Final Year Project

Name: Eve Nevaeh Roche

Student Number: 122333976

Final-Year Project: BA Digital Humanities and Information Technology

Title: Topic Modelling: A Corpus of Female Politicians (1990-2020)

Supervisor: Dr Pedro Nilsson-Fernàndez

April 2025

Table of Contents

Abstract

In recent years, academic interest has grown in how political discourse is shaped by gender, leadership, and national context. Female political leaders, in particular, offer distinct rhetorical styles and thematic priorities in their public speeches. This project analyses the speeches of five prominent female politicians Mary Robinson, Mary McAleese, Hillary Clinton, Angela Merkel, and Jacinda Ardern delivered between 1990 and 2020.

Using MALLET for topic modelling and Voyant for text analysis, the study identifies recurring themes and stylistic features in their political communication. Key themes include human rights, equality, leadership, and crisis management. To contextualise these findings, the project draws connections between rhetorical emphasis, party affiliation, and national context through both computational analysis and qualitative close reading.

This project ultimately contributes to the growing field of digital humanities by combining computational methods with critical interpretation to better understand the voices of female political leadership on the global stage.

Declaration of Originality

In signing this declaration, you are conforming, in writing, that the submitted work is entirely your own original work, except where clearly attributed otherwise, and that it has not been submitted partly or wholly for any other educational award.

I hereby declare that:

• this is all my own work, unless clearly indicated otherwise, with full and proper accreditation;

• with respect to my own work: none of it has been submitted at any educational institution contributing in any way to an educational award;

• with respect to another's work: all text, diagrams, code, or ideas, whether verbatim, paraphrased or otherwise modified or adapted, have been duly attributed to the source in a scholarly manner, whether from books, papers, lecture notes or any other student's work, whether published or unpublished, electronically or in print.

Signed: Date:17/04/2025

Acknowledgments

First and foremost, I want to express my deepest gratitude to my supervisor, Pedro. You've been with me through every high and low this past year, and I truly don't know how I would've made it without your unwavering support, encouragement, and patience.

To my incredible mum, Pamela. Your constant reassurance, love, over these three years have spurred me on to now. I am so lucky to have you as my mum. I'm endlessly grateful to my Nan and Gramps, whose love and wisdom have been such a comfort, and to my brother Alex - thank you for being my brother. To the rest of my family and friends thank you. I can't forget Taylor Swift - her lyrics became my personal anthem during this journey.

A very special thank you goes to my dad, Glenn - my rock. You've listened to my rants, offered guidance without judgment, and reminded me, again and again, that I am well able. The way you tease and challenge me, in the best possible way, even inspired the topic of my thesis on Female Presidents. I dedicate this to you.

Introduction

In the past three decades, the visibility and impact of female political leaders have grown significantly across the global stage. From presidencies to prime ministerial roles, women have increasingly stepped into the political spotlight, not only influencing national policy but also shaping global conversations around justice, equality, and leadership. This shift has sparked considerable scholarly interest in how gender intersects with political discourse, particularly in terms of rhetorical style, thematic focus, and public perception. While much attention has been given to the content of political decisions, speeches as artefacts of political communication remain an important yet under-analysed resource in understanding how political figures convey power, values, and vision.

This project explores the political speeches of five prominent female leaders Mary Robinson, Mary McAleese, Hillary Clinton, Angela Merkel, and Jacinda Ardern delivered between 1990 and 2020. These figures were selected based on their international influence, the diversity of their national and political contexts, and the availability of their public speech transcripts. The study aims to identify recurring themes and linguistic patterns across their speeches, with a focus on how these leaders construct political narratives, respond to national and global events, and promote specific social and political values.

The leaders featured in this research represent a wide political and geographical spectrum: Mary Robinson and Mary McAleese both served as Presidents of Ireland; Hillary Clinton served as United States Secretary of State and Democratic presidential candidate; Angela Merkel held the role of Chancellor of Germany; and Jacinda Ardern was Prime Minister of New Zealand. Each comes from a distinct political background, spanning centre-right to centre-left affiliations. Despite these differences, all five are known for their strong public speaking presence and have engaged deeply with issues of equality, international cooperation, and social justice in their careers.

The core objective of this research is to apply digital tools to uncover the thematic structures, and stylistic tendencies present in these leaders' speeches. This project utilises topic modelling specifically Latent Dirichlet Allocation (LDA) implemented through MALLET to identify dominant topics and word groupings across a corpus of speeches. Topic modelling is a computational technique used in digital humanities and natural language processing to detect recurring patterns in word usage across large text datasets. MALLET (Machine Learning for Language Toolkit) was selected due to its flexibility and reliability in handling medium-to-large text corpora. This tool enables a "distant reading" approach,

allowing for a macro-level view of discourse trends without needing to manually analyse each speech in detail.

To complement this quantitative analysis, the project also incorporates a "close reading" approach using Voyant Tools a web-based platform for text analysis and visualisation. Voyant was used to explore rhetorical and stylistic elements such as word frequency, lexical diversity, and contextual use of key terms. These insights offer a more nuanced understanding of how language is employed to persuade, connect with audiences, and address urgent political issues.

The corpus analysed includes 30 speeches, covering key political moments such as inauguration addresses, major international summits, campaign events, crisis responses, and landmark social policy announcements. Each speech was chosen for its rhetorical weight and political relevance, offering insight into the leader's communication strategy and values. For example, Hillary Clinton's "Women's Rights are Human Rights" speech at the Beijing Conference in 1995, or Jacinda Ardern's public address following the Christchurch Mosque attacks, represent crucial moments in gendered political communication. Similarly, Angela Merkel's speeches at the European Parliament or in response to the COVID-19 pandemic reflect leadership in times of both unity and crisis.

In analysing these texts, this project poses several research questions:
- What recurring themes can be identified across the speeches of these five female political leaders?
- How do national context and political affiliation influence the rhetorical style and thematic focus of their speeches?
- What stylistic and linguistic patterns can be observed using computational tools such as MALLET and Voyant?
- How can digital methods enhance our understanding of political rhetoric in the context of gender and leadership?

By addressing these questions, the project contributes to ongoing conversations in the fields of digital humanities, political communication, and gender studies. It offers a case study in how computational techniques can be applied meaningfully within humanities research to reveal patterns that may not be immediately visible through traditional methods. More broadly, it sheds light on the evolving role of women in political leadership and how their communication strategies reflect broader societal shifts in gender expectations and political engagement.

The significance of this research lies not only in its subject matter but also in its methodology. Digital tools have become increasingly central to humanities research, offering new ways of engaging with large volumes of text. This project demonstrates how these tools can be effectively employed to bridge the gap

between quantitative data analysis and qualitative interpretation, enriching our understanding of political discourse in the process.

In the chapters that follow, the report will first review relevant scholarly literature and existing approaches to political text analysis, gendered rhetoric, and topic modelling in the digital humanities. It will then outline the tools and methods used, followed by a detailed analysis of the topic modelling results and stylistic findings. The report concludes by reflecting on the implications of these findings and proposing potential directions for further research. Through this investigation, the project aims to highlight both the power of political language and the potential of digital analysis in interpreting complex, context-driven texts.

Literature Review

The political speech has long been a vehicle for expressing national identity, social values, and ideological commitments. In recent decades, as more women have entered political leadership roles, scholars have turned increasing attention to the intersection of gender and political discourse. This literature review explores how gender shapes political speech, examining structural barriers to women's political participation, the stylistic and rhetorical strategies employed by female leaders, and how media and public perception mediate their voices. With a particular emphasis on the speeches of high-profile leaders such as Mary Robinson, Mary McAleese, Hillary Clinton, Angela Merkel, and Jacinda Ardern, this review draws on feminist theory, political communication, and digital humanities scholarship to frame the analytical approach of this project.

Research on gender and political leadership consistently highlights the persistent structural and cultural challenges that women face in entering and succeeding in political life. While notable progress has been made in gender parity in some regions, political leadership remains overwhelmingly male-dominated, and women continue to encounter disproportionate scrutiny. This is particularly evident in how their communication styles, public personas, perceived competence, and electability are evaluated. Unlike their male counterparts, female politicians are often expected to conform to conflicting expectations: to lead with strength and authority, yet also remain approachable, nurturing, and non-threatening.

These conflicting demands are well articulated by Eagly and Karau's Role Congruity Theory (2002), which offers a psychological explanation for the biases faced by women in leadership. The theory argues that prejudice emerges when there is a perceived incongruity between the communal traits typically associated with femininity such as empathy, warmth, and supportiveness and the agentic traits expected of leaders, including assertiveness, decisiveness, and control. This mismatch results in women being judged more harshly than men when they seek positions of authority. Even when they exhibit strong leadership qualities, women may be penalised for violating gender norms, leading to the so-called "double bind": they are either perceived as insufficiently authoritative or criticised for being too forceful or unfeminine.

