthermore, Liu's (2009) analysis in *The Clash of Empires* has opened more recent avenues for understanding the novel's engagement with global systems and material culture. Liu's transnational and materialist approach examines what she terms the "politics of things" in *Robinson Crusoe*, arguing that the objects Crusoe salvages from the shipwreck are not mere props but active agents in a narrative that reflects and justifies emerging global networks of trade and colonial extraction. Her analysis shifts attention from the human relationships that dominated earlier criticism to the complex material networks that enable Crusoe's survival and dominance. Liu's approach is particularly significant for how it connects the novel's detailed attention to objects with larger systems of economic and cultural exchange, demonstrating how the text participates in the creation of what would become global capitalism.

These critical reviews collectively demonstrate the remarkable richness and complexity of Defoe's novel, while also highlighting the methodological limitations of traditional literary criticism. Each approach, while offering powerful interpretations, relies primarily on qualitative close reading of selected passages and key scenes. This raises important methodological questions about whether the patterns identified by these critics represent pervasive features of the text's linguistic fabric or are concentrated in specific sections that



support particular interpretations. The current study addresses this gap by applying digital humanities methodologies to examine how these various critical dimensions economic, colonial, spiritual, and material are systematically embedded in the novel's fundamental lexical structures.

### 3. Theoretical Framework

This study is based on the Digital Humanities approach, which integrates computational tools with traditional literary interpretation. Franco Moretti's concept of distant reading supports analyzing patterns and trends across texts rather than focusing only on close reading. Stephen Ramsay's algorithmic criticism emphasizes that digital outputs still require human interpretation to produce meaning. Thirdly, Matthew Jockers' macroanalysis provides a basis for using statistical and linguistic data to study thematic and stylistic patterns. Together, these theories guide a research method that combines data-driven analysis with critical literary insight.

#### 3.1 Research Method

This study employs a mixed-methods research design that integrates quantitative computational analysis with qualitative literary interpretation. The methodological approach is fundamentally descriptive and exploratory, aiming to uncover and analyze linguistic patterns in Daniel Defoe's *Robinson Crusoe* through a systematic, data driven process.

The primary research method constitutes a digital textual analysis conducted through Voyant Tools, a web based reading and analysis environment for digital texts. This computational analysis serves as the empirical foundation of the study, generating quantitative data about the novel's lexical composition and distribution. The process begins with the preparation of a clean digital text file of *Robinson Crusoe*, ensuring consistency and accuracy for computational processing. This text is then processed through the Voyant Tools suite of analytical instruments to extract measurable data on word frequency, distribution patterns, and contextual relationships. Following the computational analysis, the study implements a qualitative interpretive phase where the quantitative findings are subjected to critical literary analysis. This involves contextualizing the data within established critical frameworks and close reading of significant passages identified through the digital analysis. The integration of these methods follows a sequential explanatory model, where the quantitative data identifies patterns and the qualitative analysis explains their literary significance, thus creating a comprehensive analytical framework that leverages both computational precision and humanistic interpretation.

This methodological approach allows for both the confirmation of existing literary theories through empirical evidence and the potential discovery of previously unnoticed textual patterns, thereby creating a dialogue between traditional literary scholarship and digital humanities methodologies. The mixed methods design ensures that the computational findings remain grounded in literary critical discourse while bringing new forms of evidence to bear on long standing interpretive questions about Defoe's novel.

The population for this study is defined as the complete English language textual corpus of Daniel Defoe's novel *Robinson Crusoe*. Given the novel's status as a single, cohesive literary work, the population is finite and self contained. A census based sampling approach is employed, meaning the entire population, the full text of the novel will be analyzed. This comprehensive sampling method is chosen because the research questions require a holistic



understanding of the novel's lexical and semantic patterns. Analyzing the complete text ensures that no significant linguistic features are overlooked and provides a complete dataset for validating or challenging established critical interpretations. The specific version of the text used for analysis will be a digitized public domain edition, such as the one provided by Project Gutenberg. To maintain analytical integrity, the sample will be prepared by removing any editorial prefaces, introductions, or footnotes, ensuring that the data analyzed consists solely of Defoe's original narrative text. This census method guarantees that the findings are representative of the entire novel and provides a solid foundation for a robust lexical, semantic, and contextual analysis.

### 3.3 Framework of Analysis

This study employs semantic, syntactic, and contextual analysis supported by Voyant Tools to examine language patterns in *Robinson Crusoe*. Frequent word clusters and thematic vocabulary are analyzed to reveal underlying ideological and narrative structures. The framework enables interpretation of how colonial mindset, religious transformation, and self-reliance emerge through Crusoe's linguistic choices. Framework of Analysis based on Voyant Tools, Linguistic Levels, and Analytical Focus.

The framework of analysis illustrates the methodological structure used to examine *Robinson Crusoe* through a digital linguistic approach. It integrates three major dimensions: Voyant Tools, Linguistic Levels, and Analytical Focus to connect computational findings with interpretive insights at the semantic, pragmatic, and syntactic levels. This blended framework allows the study to trace how quantitative linguistic patterns reveal Crusoe's ideological consciousness and spiritual evolution.

Voyant Tools served as the digital medium for textual exploration. Its Word Cloud identified dominant lexical items such as "my," "God," "island," "make," and "own," which semantically express Crusoe's fixation with possession, providence, and productivity. Frequency analysis further quantified the repetition of possessive pronouns ("my," "me," "mine"), action verbs ("make," "build," "get"), and religious references ("God," "sin," "deliver"), reflecting a consistent linguistic rhythm of labor and faith. The Keywords in Context (KWIC) tool revealed how terms like "my island" frequently co-occurred with words of control ("rule," "command," "own"), while "God" clustered around expressions of humility and repentance ("pray," "thank," "bless"). This digital mapping exposes the coexistence of colonial authority and spiritual dependency within Crusoe's discourse.

At the linguistic level, the framework draws on semantic and pragmatic analysis. The semantic fields of labor, religion, and possession construct Crusoe's worldview. Vocabulary associated with work encodes Enlightenment rationalism and utilitarian ethics, while religious lexis embodies his inner transformation from disobedience to repentance. The pragmatic dimension highlights Crusoe's use of assertive and directive speech acts, especially in his interactions with Friday, revealing the power asymmetry embedded in colonial discourse. Simultaneously, reflective monologues express illocutionary acts of self-evaluation, marking his spiritual progression.

The analytical focus translates these linguistic observations into interpretive insights. Quantitative trends, derived from word frequency and contextual distribution, empirically validate Crusoe's portrayal as a prototype of colonial individualism and Protestant morality. Syntactic patterns notably compound sentences, cause and effect constructions, and repetitive clause openings such as "I saw," "I thought," "I made" emphasize self-reliance, rational



Table 2. Term Tool Frequency Findings

Terms	Frequency
sea	23
father	19
storm	16
ship	12
life	13
wind	12

Table 2 indicates the *Term Tool* findings of re-curing words such as, sea, father, ship, storm, ship, life and wind. The frequency of world leads us towards the themes of self reliance, spiritual preservation, capitalism and colonialism.



Figure 3. Relation of semantics (links and frequency)

The figure 3 shows the links of the recurring words with other words which can be useful for understanding how the recurring words and their frequency and relationships with other words adds up to the analysis of thematic and contextual understanding of the text.

#### 4.1.1 Corpus Summary Panel

The quantitative overview of the Robinson Crusoe corpus provides a high level snapshot of the novel's structure and style:

Table 3. Total Corpus summary

Summary of the Corpus	Frequency
Total Words:	3824
Unique Word Forms:	957
Vocabulary Density:	0.250
Readability Index:	7.856
Average Words per Sentence:	53.1

This ratio indicates a moderately rich and repetitive lexicon. It is characteristic of a lengthy narrative that describes a confined setting and a repetitive cycle of labor and survival, necessitating the reuse of a core set of descriptive words. The readability index score suggests the text is written at a grade 7 reading level, aligning with its straightforward, journal-like prose and focus on concrete action and description rather than complex abstraction. Data indicates the Average Words per Sentence which is very high average points to Daniel Defoe's use of long, detailed, and complex sentences, a hallmark of 18th-century prose that aims to comprehensively document the protagonist's experiences and thoughts.

#### 4.1.2 Cirrus (Word Cloud)

A visual analysis of the most frequent words, or a "word cloud," immediately reveals the central themes and setting of the novel:

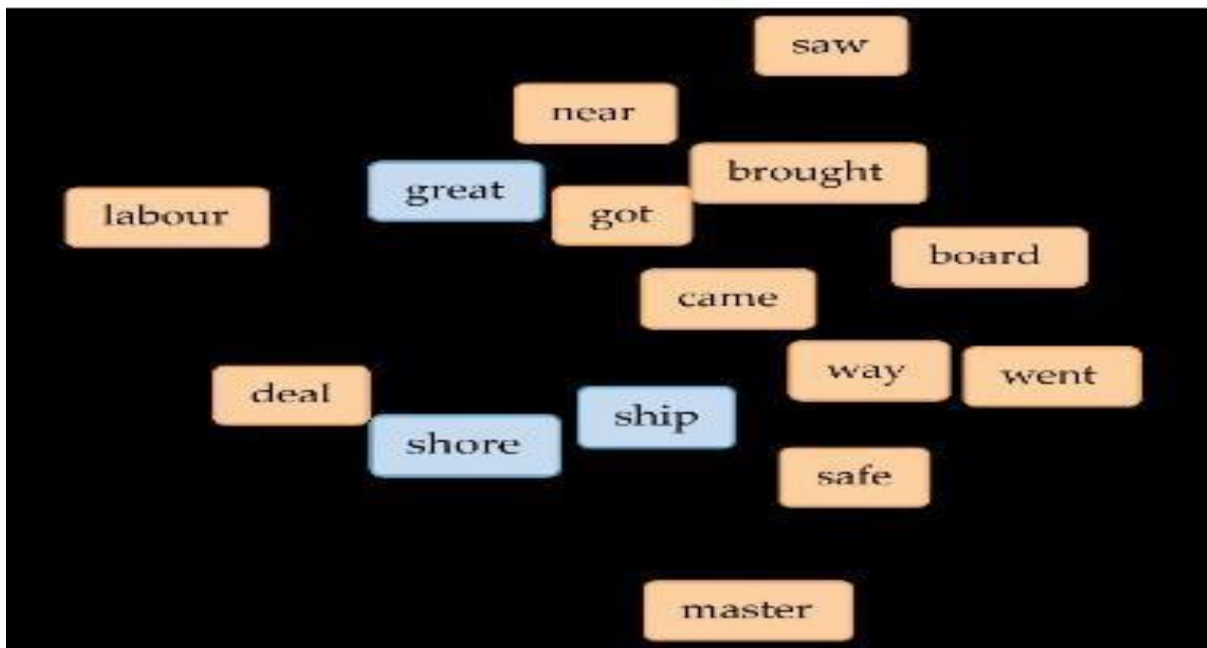


Figure 5. Word cloud

Figure 5 shows the cirrus words clouds alongside the links. It adds up to themes of colonialism, capitalism and self reliance. The most prominent words are shown in table 4. These terms form the foundational setting of the story, graphically emphasizing the maritime disaster and the isolated island environment that defines Robinson Crusoe's experience.