These dynamics do not only affect women's ability to attain political office but also deeply shape the way they engage with the public. Speech becomes a strategic site of negotiation, where female leaders must carefully balance rhetorical authority with emotional accessibility. Their language, tone, and presentation are frequently policed in ways that reinforce gender stereotypes, affecting both media framing and public reception. As such, feminist theory

highlights not only the material barriers to women's political advancement but also the symbolic dimensions of power how women's presence in political spaces is interpreted, constrained, and judged.

Understanding this layered context is essential when analysing the rhetoric of female politicians. It allows us to move beyond simplistic readings of tone or message and instead attend to how women strategically construct their public voices within systems that are not always designed to accommodate them. This awareness adds critical depth to rhetorical analysis, particularly when working with political texts and speeches, and is foundational to any digital or humanities-based exploration of gender and leadership in contemporary discourse.

This review proceeds by examining three key theoretical frameworks that explain gendered dynamics in political speech: feminist political theory, role congruity theory, and stereotype threat. It then explores how gendered expectations influence rhetorical choices, media representation, electoral prospects, and governance styles. Drawing from global and national case studies, the review ultimately argues for the importance of computational approaches such as topic modelling and text analysis in surfacing patterns in political speech that may otherwise go unnoticed.

Feminist political theory provides a foundational framework for understanding gender disparities in political leadership. Scholars such as Anne Phillips (1995) and Fiona Mackay (2006) have argued that democratic institutions are historically designed to serve and reflect male experiences, reinforcing hierarchies that systematically exclude women. This exclusion is not only a result of explicit discrimination but also of implicit norms and practices that favour traditionally masculine styles of leadership assertiveness, competitiveness, and rational detachment. These traits are often seen as incompatible with societal expectations of femininity, placing women in a double bind when they pursue political office.

Political institutions themselves contribute to these structural inequities. As Mona Lena Krook (2010) notes, party selection procedures, campaign financing mechanisms, and legislative cultures tend to privilege male networks and perpetuate male dominance. Women are often underfunded, under-supported, and underrepresented in winnable constituencies, even in systems that have adopted gender quotas. This is evident in Germany, where although female representation has increased due to internal party quotas, women are still more likely to be placed in marginal seats with little chance of electoral success (Baskaran & Hessami, 2018).

The Irish context, where Mary Robinson and Mary McAleese each served as President, presents an important counterpoint. Their elections marked significant breakthroughs in a historically conservative, male-dominated political culture. Yet even within their tenures, both leaders were frequently scrutinised for their

tone, public image, and perceived deviation from expected gender roles. Feminist theory thus underscores not only the material barriers to female leadership but also the symbolic ones how women's presence in politics is interpreted, policed, and judged. As Buckley (2013) notes, "while the election of women to high political office can challenge gendered norms, their leadership is often evaluated through a lens of symbolic representation, where their actions are heavily policed against stereotypical expectations." This highlights how women in power remain subject to ongoing gendered evaluations, even after breaking formal barriers.

Role congruity theory, developed by Eagly and Karau (2002), builds on feminist critiques by offering a psychological model of gender bias in leadership. The theory posits that individuals are evaluated more positively when their characteristics align with societal expectations for their social role. Because leadership is traditionally associated with agentic traits decisiveness, strength, authority and women are expected to be communal nurturing, empathetic, supportive female leaders are often seen as incongruent with the leadership role itself.

This incongruity results in two kinds of bias: women are viewed as less competent in leadership roles (due to a perceived mismatch), and when they do exhibit agentic traits, they are penalised for violating gender norms (the "backlash effect"). Okimoto and Brescoll (2010) found that female politicians perceived as power-seeking were rated as less likable and less electable than their male counterparts demonstrating identical behaviour.

The double standard embedded in role congruity theory is particularly salient in political speech. Female leaders are expected to communicate with warmth and humility while still demonstrating strength and command. This tension is evident in Hillary Clinton's career, particularly during the 2008 and 2016 U.S. presidential campaigns. Clinton's assertive and policy-focused communication style was frequently described as "cold" or "shrill" in the media, while male candidates with similar approaches were praised as authoritative. The result is a strategic dilemma for female politicians: adopt a traditionally masculine style and risk backlash, or embrace feminine norms and risk being dismissed as ineffective.

Stereotype threat theory further explains the psychological toll that these conflicting expectations impose on female politicians. Introduced by Steele and Aronson (1995), the theory suggests that individuals who are aware of negative stereotypes about their group experience anxiety and self-doubt that can impair performance. For women in politics, the awareness of being judged against a gendered standard can lead to cautiousness, over-preparation, or self-censorship in public speaking contexts.

This self-monitoring may affect not only how female leaders speak but also what they choose to say. Research has shown that women in leadership positions often

soften their rhetoric, avoid confrontation, and stress collaborative or emotive appeals in an effort to maintain likability (Eagly & Karau, 2002; Rudman & Glick, 2001). These stylistic tendencies whether strategic or subconscious have implications for how political messages are crafted and received.

Angela Merkel provides an instructive case in stereotype navigation. Known for her measured, pragmatic tone and avoidance of overt charisma, Merkel's rhetorical style has been described as "unemotional" and "technocratic." Yet it has also been praised for its calm authority and rational precision, particularly during the eurozone and refugee crises. Her ability to balance warmth with decisiveness especially during the COVID-19 pandemic demonstrates how female leaders must walk a tightrope to meet public expectations.

The way female politicians are represented in traditional and digital media is a crucial factor in shaping public perceptions of their rhetorical effectiveness and political legitimacy. Media framing often reinforces gendered expectations and double standards. Women in politics are disproportionately scrutinised for their appearance, emotional tone, and family life, while their male counterparts are more often evaluated on policy positions, leadership style, or party alignment (Carson, Ruppanner & Lewis, 2019). This imbalance affects not only voter attitudes but also the rhetorical strategies that female politicians adopt in their speeches.

The "likability trap" is one of the most frequently cited phenomena in the literature on female political speech. As Okimoto and Brescoll (2010) observed, women in leadership positions must appear competent without being seen as overbearing. If they adopt traditionally masculine rhetorical strategies such as directness, assertiveness, or emotional restraint they risk being perceived as unlikeable or cold. Conversely, if they embrace warmth and humility, they may be viewed as weak or lacking authority. This double bind significantly limits the rhetorical range available to women in politics and influences both their stylistic and thematic choices in speechmaking.

One notable example is Hillary Clinton's rhetoric in the 2016 U.S. presidential campaign. Despite her extensive experience and policy credentials, Clinton was consistently described in media coverage as untrustworthy, overly ambitious, or emotionally distant critiques often rooted in gendered stereotypes. Studies analysing her public speeches noted that she frequently used inclusive language, appeals to empathy, and references to family or community to counteract these perceptions. However, these strategies did not shield her from criticism, demonstrating how persistent gender norms can undermine even highly strategic rhetorical efforts.

Media bias also extends to the volume and tone of coverage. Research by Ladam, Harden, and Windett (2018) found that female politicians receive less issue-based

media coverage and are more likely to be portrayed through personal or emotional lenses. This can distort public understanding of their political priorities and reduce their perceived credibility, particularly in policy domains traditionally seen as "masculine," such as economics or national security.

In the case of Mary Robinson and Mary McAleese, Irish media often focused on their roles as women and mothers, framing their presidencies as moral or symbolic rather than political. While both leaders were praised for their integrity and compassion, their speeches addressing international law, constitutional reform, and national identity were often under-analysed in mainstream discourse. This lack of engagement with the substance of their rhetoric further illustrates the media's role in shaping which parts of a female leader's message are amplified or ignored.

A growing body of literature in political communication has examined the gendered nature of rhetorical styles in public discourse. Female politicians often adopt a more inclusive, narrative-driven, or emotionally resonant speech style, emphasising values such as care, empathy, community, and collaboration. These rhetorical choices are not inherently gendered, but they are often interpreted through a gendered lens. Scholars such as Arustamyan (2015) have argued that women in politics may strategically adopt masculine or feminine styles depending on the context, audience, or media environment in which they are speaking.

Jacinda Ardern's leadership in New Zealand exemplifies this flexible rhetorical approach. In her speeches following the Christchurch Mosque shootings and during the COVID-19 pandemic, Ardern combined empathy and decisiveness, using inclusive language ("we are one") and emotionally grounded narratives to build public trust. Her rhetorical style was widely praised for its clarity, moral strength, and compassion. However, such praise was not universal; critics occasionally questioned her decisiveness or "emotional tone," demonstrating the fine line female leaders must walk when using affective rhetoric.

Digital media platforms such as Twitter, Facebook, and YouTube have expanded the opportunities for politicians to control their messaging, but they also expose female leaders to intensified scrutiny and harassment. Beltran et al. (2020) found that female politicians receive a disproportionate share of gendered abuse and personal attacks online. This hostile digital environment can influence how female politicians present themselves rhetorically leading some to adopt more cautious, measured, or diplomatic tones in digital communication, while others embrace boldness as a form of resistance.

Moreover, the rise of AI-driven political analysis and computational linguistics offers new ways of understanding how gendered speech operates. Tools like topic modelling, used in this project, allow researchers to identify dominant themes and

rhetorical strategies across large speech corpora. Combining such computational methods with close reading and discourse analysis helps illuminate not only what female politicians say, but how they say it and how it differs from dominant rhetorical norms in political discourse.