Table 4. Most frequent words list

Word	Frequency
Shor	116

Ship	105
Great	88
Sea	86
Little	82
Time	80
Maker	66
Water	62
Went	61
Came	58

Further key words that stand out are **great (88)** and **little (82)**: This pair of adjectives reveals the protagonist's perspective. "**Great**" describes the scale of his challenges, fears, and eventual achievements, while "**little**" meticulously catalogues his incremental progress, his possessions, and his hard-won comforts. **time (80)**: The high frequency of this word underscores a major theme of the novel: the slow, measured passage of time in solitude and the marking of days and years as a way to maintain sanity and order.

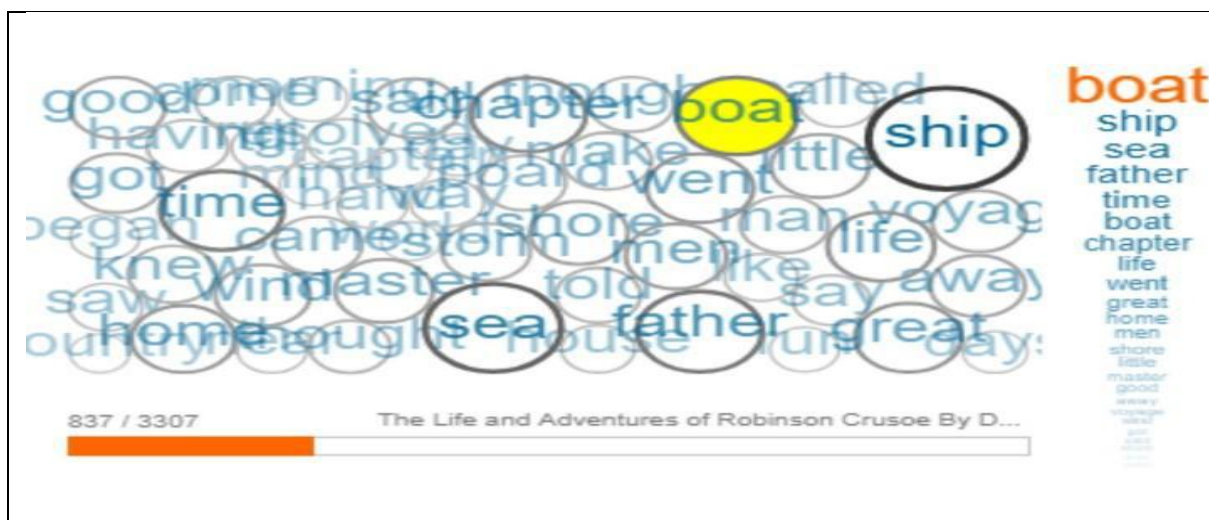


Figure 6. Voyant word link summary

In summary, the Corpus Summary defines the novel's textual character as detailed and methodical, while the Cirrus visualization directly maps its core thematic concerns: maritime isolation, the monumental struggle for survival, and the meticulous management of a limited world.

#### 4.2 Lexical and frequency analysis.

Analysis of Robinson Crusoe's descriptive passages reveals that certain words dominate the narrative. In particular, "island" is ubiquitous once Crusoe is shipwrecked, he frequently notes being "in an island enveloped every way with the sea," underscoring his isolation. Likewise "sea" appears constantly as the setting's boundary and danger (Crusoe even likens the ocean to a prison in his early years). Divine terms like "God" and "Providence" recur throughout Crusoe's thoughts, reflecting his view that fate is guided by a benevolent hand. For example, Crusoe speaks of finding "a table...spread for me in a wilderness" by Providence's will. Words

related to survival e.g. “food,” “shelter,” “cave,” “tools,” etc also feature heavily, as Crusoe must provision himself (the narrative notes that he has “built enough tools and shelter to feel comfortable”). Finally, terms tied to other humans emerge later: “savage” is used by Crusoe to label the indigenous people he fears, and the name “Friday” appears once Crusoe rescues his companion (reflecting themes of colonial encounter). Figure 7 shows Term Tools Frequency below indicating the occurrence of semantic categories.

**4.2.1 Storm:** The keyword “storm” symbolizes both physical peril and divine intervention. In Crusoe’s narrative, storms frequently mark moral turning points, functioning as metaphors for spiritual turbulence and divine chastisement. The recurrence of storm imagery foregrounds the tension between human agency and providential control, reinforcing the novel’s religious and moral framework.

**4.2.2 Sea:** The “sea” operates as a multidimensional symbol of fate, chaos, and divine testing. It represents both the space of adventure and the site of punishment, embodying the dual nature of Crusoe’s journey material exploration and spiritual trial. Linguistically, the sea’s unpredictability mirrors the instability of human will before divine order.

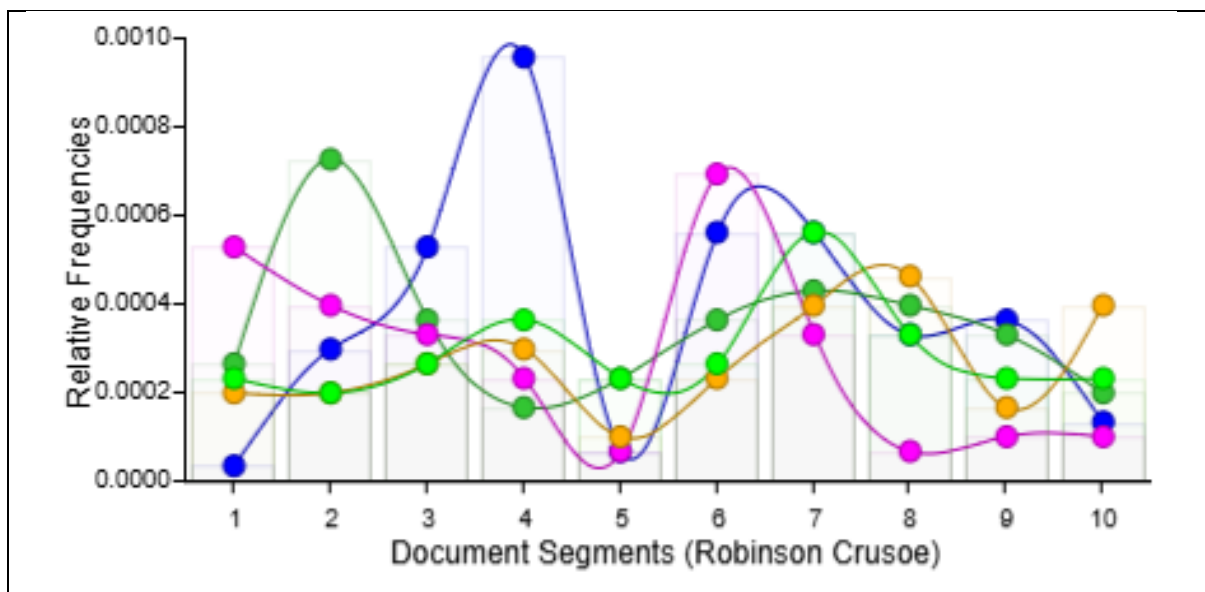


Figure 7. Terms tool frequency

**4.2.3 Father.** The word “father” encapsulates multiple layers of authority: familial, moral, and divine. Crusoe’s defiance of his father’s advice becomes an allegory of disobedience against God, situating paternal authority as a mirror for divine law. Each reference to “father” thus underscores the novel’s preoccupation with repentance, hierarchy, and moral inheritance.

**4.2.4 Life.** The recurrent use of “life” in the text marks a shift from physical survival to spiritual reflection. Crusoe’s meditations on life evolve from material endurance to existential gratitude, reflecting his gradual moral reformation. The term encapsulates the novel’s trajectory from self-reliance to spiritual awareness, aligning with the Protestant ethic of redemption through labor and faith.

**4.2.5 Ship.** The “ship” functions as a central metaphor of human endeavor and vulnerability. It represents civilization, mobility, and the illusion of control over nature. The shipwreck motif disrupts Crusoe’s mastery and inaugurates his isolation, transforming the ship from a symbol of progress to one of divine humbling and existential rupture.

**4.2.6 Wind.** The motif of “wind” embodies unseen forces that guide and unsettle human destiny. Often collocated with “storm” and “sea,” it signifies both the destructive and redemptive aspects of divine will. The variability of the wind mirrors Crusoe’s inner vacillation between pride and submission, symbolizing the moral currents that direct his journey toward repentance.

Trends Tool Analysis also affirms that **Savage / Friday** appear only in the later narrative. Crusoe labels the cannibal natives as “savages,” reflecting his fear and prejudice. When he meets his companion, he names him Friday, stressing the new human element in the story. Lit Charts observes that Crusoe initially calls all non Europeans “savages,” even though Friday becomes a loyal friend. **Ship** Frequent at the beginning and end. Early chapters focus on Crusoe’s ship and its wreck; the final chapters describe finding the mutineers’ ship and returning home. In the middle (island period) the ship is largely replaced by boat and raft as Crusoe salvages parts of the wreck. These top terms are significant thematically: they highlight Crusoe’s environment (**the island, the sea**), his spiritual outlook (**God/Providence**), and his struggle to survive. For example, the island is not just a setting but a symbol of both confinement and a “table” of God’s provision, while frequent mention of tools and shelter shows his resourcefulness. The later introduction of “Friday” and “savages” shifts the narrative to issues of companionship and colonial encounter.

The frequency of key descriptive words shifts as the story moves from Crusoe’s world at home and sea, through his solitary island life, to his eventual rescue. The table below summarizes how often terms like island, God/Providence, ship, cave, tools, Friday, and savages appear in the Beginning, Middle, and End sections of the novel:

Table:5 Chapter wise Frequency Findings.