Despite the growing number of women in political leadership positions, female politicians still encounter significant barriers in the electoral process. One of the most persistent challenges they face is the gendered nature of electoral systems and party structures, which often disadvantage women in key areas such as candidacy selection, campaign funding, and voter perceptions. Political institutions, from national legislatures to political parties, are traditionally structured in ways that prioritise male participation and reinforce masculine leadership traits.

A critical factor influencing female political participation is the gatekeeping role of political parties. Research has shown that parties are more likely to select male candidates over female candidates, even when their qualifications and political experience are comparable (Baskaran & Hessami, 2018). Political networks, typically dominated by men, can be exclusive and unwelcoming to female politicians. This creates a significant hurdle for women, who may lack the necessary connections and resources to navigate these male-dominated spaces. Women who do enter politics often face higher standards for electability and must prove themselves more than their male counterparts to secure nominations or gain party support (Carson, Ruppanner & Lewis, 2019).

Moreover, the financial barriers to running for office also disproportionately affect women. Studies on political fundraising have found that female candidates often struggle to raise the same amounts of money as their male counterparts, with many relying more on grassroots donations rather than the large donor networks that male politicians typically access. This financial inequality limits the ability of female candidates to run competitive campaigns, particularly in high-stakes electoral contests. Female candidates are often disadvantaged in terms of campaign infrastructure, advertising budgets, and media exposure, making it harder for them to reach potential voters.

Gender quotas, which have been implemented in several countries to increase female political representation, have had mixed results. While quotas have helped to boost the number of women in legislative bodies, they have not necessarily translated into meaningful political power or leadership roles within parties. In countries such as Germany, quotas have increased the number of female candidates, but women are still underrepresented in high-ranking positions, such as ministers or party leaders (Baskaran & Hessami, 2018). The gender quota system has been more effective in improving representation at the lower levels of government, where women have seen increased participation in local councils and municipal elections.

Despite these challenges, the presence of female political leaders in high-profile roles has had an important impact on changing public attitudes towards female leadership. Studies suggest that when women occupy prominent political positions, they serve as role models for future generations of female politicians (Ladam, Harden & Windett, 2018). This phenomenon is known as the role model effect, whereby the visibility of successful women in leadership positions encourages other women to aspire to political office. The election of female heads of state, such as Jacinda Ardern, provides powerful evidence of how women in leadership positions can transform public perceptions of women in politics and inspire other women to enter the political arena.

The presence of women in leadership positions does more than diversify political institutions; it also influences how politics is perceived, practiced, and reproduced across generations. The concept of symbolic representation suggests that when women visibly hold power, they challenge longstanding gender norms and inspire future female political participation. This is often referred to as the role model effect a phenomenon documented across numerous national contexts, where the presence of high-profile women in office increases the political engagement of other women, particularly younger generations (Ladam, Harden & Windett, 2018).

Mary Robinson's election as Ireland's first female president in 1990 had a transformative symbolic impact. Not only did she break a centuries-old gender barrier, but her presidency also redefined the tone and expectations of political leadership in Ireland. She used the office to advocate for human rights, women's equality, and international justice issues that had been traditionally marginalised in Irish political discourse. Her successor, Mary McAleese, reinforced this shift by promoting themes of inclusion, reconciliation, and education, especially during the peace process in Northern Ireland. The rhetorical choices of both leaders emphasising empathy, unity, and civic responsibility embodied an alternative form of political communication that resisted adversarial norms.

The symbolic value of such leadership extends beyond national borders. Jacinda Ardern's global recognition, particularly following her responses to the Christchurch attacks and the COVID-19 pandemic, positioned her as a moral and empathetic figure in world politics. Her speeches combined emotional resonance with policy clarity, reflecting a leadership style often coded as "feminine" in the literature relational, values-driven, and transparent. Yet Ardern also demonstrated strategic command, making difficult decisions quickly and articulating them clearly to the public. Her dual emphasis on care and control disrupted traditional binaries in leadership rhetoric and highlighted how symbolic leadership can shift public expectations about who is "fit" to govern.

In addition to the representational power of visibility, female leaders also bring distinctive policy priorities to their roles. A significant body of research suggests that women in political office are more likely than men to advocate for legislation related to education, healthcare, childcare, gender equality, and welfare (Baskaran & Hessami, 2018; Clots-Figueras, 2011). These preferences are often shaped by both lived experience and the demands of constituencies that see female politicians as more responsive to social issues. The rhetorical strategies used in their speeches emphasising moral values, personal stories, and inclusive language reflect and reinforce these policy orientations.

Angela Merkel's policy agenda as Chancellor of Germany often focused on macroeconomic stability and European unity, but her speeches during humanitarian and public health crises revealed a consistent moral framing. Her remarks on migration, for instance, appealed to universal human rights and European responsibility, even as she faced political backlash. Merkel's rhetorical style measured, precise, and policy-heavy defied expectations for charisma, yet she maintained high approval ratings and long-term credibility. Her leadership style demonstrated that technical competence and understated rhetoric could co-exist with moral authority, especially when paired with consistency and transparency.

By contrast, Hillary Clinton's long career in American politics illustrates both the promise and perils of policy leadership for women. Clinton was a policy expert with deep knowledge of law, foreign relations, and healthcare, yet her rhetorical style was constantly evaluated through a gendered lens. Critics alternated between accusing her of being "too cold" and "too soft," rarely focusing on the substance of her proposals. Despite these challenges, Clinton remained an influential voice on issues of gender equality, human rights, and family policy. Her 1995 Beijing speech "Women's Rights are Human Rights" has since become a landmark moment in global feminist political discourse, and its resonance continues to shape rhetorical strategies among female leaders today.

This recurring theme that female politicians tend to foreground social justice, equity, and care in both their policy work and rhetoric does not suggest that all women govern the same way. However, the consistent association of women with these values does influence public expectations and may, in turn, shape how women speak in office. Thematic analysis of their speeches, as undertaken in this project, helps reveal these subtle but significant connections between rhetoric, gender, and governance.

Furthermore, the idea that women are more likely to govern transparently and with less corruption has also gained empirical support. Studies by Dollar, Fisman, and Gatti (2001), and later by Clots-Figueras (2011), indicate that countries or local governments with higher proportions of women in office tend to report lower levels of corruption and more ethical governance. While causality remains

debated, this perception influences the rhetorical positioning of female leaders, who often invoke themes of fairness, justice, and accountability in their public statements.

These discursive patterns are not only reflections of gendered leadership styles they are also strategic responses to systemic expectations. Female leaders are often aware that their words carry symbolic weight and that they are more likely to be remembered (or judged) for how they speak than for what they achieve. As such, their speech's function both as tools of persuasion and as performances of legitimacy, with the stakes of miscommunication significantly higher than for their male peers.

In sum, symbolic representation and rhetorical strategy are intimately connected in the leadership styles of female politicians. The visibility of women in high political office reshapes public discourse and provides alternative models of governance. Their policy priorities and rhetorical approaches, while diverse, often converge on themes of social justice, care, and transparency. Analysing their speeches through digital tools such as topic modelling not only reveals the thematic structures of their political messages but also helps trace the evolving landscape of gendered political communication.

To understand how gender operates in political speech, it is crucial to examine not only the individual speaker but also the broader socio-political environment that shapes what kinds of speech are possible, expected, or effective. Political rhetoric does not occur in isolation it is embedded within institutional structures, shaped by national political histories, and mediated through public expectations about gender, authority, and leadership. This section explores how the political cultures of Germany, the United States, and New Zealand influence the rhetorical possibilities available to three prominent female political figures: Angela Merkel, Hillary Clinton, and Jacinda Ardern. Each case illustrates how context informs content and how gendered communication is both constrained and enabled by its geopolitical setting.

Angela Merkel's leadership within Germany's federal parliamentary system offers a compelling example of how institutional frameworks and cultural norms shape rhetorical styles. Germany's political culture, which emphasizes consensus and coalition, fosters a style of leadership grounded in pragmatism and restraint. Merkel's communication style deliberate, understated, and rational aligned with these expectations and drew strength from them. Her background in the sciences lent her credibility in a political environment that privileges technical expertise over performative charisma.

From a gendered lens, Merkel's rhetorical success can be interpreted through Joan Acker's (1990) theory of gendered organizations, which posits that institutions are not gender-neutral but structured in ways that reflect and reproduce masculine

norms. Merkel's success, then, hinged on navigating a system in which female leadership is often legitimated through the performance of neutralized, 'de-gendered' competence. Her image as "Mutti" provided a culturally resonant yet carefully calibrated maternal framing that allowed her to maintain authority without triggering gender-based backlash.

Hillary Clinton's rhetorical challenges in the U.S. presidential context illustrate the complex interplay of gender expectations and media scrutiny in an adversarial, personality-driven political culture. The U.S. system rewards candidates who are assertive, charismatic, and highly visible traits traditionally coded as masculine. For Clinton, navigating this terrain required constant calibration. Her speeches had to convey competence, resolve, and empathy, while avoiding the perception of being either too "tough" or too "soft." This rhetorical tightrope is described by Eagly and Karau's (2002) role congruity theory, which explains how female leaders face prejudice when their behaviour deviates from gender norms whether by appearing insufficiently nurturing or too assertive.