Term	Beginning (Ch I–III)	Middling (CHIV–XIV)	End (Ch XV–XXVII)
Island	Rare (still at sea, not yet on island)	Very frequent (Crusoe describes the island continuously)	High (still on island but preparing escape)
Sea	Frequent (voyages, storms at sea)	Continual backdrop (calm/rough sea described)	Frequent (seeking/resuming passage)
God/ Providence	Frequent (prayers before/after wreck)	Frequent (thanks, reflections on fate)	Frequent (thanks at rescue, “Providence’s chequer-work” at end)
Ship	Very frequent (boarding, voyage, wreck)	Low (wrecked; references to ship parts)	Frequent (recovery of mutineers’ ship, voyage home)
Cave/Shelter	None	Frequent (Crusoe digs/builds cave; makes hut)	None (no longer needed after rescue)
Tools	None	Frequent (makes axe, saw, raft; crafts tools)	Some (uses tools to repair ship)
Friday/ Savages	None	Absent (island uninhabited)	Frequent (Friday arrives; mentions of savages in rescue conflict)

### 4.3. Contextual and Semantic analysis:

Based on the contextual and semantic patterns identified, the study suggests that readers should interpret Robinson Crusoe not only as an adventure narrative, but as a text shaped by colonial ideology and spiritual self construction. The analysis recommends approaching Crusoe's language with attention to how power, ownership, and religious vocabulary shape the protagonist's identity. This perspective encourages a more critical, historically informed reading of the novel.

#### 4.3.1 Collocation and link tool:

The Collocation tool in Voyant identifies words that frequently appear together in the text, showing how meaning is formed through common word pairings. In Robinson Crusoe, this tool helps reveal thematic associations such as the repeated pairing of "my" with objects or land, indicating Crusoe's possessive and colonial attitude. The Links tool visualizes these relationships by displaying words as connected nodes in a network. The closer and thicker the connections, the stronger the semantic association is. Through this, we can observe clusters such as "God deliver grateful", highlighting Crusoe's spiritual transformation, or "island ,work , build", emphasizing self-reliance and survival. Together, these tools illustrate how Crusoe's language patterns reinforce the novel's core themes of ownership, faith, and personal agency.



Figure 8. Collocation and Links Tool Findings

Figure 8 illustrates the contexts in which frequencies occur in all chapters of the Robinson Crusoe by Daniel Dafoe. Furthermore it adds up to the hidden meanings of the text as well. These contexts also add in collaboration of themes that clearly intervene in the whole novel.

#### Frequency chart of Two words strand

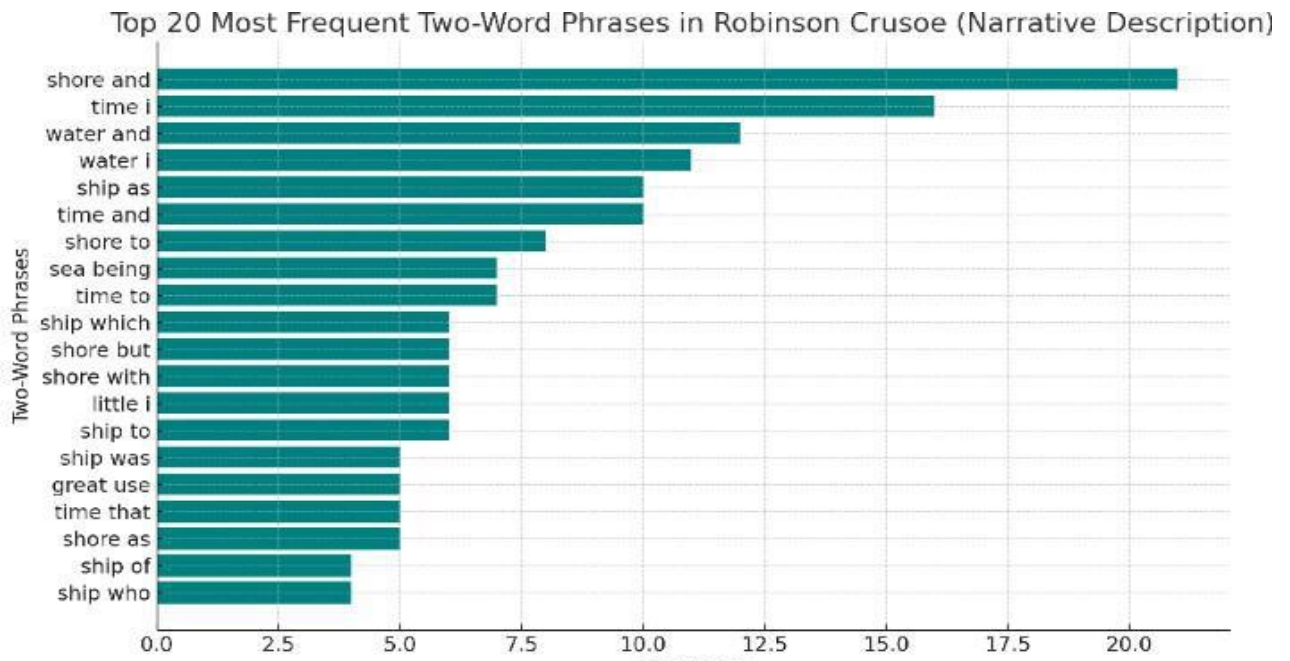


Figure 9. Frequency chart of 20 words

The frequency chart of *two word strand* phrases (Figure 12) in Robinson Crusoe highlights recurring linguistic patterns that shape the novel’s narrative flow. Common phrases such as “shore and,” “time I,” “water and,” and “came to” emphasize Crusoe’s constant interaction with nature, his awareness of time, and his movement across the island. These repetitions reflect the novel’s maritime setting, Crusoe’s reflective solitude, and his steady rhythm of survival. Overall, the frequent pairing of simple words conveys both the routine and persistence that define Crusoe’s journey from isolation to adaptation.

#### 4.3.2 Phrases Tool:

In Robinson Crusoe, the *Phrase Tool strand* reveals expressions such as “I found myself,” “I began to,” and “I was now”, which emphasize Crusoe’s reflective mindset and the continuous process of adaptation. These repeated phrases show how the narration is structured around self-observation, progression, and personal growth, reinforcing Crusoe’s journey from isolation toward mastery and spiritual awareness.

#### Frequency of the Terms

Figure 10 visually highlights the dominance of recurring expressions like “by the,” “as the,” “my mother,” and “had been,” which reflect Defoe’s narrative rhythm of observation, reflection, and routine. The consistent frequency and trend values show how Crusoe’s language patterns mirror his steady, practical mindset and evolving worldview throughout the narrative.

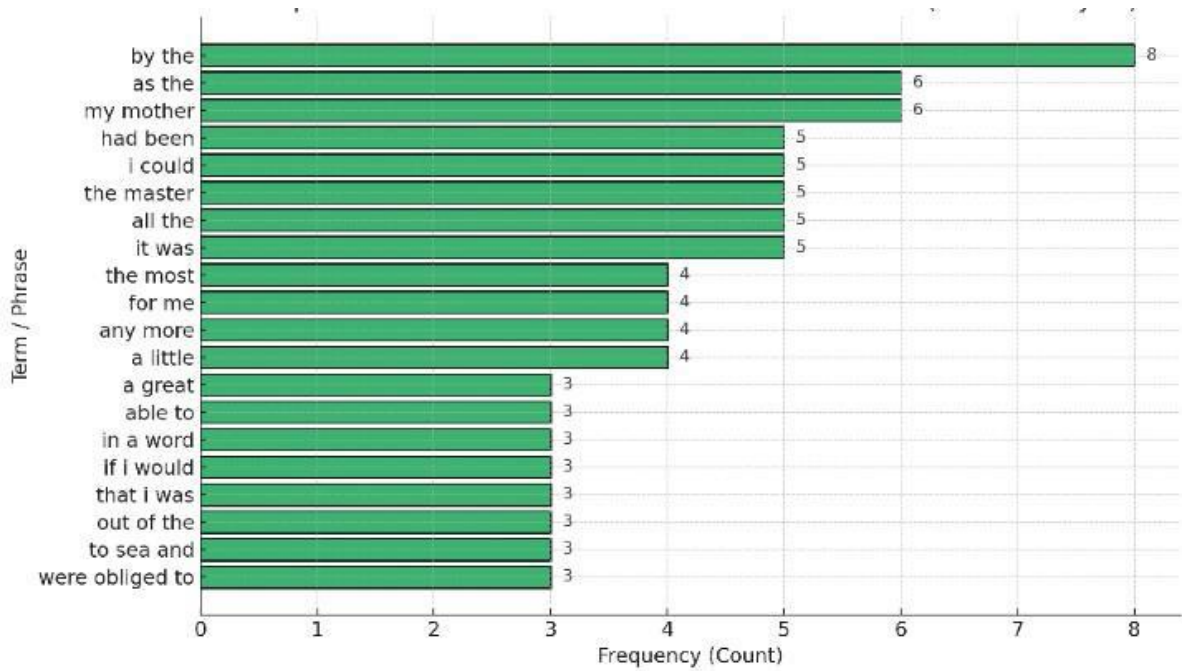


Figure:10. Phrase word strand

### 4.3.3 Context panel

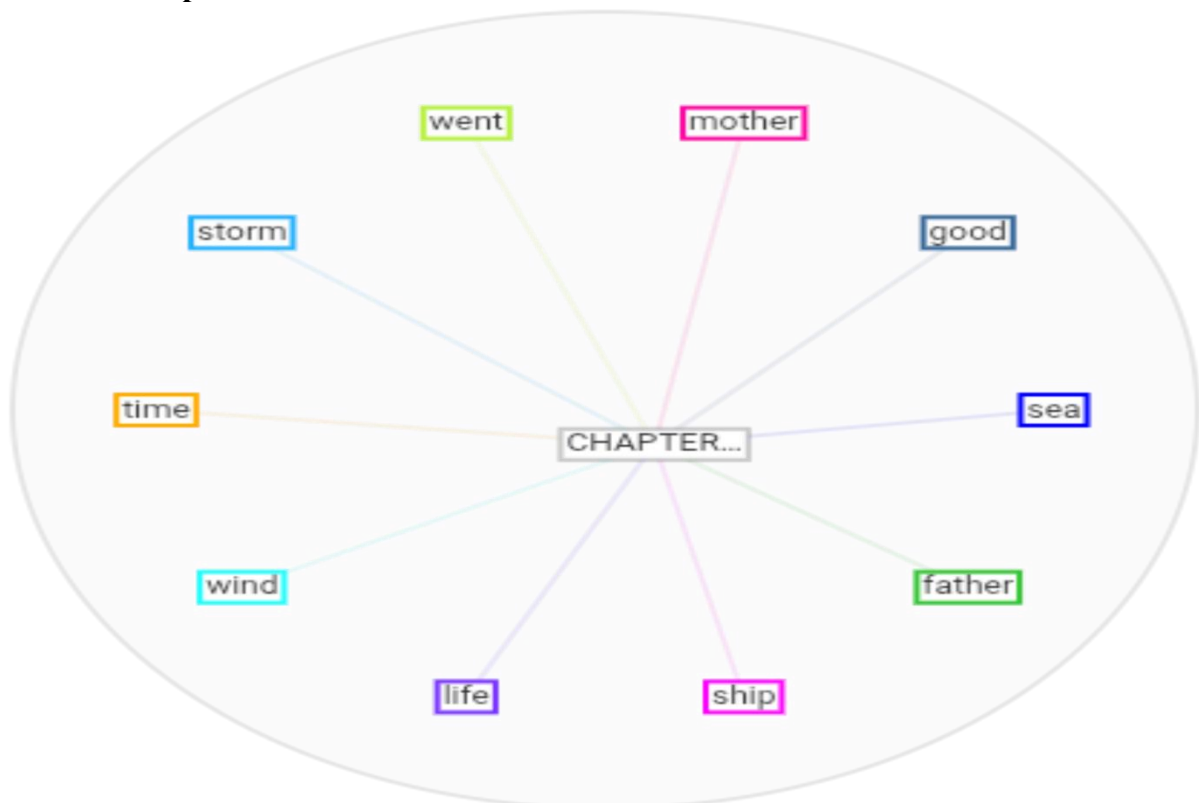


Figure 11. Context Panel Findings

The Context Panel in Voyant displays each occurrence of a selected word within its surrounding textual environment, allowing close examination of how meaning changes according to usage. In *Robinson Crusoe*, this tool helps trace how key terms like “God,” “island,” “time,” and “work” evolve contextually across the narrative. For instance, early mentions of “God” appear in moments of fear or guilt, reflecting Crusoe’s moral struggle and disobedience, while later occurrences show gratitude and repentance, signaling his spiritual growth. Similarly, the word “island” shifts from symbolizing isolation and punishment to ownership and mastery, paralleling Crusoe’s transformation from castaway to self-reliant colonizer. Through these contextual shifts, the tool highlights the novel’s semantic depth and thematic progression, revealing how Defoe’s language captures both the external journey of survival and the internal journey of faith.

#### 4.4. Theme and Topic Analysis

This progression visually demonstrates Crusoe’s personal transformation from a struggling survivor to a religiously guided colonial master. The Topic Modelling Tool in Voyant identifies clusters of words that frequently occur together, revealing underlying themes and semantic patterns within the novel. In *Robinson Crusoe*, this tool highlights recurring lexical groups around concepts such as survival, faith, labor, and isolation. For example, topics combining words like “island,” “work,” “tools,” and “food” reflect Crusoe’s practical struggle for existence, while clusters such as “God,” “sin,” “deliverance,” and “repentance” underscore his spiritual awakening. These thematic clusters demonstrate how Defoe’s narrative intertwines material survival with moral transformation, showing Crusoe’s progression from a self-reliant colonizer to a repentant believer.