Clinton's experiences also reflect what Arustamyan (2017) describes as the necessity for female politicians to "talk like a man, walk like a woman." She had to speak in authoritative tones, often drawing from technocratic or policy-heavy registers, while simultaneously performing warmth and relatability to appease gendered expectations. The hyper-mediated U.S. media landscape amplified these pressures, with every rhetorical choice subject to intense scrutiny. Her public persona often cast as overly strategic or inauthentic was less a matter of personal failure than a symptom of the contradictory expectations embedded in American political culture.

In contrast, Jacinda Ardern's rhetorical approach in New Zealand offers an example of how institutional and cultural settings can make space for more emotionally resonant, inclusive forms of political speech. New Zealand's proportional representation system encourages coalition-building and rewards communication styles that foster trust and unity. Ardern's empathetic leadership style particularly during national crises capitalized on these dynamics, earning her widespread domestic and international praise.

Importantly, Ardern was able to lean into traditionally feminine traits such as emotional intelligence and compassion without suffering the same backlash that female leaders often face in more adversarial systems. This reflects both her personal communicative skill and a broader political culture more open to alternative forms of authority. Her leadership helps challenge reductive binaries around gender and power, suggesting that different institutional and cultural configurations can enable more expansive possibilities for political speech.

Taken together, the rhetorical trajectories of Merkel, Clinton, and Ardern reveal the deeply embedded gendered logics that structure political communication

across democracies. While all three operated within formal democracies, the informal rules of political speech who can say what, how, and to whom were shaped by distinct combinations of institutional architecture, media environments, and cultural values.

By applying theoretical frameworks such as Acker's (1990) concept of gendered institutions, Eagly and Karau's (2002) role congruity theory, and Arustamyan's (2017) model of strategic gender performance, we can better understand how political speech by women is not simply a reflection of individual personality or skill but a negotiated performance within systems that remain deeply gendered. Recognizing this allows us to move beyond simplistic narratives of success or failure and instead examine the structural conditions that make certain rhetorical strategies legible, acceptable, or powerful.

In Germany, Angela Merkel's long tenure as Chancellor (2005–2021) provides a valuable case study of female leadership in a parliamentary democracy with a proportional representation system. Merkel's rhetorical style was marked by restraint, pragmatism, and careful calibration what some called "deliberate understatement." Her speeches avoided emotional flourishes and embraced technocratic language, reflecting not only her scientific background but also the expectations of German political discourse. Yet within this stoic style, Merkel embedded subtle appeals to solidarity, duty, and shared responsibility, particularly during the Eurozone crisis and refugee influx of 2015. German media often focused more on her policy competence than her personality an important difference from the more personality-driven American political scene.

Merkel's case also illustrates the impact of party dynamics on gendered leadership. As the head of the centre-right CDU, she operated within a traditionally conservative and male-dominated party. Her ability to sustain political dominance for over 15 years was partly a result of her rhetorical adaptability: she could shift between consensus-building and firm leadership without overtly embracing either confrontational or highly emotive language. This careful rhetorical balance allowed her to bypass some of the gendered scrutiny that has plagued other female leaders, while still setting a precedent for pragmatic female leadership in a high-stakes context.

In contrast, the United States offers a different rhetorical environment. The U.S. presidential system encourages more personalised, adversarial styles of speech, and the two-party structure amplifies ideological divisions. Female politicians in this context, such as Hillary Clinton, have faced not only institutional resistance but also intense media scrutiny and voter bias. Clinton's decades in public life were marked by continuous negotiation with gendered expectations. Her rhetorical strategies evolved over time from the forceful advocacy of her early political speeches to more emotionally resonant storytelling in her later campaigns. However, the U.S. media consistently evaluated her through a

gendered lens, with commentary on her tone, facial expressions, and wardrobe often overshadowing substantive policy discussions.

Clinton's 1995 speech at the UN Fourth World Conference on Women in Beijing famously declaring "women's rights are human rights" remains one of the most cited moments in feminist political rhetoric. It exemplified the power of strategic framing: by linking gender equality to universal human rights, Clinton shifted the discourse from domestic partisanship to global ethical responsibility. Yet in her presidential bids, Clinton's rhetorical success was often undermined by public distrust a reflection not only of partisan politics but also of the deep entrenchment of gender norms in American political culture.

New Zealand, by contrast, has offered a more hospitable environment for empathetic, inclusive leadership, as demonstrated by Jacinda Ardern. Her premiership (2017–2023) was globally celebrated for its transparent and compassionate communication style, particularly during crises. In the aftermath of the 2019 Christchurch Mosque attacks, Ardern's speech and symbolic actions wearing a hijab, embracing victims' families, and refusing to name the attacker represented a masterclass in emotionally resonant, values-driven leadership. Her speeches consistently highlighted empathy, social unity, and collective healing, framed in simple but powerful language. Media around the world praised her for demonstrating a new form of leadership one that did not rely on bravado or detachment but on emotional intelligence and ethical clarity.

The structure of New Zealand's parliamentary system, along with its progressive political culture and relatively high level of media accountability, allowed Ardern's style to flourish. While she did face criticism, particularly from international commentators accustomed to more aggressive forms of leadership, her domestic support remained strong for much of her term. Her case shows how political context along with institutional openness and cultural values can enable female leaders to expand the boundaries of acceptable political speech.

These three cases demonstrate that political systems and cultures profoundly shape the rhetorical possibilities for female leaders. In Germany, competence-based leadership allowed Merkel to eschew emotional appeals while still asserting moral authority. In the U.S., Clinton's rhetorical versatility was constantly challenged by a hyper-personalised media environment and ingrained biases. In New Zealand, Ardern was able to embrace a fully empathetic leadership style that redefined global expectations of political communication. These variations underscore the importance of considering national context when analysing the rhetoric of female politicians and when interpreting the results of computational analysis tools like topic modelling.

The scholarship reviewed in this chapter demonstrates that female political leaders navigate a uniquely complex rhetorical landscape, shaped by societal

expectations, media representation, institutional design, and cultural norms. Theoretical frameworks such as feminist political theory, role congruity theory, and stereotype threat offer insights into the structural and psychological pressures that female politicians face. Empirical studies reveal consistent patterns in how women are perceived, evaluated, and framed in political discourse patterns that, in turn, shape the stylistic and thematic elements of their public communication.

A number of recurring themes have emerged: female politicians tend to be evaluated more on likability than competence; they are expected to balance authority with warmth; and they often foreground policy areas such as healthcare, education, and social justice. In response to these pressures, women adopt a range of rhetorical strategies from strategic emotionality to pragmatic understatement to assert credibility and maintain public support.

However, much of the existing literature remains limited to either qualitative case studies or statistical analyses of representation. There is a relative lack of computational analysis of political speech, particularly from a gendered perspective. While some scholars have begun using tools such as sentiment analysis and keyword extraction, few have applied topic modelling or other unsupervised machine learning techniques to large corpora of female political speech. This gap is particularly notable given the increasing accessibility of digital tools and corpora in the field of digital humanities.

While the use of computational tools in the study of political discourse has gained considerable traction, much of the existing literature remains focused on macro-level thematic trends or policy agendas, often at the expense of rhetorical nuance, speaker identity, and the temporal evolution of political voice. This project seeks to address that lacuna by interrogating how political leaders specifically Mary Robinson, Mary McAleese, Hillary Clinton, Angela Merkel, and Jacinda Ardern construct and transform their rhetorical identities over time. Employing a hybrid methodology that combines dynamic topic modelling (via MALLET) with close reading and interpretive discourse analysis (using Voyant and manual annotation), the project centres not simply on what themes are present in speeches, but on how those themes are deployed and evolve in relation to changing political, cultural, and historical contexts.

To situate this approach, it is helpful to consider how other scholars have applied similar computational methods, particularly dynamic topic modelling (DTM), and to what ends. Three studies in particular Greene and Cross (2022), Tunney (2023), and Adnan et al. (2020) offer useful points of comparison and divergence.

In their article "Exploring the Political Agenda of the European Parliament Using a Dynamic Topic Modelling Approach" (Political Analysis), Greene and Cross make a strong case for the utility of DTM in tracing the institutional agenda-setting processes of the European Parliament over a 15-year period. Their study

tracks changes in policy salience across plenary debates, identifying patterns in issue prioritization that correspond to both exogenous shocks (e.g., economic crises, security threats) and endogenous factors (e.g., committee restructuring or enlargement of the EU).

Methodologically, their use of a nonparametric dynamic topic model allows for a flexible number of topics over time, enabling the model to accommodate emerging discourses without being constrained by a fixed set of themes. The temporal granularity of their analysis is impressive, with topic proportions computed over monthly and quarterly intervals.