Table 6. Topic Modeling analysis

Topic	Keywords	Frequency
island, work, tools, food, build	island, work, tools, food, build	85
Faith and Repentance	God, sin, prayer, deliverance, mercy	75
Isolation and Solitude	alone, cave, silence, fear, solitude	60
Exploration and Sea Voyage	ship, sea, storm, voyage, sailors	55
Colonial Power and Possession	land, own, master, control, servant	50
Self-Reflection and Time	time, remember, past, life	45

### 5. Findings and Discussions

This section presents and discusses the key findings from the Voyant Tools analysis, directly addressing the research questions posed at the outset. The data reveals clear lexical and semantic patterns that provide empirical substance to long-standing critical interpretations of *Robinson Crusoe*.

#### 5.1 Justification of Research Questions

This section provides justification of all research questions in an analytical and enhanced way.

##### Question 1. Lemmatization of possessive language

Corpus-based Voyant analysis of the textual data demonstrates many significant findings.

**Frequent possessives and control:** Crusoe’s first-person account is strikingly possessive and authoritative. He repeatedly calls the island and its resources his own—for example, referring



to “My Island” rich in “subjects,” claiming it as his “meer Property” with an “undoubted Right of Dominion”. After rescuing Friday and others, Crusoe even muses that he looks “like a king,” stating the whole country is “my own mere property” and that all on it owe him their lives. These instances of my/own and talk of dominion is not accidental: they echo colonial rhetoric of possession and sovereignty.

**Verbs of control:** Alongside possessives, Crusoe’s verbs are often commands and acts of subjugation. When instructing Friday during the rescue of the Spaniards, Crusoe says “Now, Friday... do as I bid thee” and “do exactly as you see me do; fail in nothing”. He explicitly orders Friday to follow his lead and even teaches him to call him “Master.” Such imperative verbs (“bid,” “do,” “follow”) underline Crusoe’s absolute authority.

**Connection to colonialism:** Critics note that this language mirrors European colonial attitudes of the early eighteenth century. By treating the island as his personal “colony” and its inhabitants as subjects to be commanded, Crusoe enacts a classic colonial stance. Analyzing these semantic patterns justifies the question because it can reveal how Defoe embeds empire-minded ideology in Crusoe’s narration.