Yet, despite this sophistication, the study remains resolutely focused on the institutional rather than the individual. Political actors are subsumed into a macro-level analysis where their rhetorical choices are flattened into thematic aggregates. There is no attempt to track how a specific member of the European Parliament constructs a narrative, shifts rhetorical strategies, or adapts over time. In contrast, the present study foregrounds rhetorical subjectivity it is concerned not with what the institution says, but how individual leaders navigate political meaning-making in real time.

Peter Tunney's recent article "Digital Methods and Political Discourse: Analysing Rhetorical Strategy in UK Parliamentary Speech" (Parliaments, Estates and Representation, 2023) brings computational methods closer to the realm of rhetorical analysis. Tunney blends topic modelling with more traditional rhetorical tools to examine how MPs construct persuasive arguments in speech, with particular attention to metaphors, tropes, and ethos appeals.

Crucially, Tunney also emphasizes the situatedness of speech how rhetoric is shaped by the performative demands of the chamber, the expectations of party loyalty, and the emotional tone of national crises. His study recognizes that political discourse is not merely thematic but affective and embodied.

However, Tunney's scope is still speech-level rather than corpus-level. That is, while he may analyse several speeches by the same individual, there is little attempt to trace the longitudinal development of a political identity across time and context. In contrast, this project uses DTM not just to classify themes but to identify patterns of rhetorical continuity and rupture across years of speeches. For example, observing how Angela Merkel's language shifts from technocratic restraint to emotional resonance during the European migrant crisis offers insight into how rhetorical strategies evolve in response to moral and political pressure.

Adnan et al.'s paper "Topic Discovery and Future Trend Forecasting in Parliamentary Debates Using Dynamic Topic Modelling" (IEEE Access, 2020) offers a more technologically advanced application of DTM, incorporating forecasting algorithms to predict future topic trends based on historical data. Their

model identifies dominant themes in parliamentary debates across multiple countries and proposes potential shifts in policy focus.

Their work excels in scale and predictive power, using large datasets to generate statistically significant insights about discourse dynamics. But here too, the methodological emphasis is on generalizability and abstraction. The focus is not on what speech reveals about individual leadership, rhetorical craft, or affective appeal it is on institutional forecasting. As such, the model is optimized for horizontality (across parliaments) rather than verticality (through time within an individual speaker's voice).

This project diverges sharply in both aim and method. Rather than using topic modelling to anticipate future discourse, it uses it to understand past discourse more deeply. Here, DTM functions as an exploratory tool that reveals hidden structures in language, which are then subjected to interpretive scrutiny through close reading. For example, if topic modelling identifies a cluster of speeches by Jacinda Ardern revolving around "compassion," "unity," and "violence," the analysis would trace how those themes function rhetorically in the wake of the Christchurch attacks how they interweave with national trauma, leadership style, and gendered expectations.

Taken together, these studies highlight the range of possibilities afforded by dynamic topic modelling from agenda-setting analysis to rhetorical strategy and trend forecasting. However, they also reveal a persistent limitation: the tendency to treat political speech as either data points in a corpus or instances of institutional discourse, rather than as performances of political identity unfolding through time.

This project addresses that limitation by shifting the analytical lens from topics-as-outputs to topics-as-signposts indicators of where close reading might yield the richest insight. In doing so, it reclaims political speech as a literary, affective, and strategic act, not just a vessel of content. The rhetorical identities of leaders like Clinton or Merkel are not fixed but shaped in motion through crises, campaigns, criticism, and cultural change.

Thus, where prior studies focus on what is said and when, this project asks how it is said, why it is said that way, and what that tells us about political voice, leadership, and gender. It is in this qualitative ambition this insistence on reading topic models not just for trends but for meaning that the project makes its critical intervention.

This dual approach combining computational analysis with critical interpretation aligns with current priorities in the digital humanities, which emphasise the value of both data-driven insights and humanistic reasoning. By mapping recurring topics and stylistic patterns in the speeches of high-profile female leaders, this

research contributes to a more nuanced understanding of gendered political communication and demonstrates how digital tools can enhance traditional modes of textual analysis.

Ultimately, the goal of this project is not simply to quantify how women in politics speak, but to explore why they speak the way they do, how they are constrained or empowered by their context, and what their rhetoric reveals about broader trends in leadership, gender, and power. This literature review provides the foundation for that inquiry by synthesising key theories, empirical findings, and methodological debates in the field and by identifying a clear space for further research through digital, speech-based analysis.

Methodology

This project adopts a mixed-methods digital humanities approach that combines computational text analysis with interpretive, theory-informed close reading. The core aim is to explore the rhetorical strategies, and thematic concerns present in political speeches delivered by five high-profile female leaders across different national and temporal contexts. By applying both topic modelling (Latent Dirichlet Allocation via MALLET) and stylistic analysis (using Voyant Tools and manual interpretation), the research draws from both quantitative linguistic patterning and qualitative feminist rhetorical analysis. This dual strategy is grounded in the interdisciplinary nature of digital humanities, which encourages methodological innovation and the fusion of humanistic inquiry with technological tools.

The project follows a case study-based design, with a focus on five internationally recognised female leaders: Mary Robinson, Mary McAleese, Hillary Clinton, Angela Merkel, and Jacinda Ardern. Their speeches were selected as the units of analysis to represent diverse cultural, political, and ideological contexts. The research is comparative in nature, examining both commonalities and differences in rhetorical approaches across speakers, parties, and national settings.

A mixed-methods model was selected to enable analysis at both the macro (thematic) and micro (stylistic) levels. Thematic analysis was conducted using unsupervised machine learning, while stylistic analysis used visualisation tools and close reading techniques. This two-pronged approach reflects the growing interest in distant reading within the digital humanities, while also upholding the interpretive rigour of feminist criticism.

The methodology is informed by a combination of feminist political theory, role congruity theory, and digital humanities methodology. Feminist political theory, as developed by scholars such as Anne Phillips (1995), Mona Lena Krook (2010), and Fiona Mackay (2004), provides the critical lens through which the speeches are interpreted. These theories highlight how institutional structures, cultural expectations, and symbolic representation affect how women speak and are spoken about in political life.

Role congruity theory (Eagly and Karau, 2002) and stereotype threat (Steele and Aronson, 1995) further support the analysis by explaining the psychological and performative pressures faced by female leaders. These theories contextualise the rhetorical decisions made by leaders such as tone, emotionality, and topic choice and justify the study's attention to both style and content.

The use of topic modelling is grounded in digital humanities literature on distant reading (Moretti, 2013), while the close reading and stylistic interpretation

component aligns with the critical-interpretive tradition of humanities scholarship, especially within feminist digital practices (Losh, 2012).

The data consists of a manually curated corpus of over 30 speeches delivered between 1990 and 2020. The leaders selected represent a diverse cross-section of geographical, ideological, and institutional contexts: Ireland, the United States, Germany, and New Zealand. Criteria for speech selection included:

♦ Political or symbolic significance (e.g. inauguration speeches, major policy announcements, crisis responses)
♦ Public accessibility and authenticity (sourced from official archives or verified transcripts)
♦ Representation across career stages and political events
♦ Availability in English (original or official translation)

This sampling strategy aimed to balance depth and breadth, enabling the capture of recurring themes without overrepresenting a single leader or national context. All speeches were labelled with metadata (e.g. speaker, year, title, context) to support categorisation and analysis.

The project combines two primary analytical models: topic modelling (distant reading) and stylistic analysis (close reading). These modes are not viewed as separate, but rather as complementary, offering different levels of insight into the same data.

Latent Dirichlet Allocation (LDA) was chosen as the primary method for thematic modelling. Implemented through the MALLET software package, LDA groups co-occurring words into probabilistic "topics" and allows each document (speech) to exhibit multiple topics in varying proportions.

This method was selected due to its success in previous digital humanities projects focused on political texts and its scalability in handling medium-sized corpora like this one. The outputs of MALLET clusters of terms and document-topic matrices were analysed and interpreted manually, informed by the surrounding political context and feminist frameworks.

Stylistic analysis was performed using Voyant Tools, an online environment for textual analysis and visualisation. Voyant enabled examination of word frequency, term trends, keyword-in-context (KWIC), and lexical diversity. These features supported identification of rhetorical strategies—such as repetition, tone, and use of emotionally charged language frequently employed by female leaders.

To enhance accessibility and visual interpretation, WordArt.com was used to generate thematic word clouds for each speaker. These were complemented by

Canva graphics and compiled into a PowerPoint presentation for academic and public dissemination.

This research is rooted in interpretivist epistemology, which holds that knowledge is constructed through subjective interpretation rather than discovered as objective truth. This is particularly appropriate in the analysis of political rhetoric, where meaning is shaped not only by words but by context, delivery, reception, and the identities of both speaker and audience.

Additionally, the project is influenced by the principles of feminist digital humanities, which emphasise reflexivity, inclusivity, and the ethical treatment of both subjects and texts. This perspective informs the decision to foreground female voices in politics and to consider symbolic power alongside statistical or linguistic trends.

As a researcher within the field of digital humanities, my own positionality inevitably informs the analytical choices made throughout the project. While computational methods may suggest a level of objectivity, the interpretation of topics, the decision to emphasise certain stylistic traits, and the framing of themes are all subject to critical judgment. My background and academic training in gender studies and humanities shaped the emphasis on care, equity, and representation in both methodology and interpretation.

Several limitations inherent to the chosen methodology must be acknowledged:
- Corpus Size: While diverse, the dataset remains relatively small for topic modelling standards, which can impact the statistical reliability of the topics produced.
- Language Restriction: Only English speeches were included, excluding potentially rich rhetorical data delivered in other languages.
- Subjectivity of Interpretation: Despite the support of computational models, interpretation of themes and rhetorical styles involved subjective decisions.
- Tool Constraints: Voyant Tools and WordArt are limited in customisation compared to advanced linguistic software, and visualisations may oversimplify complex rhetoric.

Nonetheless, the mixed-methods approach offers valuable insight into how these leaders engage with their audiences and address the political issues of their time.

Tools and Methods

This project employs a mixed-methods approach combining computational text analysis with critical qualitative interpretation. At its core, the study applies topic modelling to a curated corpus of speeches by five prominent female political leaders, supported by close stylistic analysis and the creation of visual artefacts. Tools such as MALLET, Voyant, Python, were used throughout, with development conducted using Mac Terminal and Xcode to manage local scripts and software installations.

The speech corpus includes over 30 major public addresses from Mary Robinson, Mary McAleese, Hillary Clinton, Angela Merkel, and Jacinda Ardern. Speeches were sourced from official government archives, presidential libraries, and major news organisations. Only speeches originally delivered in English, or officially translated, were included to ensure linguistic consistency. The corpus was formatted in plain text and organised chronologically by speaker and theme.

All texts were pre-processed using Python (with Pandas and regular expressions) to remove extraneous data like HTML tags, annotations (e.g. [applause]), inconsistent line breaks, and headers. All texts were tokenised, normalised (lowercased), and converted into clean .txt files for analysis. This step ensured compatibility with the requirements of MALLET and Voyant Tools.

Topic modelling was conducted using MALLET (Machine Learning for Language Toolkit), an open-source Java package commonly used in digital humanities. The analysis focused on Latent Dirichlet Allocation (LDA), which identifies patterns of word co-occurrence to infer topics across large corpora.

The project was conducted on a MacOS development environment, using Mac Terminal to execute MALLET commands. Xcode Command Line Tools were required to ensure proper configuration of Java-based tools. Several topic numbers were tested; ultimately, 15 topics were selected as they offered the most semantically coherent and thematically meaningful output.

For rhetorical and lexical exploration, Voyant Tools was used to analyse term frequency, collocations, vocabulary density, and keyword trends across the corpus. Each leader's speeches were also evaluated for tone and stylistic traits, such as inclusive pronoun use (we, us) and recurring motifs (e.g., hope, responsibility, rights).

To create engaging, visually intuitive representations of rhetorical patterns, WordArt.com was used to generate custom word clouds for each leader. These

visualisations reflected the most frequently used terms and helped highlight each speaker's thematic focus.

The project combined digital analysis, data cleaning, and creative visualisation tools to support both scholarly interpretation and clear public communication.
Tools Summary Table:

- ♦ MALLET – Topic modelling via LDA. Run using Mac Terminal with Xcode CLI tools.
- ♦ Voyant Tools – Textual and lexical analysis. Web-based platform for stylistic comparison.
- ♦ Python (Pandas) – Text preprocessing. Cleaned and normalised the corpus.
- ♦ WordArt – Word cloud generation. Custom visuals for thematic emphasis.
- ♦ Mac Terminal/Xcode – Development and command-line toolchain to execute scripts.
- ♦ Microsoft Word – Corpus annotation, report drafting, and metadata tagging.

All texts used in this project were publicly accessible and legally distributable. Speech data was not altered beyond basic formatting and cleaning, and no private information or sensitive content was included. Visuals created using Canva and WordArt are original artefacts based on public domain content. The project complies with UCC's research ethics and digital scholarship best practices.

Implementation

The implementation phase of this project translated the proposed methodological framework into a series of structured, iterative tasks aimed at uncovering thematic and rhetorical patterns within speeches delivered by five prominent female political leaders. This phase encompassed corpus curation, computational analysis using topic modelling, and multi-platform visualisation, integrating both quantitative and interpretive approaches in line with current digital humanities practice. It also involved repeated refinement based on peer feedback and theoretical guidance, ultimately yielding a nuanced and accessible analysis of political speech.

The first stage involved compiling and organising a custom corpus of political speeches. Transcripts were sourced from a combination of public archives, institutional repositories, and official government websites. Each file was converted into UTF-8 encoded plain text and renamed using a consistent metadata convention that included the speaker's name, year of delivery, and the speech's occasion (e.g., Clinton_1995_WomensRightsAreHumanRights.txt). The corpus was structured into speaker-specific subdirectories to facilitate batch processing and comparative analysis.

Inconsistencies in file formatting and missing metadata required a degree of manual correction. Several speeches were excluded due to incompleteness or a lack of contextual markers. A custom Python script was created to clean the files, standardise spacing and punctuation, and remove unnecessary headers or footers ensuring compatibility with the computational tools used later.

At the core of the analytical process was the application of topic modelling using the open-source package MALLET (Machine Learning for Language Toolkit). This software implements Latent Dirichlet Allocation (LDA), a probabilistic algorithm developed by Blei, Ng, and Jordan (2003) that assumes each document is a mixture of topics, and each topic a distribution over words. Topic modelling was selected for its capacity to reveal latent structures in large textual corpora and provide a data-driven basis for thematic interpretation.

MALLET was installed and executed via the Mac Terminal. Using the import-dir command, the cleaned corpus was imported with stopword filtering enabled. Initial attempts at installation revealed compatibility issues with Java, necessitating the installation of Xcode Command Line Tools and adjustment of environment variables. These technical hurdles highlighted the importance of infrastructural literacy in digital scholarship.

Several topic models were generated, with topic counts ranging from 10 to 25. As Clay Templeton (n.d.) and Ted Underwood (2012) suggest, the selection of an

optimal number of topics is both a computational and interpretive decision. Lower-topic models tended to oversimplify thematic complexity, while higher-topic models produced fragmentation and semantic redundancy. After close review, a 15-topic model was identified as the most balanced in terms of coherence, interpretability, and thematic breadth.

Each topic generated by MALLET was represented by a list of 20–30 weighted keywords. These were exported and manually reviewed to derive meaningful thematic labels, guided by the interpretive principles outlined by Rhody (2012) in Some Assembly Required. Rhody, along with David Mimno (2022), cautions against treating topic models as objective outputs, instead encouraging a human-centred approach to interpretation.

The final list of 15 topics reflects both the content of the corpus and the dominant discursive modes present in the speeches. Keywords were analysed not only in isolation, but in relation to each other and to the broader political and rhetorical context in which they occurred.

Topic Number	Top Keywords	Interpreted Theme
1	equality, respect, women, community, rights, children, justice	Human Rights, Equality & Social Justice
2	leadership, nation, people, future, government, prosperity, democracy, economy	National and Global Leadership
3	jobs, growth, people, security, opportunity, future, economy, prosperity	Economic Growth & Social Development
4	world, international, nations, common, responsibility, freedom, partnership	Unity, Cooperation & International Relations
5	security, war, peace, crisis, stability, responsibility, terrorism	Crisis Management & National Security
6	Ireland, Irish, identity, culture, history, language, community, heritage	Cultural Identity & National Memory
7		Gender, Labour & Care Work

	women, families, work, children, support, care, gender, labour	
8	people, health, public, service, support, welfare, mental, poverty	Health & Social Welfare
9	today, hope, future, strength, personal, resilience, pride, courage	Emotional Appeal & Personal Rhetoric
10	America, Americans, country, jobs, trade, economy, tax, president	American Economic Rhetoric
11	European, union, Europe, member, parliament, democracy, shared, growth	European Integration & Policy
12	education, schools, learning, children, access, knowledge, youth	Education & Youth Empowerment
13	climate, planet, environment, energy, change, responsibility, sustainability	Climate Change & Environmental Advocacy
14	freedom, democracy, values, constitution, law, rights, vote, justice	Democratic Values & Civil Liberties
15	speeches, thank, honour, celebrate, gathering, moment, legacy, event	Ceremonial Language & Public Address

Each topic contributed unique insights into how female leaders positioned themselves rhetorically and politically. For example, Topic 1 was strongly associated with Hillary Clinton and Mary Robinson, whose speeches frequently invoked discourses of equality and justice. Topic 5 emerged in response to national and global crises, while Topic 9 captured the affective registers of speeches dealing with loss, transition, or inspiration.