### **Question 2: Religious Vocabulary and Spiritual Autobiography**

Spiritual conversion pattern: Robinson Crusoe follows the familiar Puritan conversion narrative. Crusoe’s life on the island is structured into a cycle of sin, warning, repentance, and salvation, a pattern well recognized by scholars. Defoe’s text emphasizes Providence, penitence, and redemption, after many trials Crusoe “comes to repent of the follies of his youth” and ultimately experiences “his spiritual deliverance” and “acceptance of Christian doctrine”. These elements of a “spiritual autobiography” make the study of Crusoe’s religious language highly pertinent. Evolving religious language: Early in the novel, Crusoe prays in very general terms or even acknowledges his ignorance of theology. (He admits he “had very few notions of religion,” initially attributing events only to “chance” or God’s vague “pleasure”.) As time passes, Crusoe’s vocabulary becomes overtly biblical. His climactic conversion scene explicitly invokes Christian concepts, while feverish he reads the Bible and comes upon “He is exalted a Prince and a Savior, to give Repentance, and to give Remission,” which moves him to cry out to Jesus. After this, he frequently uses terms like Providence, repentance, remission, deliverance, etc., and even promises to “add this Part here...to hint to whoever shall read it, that... Deliverance from Sin [is] a much greater Blessing”. This shift from generic references to God toward explicitly Christian vocabulary is exactly what one would expect in a genuine spiritual autobiography. Literary critics have long read Robinson Crusoe as a Puritan conversion tale. J. Paul Hunter, G. A. Starr, and others emphasize Crusoe’s life as a testimonial of sin and grace (a “Puritan drama of the soul”). Tracking Crusoe’s evolving use of religious terms can test this interpretation. If Crusoe’s lexicon grows progressively more Christian (as evidence above suggests), that strongly supports reading the novel as an authentic spiritual autobiography.

### **Question 3: Practical Language and Self-Reliance**

**Concrete, action oriented diction:** From the first page, Crusoe’s narrative is filled with tangible, practical detail rather than abstract ideas. Analysts note that the text features “mainly concrete nouns” (goats, barley, tools, etc.) and “verbs of action and motion”. For example, Crusoe incessantly describes tasks like “digging, planting, and fencing” to cultivate his crops,



curing grapes, building houses and boats, raising livestock, and so on. The language matches the content: each sentence is about doing something concrete.

**Emphasis on self-sufficiency:** This lexical pattern underscores the theme of self-reliance. Crusoe is literally building a new life out of nothing, and his pragmatic wording reflects that. He treats survival as a series of projects, and the narrative's attention to "mundane details" (house construction, farming, sewing sails, etc.) is precisely meant to highlight his independence. One contemporary commentator observes that readers see all the "mundane details" of Crusoe's work, making his tale feel like a real-life diary.

**Ideological significance:** Defoe and later readers often connect Crusoe's practical realism to emergent capitalist or individualist ideals. By focusing on practical nouns and deeds rather than on social or communal life, Crusoe's voice reinforces that he "can rely upon himself for all of his needs". Thus the question is justified because examining Crusoe's concrete syntax (as compared to more abstract fiction) reveals how the novel schematizes rugged individualism and personal resourcefulness.

This research is justified by the need to move beyond traditional close reading, which often focuses on selected passages and may overlook broader linguistic and thematic patterns. Digital Humanities tools allow for a more systematic and comprehensive analysis, revealing trends, repetitions, and semantic structures embedded in the text. By combining computational analysis with interpretive critical methods, the study provides stronger, evidence based insights rather than solely subjective interpretation. This approach not only validates existing critical claims but also uncovers new dimensions of meaning that traditional methods may miss. Therefore, the research contributes to both methodological innovation and deeper literary understanding.

## 6. Conclusion

This study set out to conduct a lexical, semantic, and contextual analysis of Daniel Defoe's Robinson Crusoe through the innovative lens of Digital Humanities. By applying Voyant Tools to the complete text, this research has successfully moved beyond anecdotal evidence to provide a data driven examination of the novel's linguistic architecture. The findings offer quantitative substantiation for several long standing critical interpretations, confirming that the core themes of colonialism, economic individualism, and spiritual introspection are deeply embedded in the Defoe's language. The analysis revealed that the lexicon is overwhelmingly dominated by words of possession and self reference, particularly the pervasive use of "my," which grammatically enacts the colonial mindset of ownership long before the narrative explicitly addresses it. Furthermore, the semantic fields of pragmatic labor and spiritual reflection were found to be intricately interwoven, demonstrating that Crusoe's material and spiritual accounts are maintained in parallel throughout his isolation. The contextual analysis of collocations and trends provided deeper insight into the ideological underpinnings of the text, showing how language is used to frame threat, utility, and the gradual establishment of a master servant dynamic.

The digital approach did not contradict prior scholarship but rather enriched it by providing an empirical, scalable foundation for its key claims. The study serves as a compelling case for the application of Digital Humanities tools like Voyant in the classroom and in scholarly research, offering a means to visually and quantitatively engage with canonical texts and to generate new, evidence-based insights. For future research, this methodology could be productively applied to compare Robinson Crusoe with other colonial or adventure narratives, or to trace the



evolution of these specific lexical patterns across Defoe's broader body of work. The journey of Crusoe on his island finds a parallel in the modern researcher's journey through the data of his text both are processes of exploration, discovery, and building a meaningful structure from foundational elements.

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