Thematic relationships between topics were further analysed and grouped into broader discourse clusters:

- Governance & Policy: Topics 2, 3, 10, 11, 14
- Social Advocacy & Welfare: Topics 1, 7, 8, 12, 13
- Security & Diplomacy: Topics 4, 5
- Cultural Identity & National Memory: Topics 6, 15
- Rhetorical & Emotional Tone: Topics 9, 15

To complement the thematic insights generated by LDA, Voyant Tools was used to explore surface-level stylistic trends. This included analysis of:
- Word frequency and density
- Collocations and co-occurrence patterns
- Keyword-in-context (KWIC)
- Lexical diversity

Each leader's speech collection was uploaded individually and in aggregate. Analysis revealed distinct rhetorical signatures for instance, Jacinda Ardern frequently employed inclusive language (we, our, together), while Ellen Johnson Sirleaf emphasised themes of resilience and nation-building.

WordArt.com was used to generate shaped and colour-coded word clouds for each speaker, offering a more aesthetic, public-facing mode of engagement with textual patterns. These visuals were further refined using Canva, which facilitated the creation of infographics, visual summaries of topic proportions, and annotated quotes. These elements were used in the written report and integrated into the PowerPoint presentation delivered at the project showcase.

The implementation process followed an iterative cycle of modelling, evaluation, refinement, and visualisation. Early topic models revealed formatting inconsistencies in the corpus, prompting additional cleaning and reprocessing. Peer feedback informed several improvements in visual clarity and data presentation. Adjustments to MALLET's stopword list removing high-frequency but low-value terms like government, president, and minister increased the semantic clarity of topics.

Technical challenges were typical of digital humanities workflows. In addition to initial Java compatibility issues, limitations were encountered with Voyant's customisation options and resolution of exported graphs. These were mitigated through manual editing in Canva and supplementary visual platforms.

The implementation phase confirmed the value of integrating computational tools with interpretive human analysis in the study of political language. The 15-topic model produced through MALLET revealed latent rhetorical structures that would not have emerged through manual reading alone, while complementary tools like Voyant and Canva enabled multi-layered, accessible interpretations. The process also reinforced the iterative nature of digital humanities work: each

step informed and improved the next, leading to more accurate results and richer insight. In line with Weingart's (2012) assertion that topic models are "maps, not territories," this analysis served not as a final answer but as a powerful method for exploration opening new pathways for understanding gendered political discourse in global contexts.

Analysis

This chapter presents the analytical findings of the project, combining topic modelling and stylistic analysis to explore how five female political leaders constructed their rhetorical strategies across three decades. The aim is to identify recurring themes, assess stylistic variation, and explore how context, identity, and political positioning influenced speech content. The chapter begins with an overview of themes uncovered through topic modelling via MALLET, followed by comparative speaker analysis, stylistic interpretation through Voyant Tools, and broader cross-cutting insights about crisis communication, moral authority, and gendered rhetoric.

The application of Latent Dirichlet Allocation (LDA) through MALLET revealed 15 distinct thematic clusters across the corpus. Each cluster consisted of 20–30 prominent keywords that co-occurred in meaningful ways. Manual interpretation allowed for these topics to be grouped under broader thematic categories, including Human Rights and Equality, Governance and Legislation, Crisis Response, Social Welfare, Global Diplomacy, National Identity, and Civic Values.

For example, one topic cluster prominently featured the terms: rights, equality, freedom, justice, and law strongly indicating a focus on human rights discourse. Another topic, centred on community, support, resilience, health, and kindness, reflected crisis-era rhetoric, especially during public health emergencies or violent incidents.

Comparative analysis showed that Robinson and Clinton's speeches shared frequent overlap in rights-based topics, while Merkel's corpus leaned heavily into governance and economic themes. Ardern's speeches, by contrast, contained high proportions of emotionally resonant, care-centred terms.

Topic proportions within individual speeches varied, with most documents representing between 3–6 topics. Speeches delivered during crises (e.g. Merkel's 2015 refugee address, Ardern's COVID-19 briefings) showed a narrower topic range and stronger emphasis on moral clarity and collective action.

Mary Robinson frequently employed a universalising rights-based discourse that merged national pride with international justice. Her speeches were notable for terms like equality, dignity, and voice, which consistently appeared in topic clusters tied to civic participation and human development.

Mary McAleese's addresses featured themes of reconciliation and identity, particularly in relation to the Irish peace process. Topic clusters included terms

such as bridge, understanding, faith, and children, suggesting a forward-looking and inclusive approach to national healing.

Angela Merkel's speeches reflected rational, technocratic leadership. Frequent terms in her speeches included responsibility, Europe, stability, and policy. She rarely used overt emotional appeals, instead relying on a tone of calm assurance and logical progression.

Hillary Clinton's rhetorical strategy integrated legalism with emotion. Topic modelling revealed a repeated emphasis on rights, families, policy, and leadership. She often drew on personal anecdotes and ethical appeals, especially in her 1995 and 2008 speeches.

Jacinda Ardern emerged as a distinctive voice, balancing empathy with authority. Her speeches frequently featured terms such as kindness, together, safe, and hope. These words were especially dominant in speeches following the Christchurch attacks and during the COVID-19 pandemic.

Using Voyant Tools, patterns in lexical choice and rhetorical structure became visible. Clinton and Robinson employed a higher frequency of inclusive pronouns (we, our), while Merkel's lexical field leaned toward abstract policy language (implementation, measures, institution).

Jacinda Ardern displayed the most emotive vocabulary, with repeated references to compassion, unity, and responsibility. Voyant's keyword-in-context tool revealed her tendency to frame government action through a shared lens (e.g., "we are in this together").

Lexical diversity metrics showed Clinton and Ardern to have the highest variety in vocabulary per speech, while Merkel's speeches were more repetitive but structurally precise. Repetitive phrasing was used rhetorically for emphasis, particularly by Ardern and McAleese.

Word clouds created using WordArt.com visualised the frequency and focus of each leader's lexicon. Merkel's word cloud was dominated by terms like Europe, responsibility, and policy, reinforcing her analytical style. Clinton's showed prominence of rights, families, and future.

Robinson's visual lexicon highlighted voice, people, and dignity, while Ardern's most visible terms were together, safe, and community. McAleese's word cloud reflected words such as peace, bridge, and education. Each visual told a rhetorical story reflecting not only values but also context.

These visuals provided a powerful complement to the topic modelling results, showing that the most semantically loaded and frequently repeated terms often aligned with broader thematic trends across leaders and contexts.

Three cross-cutting themes were identified across all five leaders: crisis communication, moral authority, and gendered language. Each leader employed distinctive rhetorical strategies when facing national or global crises. Merkel used moral pragmatism and emphasised collective responsibility. Ardern invoked collective empathy and a sense of national unity, while Clinton appealed to resilience, personal testimony, and shared ethical values.

Moral authority was often established through appeals to justice, care, or duty. Robinson's international speeches regularly invoked universal human rights and the dignity of all people. Ardern and McAleese grounded their moral framing in community healing and reconciliation, often using emotional and inclusive language. Clinton's authority came from her ability to blend legal language with personal connection.

Gendered expectations were evident in how these leaders' used language and in how that language was received. While they frequently drew on traits traditionally coded as "feminine" such as empathy, collaboration, and humility they often reframed these qualities as leadership strengths rather than weaknesses. This rhetorical move served to disrupt gendered binaries while still appealing to broad audiences.

This chapter has demonstrated how thematic and stylistic analysis can reveal distinct yet overlapping rhetorical strategies among female political leaders. Each figure deployed language tailored to her national context and political mission, yet patterns such as inclusive framing, emotional resonance, and rights-based advocacy recurred throughout the corpus.

Digital tools like MALLET and Voyant provided a foundation for identifying key topics and trends, while close reading and visualisation enabled interpretation beyond numbers. Together, these insights highlight how gender, power, and communication intersect on the global political stage.

This section also affirms the value of combining computational analysis with humanistic interpretation. While tools such as MALLET help identify broad structures, the human element remains essential in understanding how rhetorical decisions shape, reflect, and respond to the complex realities of leadership.

Reflection

The results of this project demonstrate that topic modelling, when combined with stylistic and contextual analysis, can reveal meaningful patterns in political rhetoric that speak directly to questions of gender, leadership, and discourse. The use of MALLET to implement Latent Dirichlet Allocation (LDA) successfully identified 15 semantically coherent topics across over 30 speeches, each corresponding to key thematic areas such as human rights, crisis management, economic development, gender equality, and international cooperation. These results were not only internally consistent within speeches but also aligned with known political contexts and rhetorical priorities of each leader.

For instance, Topic 1 (Human Rights, Equality & Social Justice) featured prominently in the speeches of Hillary Clinton and Mary Robinson, reflecting their sustained engagement with global rights discourse. Clinton's "Women's Rights are Human Rights" speech aligned especially closely with this cluster, underscoring how computational tools can reaffirm qualitative observations. Similarly, Topic 5 (Crisis Management & National Security) was particularly dominant in speeches delivered by Angela Merkel and Jacinda Ardern during moments of national crisis, such as the European migrant crisis and the Christchurch Mosque shootings.

Graphical visualisations including word clouds, keyword-in-context analysis, and topic distribution charts supported these findings and added accessible entry points into the corpus. The word clouds, for instance, highlighted stylistic contrasts: Ardern's emphasis on terms like together, kindness, and safe stood in sharp contrast to Merkel's use of policy-focused language such as stability, measures, and Europe. These visual elements not only confirmed patterns observed through Voyant Tools but also made the results interpretable to non-specialist audiences a key goal in digital humanities communication.

Critically, the findings show that computational methods are most powerful when interpreted through theoretical frameworks. While MALLET generated objective patterns in word usage, the real insight emerged from examining these patterns through the lenses of feminist political theory, role congruity theory, and discourse analysis. This dual approach allowed the project to move beyond thematic tagging and into deeper questions: How do women in power speak differently? Why are certain rhetorical strategies used and received the way they are?

The project successfully addressed its core research questions by demonstrating that:

- ♦ Female leaders consistently employ rhetorical strategies rooted in empathy, moral clarity, and inclusive language.
- ♦ National and political contexts significantly influence rhetorical choices, from Ardern's emotionally resonant storytelling to Merkel's pragmatic precision.
- ♦ Digital tools like MALLET and Voyant can uncover both macro-level themes and micro-level stylistic shifts, offering a fuller picture of political discourse than manual analysis alone.

Furthermore, this study showed how digital methodologies can be ethically and critically aligned with humanistic inquiry, particularly in fields like gender studies and political communication. The creation and interpretation of the digital artefact were not just technical tasks, but part of a broader reflection on whose voices are heard in politics, how they are constructed, and how they can be studied with care and rigour.

Ultimately, the results affirm that the combination of topic modelling and feminist critique does not dilute the complexity of political speech it amplifies it. The artefact created is a map of rhetorical intention, identity, and power, and a testament to the richness of political speech as both data and discourse.

Conclusion

This project set out to explore the rhetorical strategies of five prominent female political leaders Mary Robinson, Mary McAleese, Angela Merkel, Hillary Clinton, and Jacinda Ardern using a mixed-methods approach grounded in digital humanities and feminist theory. By applying topic modelling and stylistic text analysis to over 30 speeches spanning three decades, the aim was to identify recurring themes, patterns of rhetorical emphasis, and stylistic choices that speak to how gender intersects with political leadership. This conclusion reflects on the project's findings, its contribution to scholarship, its methodological value, and its future potential.

The project revealed several recurring themes across the speeches of all five leaders, including human rights, crisis management, equality, empathy, and civic responsibility. These themes, however, were framed and delivered through highly individual rhetorical styles, shaped by national context, political ideology, and historical moment.

Topic modelling via MALLET proved particularly effective in uncovering the underlying thematic structure of speeches. It showed how different leaders emphasised different topics depending on context Clinton and Robinson focused heavily on rights and justice; Merkel on governance and stability; Ardern on empathy and community; and McAleese on reconciliation and education.

Stylistic analysis using Voyant Tools demonstrated that language choices are deeply informed by gendered expectations. Inclusive language (e.g. we, our), emotive appeals (e.g. hope, kindness), and moral framing (e.g. justice, responsibility) featured prominently. These choices, while contextually flexible, often challenged conventional models of authoritative political rhetoric.

One of the significant contributions of this project is its methodological approach. By combining topic modelling with close reading and visualisation, it demonstrated how digital tools can support critical humanistic inquiry. MALLET and Voyant Tools, when used alongside manual interpretation and visualisation tools like WordArt and Canva, enabled a layered and nuanced analysis of complex political texts.

The project also highlighted the value of iterative, flexible workflows in digital humanities research. Reprocessing data, refining stopword lists, and validating topic clusters were all necessary stages that required balancing computational output with critical interpretation. While tools like MALLET offered quantitative insight, their results only became meaningful when situated within broader feminist and political frameworks.

This research contributes to the evolving field of digital humanities by applying computational methods to questions of gender, language, and leadership. It affirms that quantitative tools like topic modelling are not incompatible with feminist critique; on the contrary, they can deepen and sharpen it by revealing patterns that may be overlooked in traditional analysis.

From a gender studies perspective, the project reinforces the importance of rhetorical analysis in political discourse. It shows how female leaders use language not only to govern, but to perform legitimacy, navigate bias, and build coalitions. These speeches were not only responses to events they were active interventions in shaping what leadership looks like.

While the project achieved its aims, certain limitations must be acknowledged. The corpus, though diverse, was relatively small, limiting the generalisability of findings. Language restrictions meant that only speeches delivered in English or officially translated were analysed, potentially excluding cultural nuance from non-English rhetoric.

Additionally, while topic modelling provides valuable thematic insights, it cannot account for tone, irony, or rhetorical context without human interpretation. The project relied heavily on the researcher's judgment in labelling and interpreting topics, which introduces subjectivity despite the computational tools used.

This project opens multiple avenues for further research. Expanding the corpus to include more leaders from non-Western contexts, longer timeframes, or multilingual datasets would enrich the analysis. Combining sentiment analysis or named entity recognition with topic modelling could also yield more granular insights into political rhetoric.

More broadly, this project invites digital humanities scholars to engage more fully with feminist theory and political communication. Tools like MALLET, Voyant, and even emerging AI models can benefit from being shaped by critical inquiry not just technical proficiency. Bridging these fields has the potential to make both more impactful and inclusive.

At its core, this project affirms the power of language to shape public life, and the capacity of female political leaders to redefine what that language can look like. Their speeches reveal not only strategic communication but also deeply embedded ethical frameworks that are collaborative, inclusive, and often subversive of patriarchal norms.

By tracing rhetorical patterns through digital methods, this study makes a small but meaningful contribution to understanding how gender, leadership, and speech intersect on the global stage. In doing so, it also affirms the value of combining

computational tools with critical theory, and the importance of using technology not just to measure language, but to listen to it.

Appendix: Extended Visual Data

Image 1 – Pictured are the politicians I chose and a symbol for female.

Timeline

| September | October | November | December |

Idea Selection

In September I went through potential topics until I landed on my final idea of topic modelling for female politicians speeches

Finalising Idea and Assembling Corpus

I finalised my idea by deciding which politicians to focus on and started assembling my corpus of speeches cleaning the speeches and translating words from German, Irish and Maori.

Learning how to use MALLET

In November I started to look at potential tools I could use for the topic modelling and ultimately decided on using MALLET. MALLET (MAchine Learning for LanguagE Toolkit) is a widely used topic modeling and natural language processing (NLP) tool used with python developed by the University of Massachusetts Amherst.

Starting Analysis

I started the analysis of the data on December 17th. This started with an initial analysis and eventually honing in on specifics.

| April | March | February | January |

Open Day

In April I am finalising my thesis and was able to present my project on April 2nd for open day.

Compiling Analysis and Results

I started writing my results and began creating graphics for my final product. I created graphics to represent the data and results that I have concluded and compiled this for my open day. I also created my video for project.

Final Analysis

I got my final analysis at the end of February and was able to begin writing on what similarities between politicians were present.

Continuing Analysis

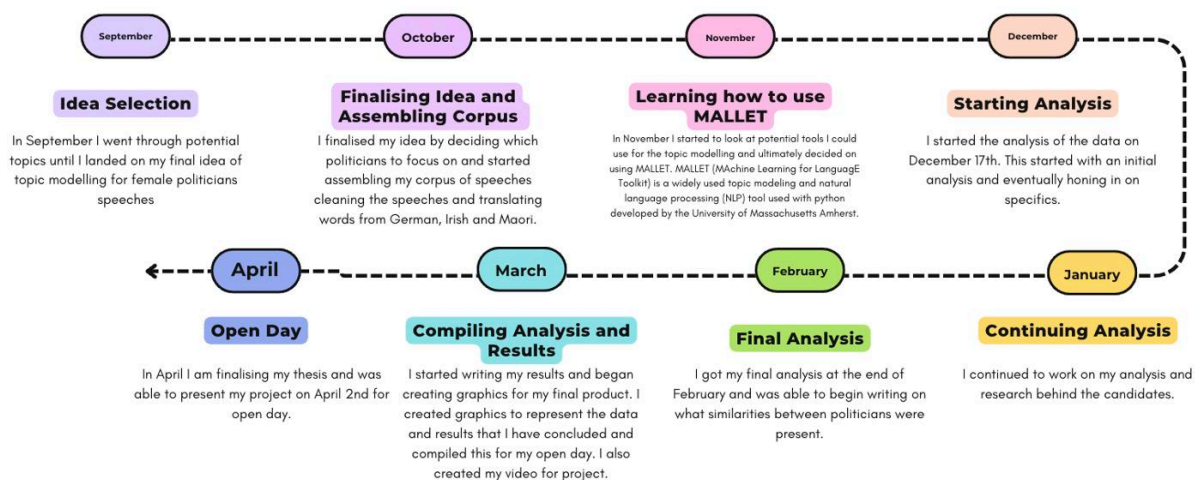I continued to work on my analysis and research behind the candidates.

Image 2 – Graphic for Yearly Timeline

Image 3 – Mallet Demo

Step 1: Import the cleaned speech corpus into MALLET format

```
bin/mallet import-dir --input speeches_cleaned/ --
output speeches.mallet --keep-sequence --remove-
stopwords
```

This command was executed in Mac Terminal using MALLET to run LDA topic modelling on the cleaned speech corpus.
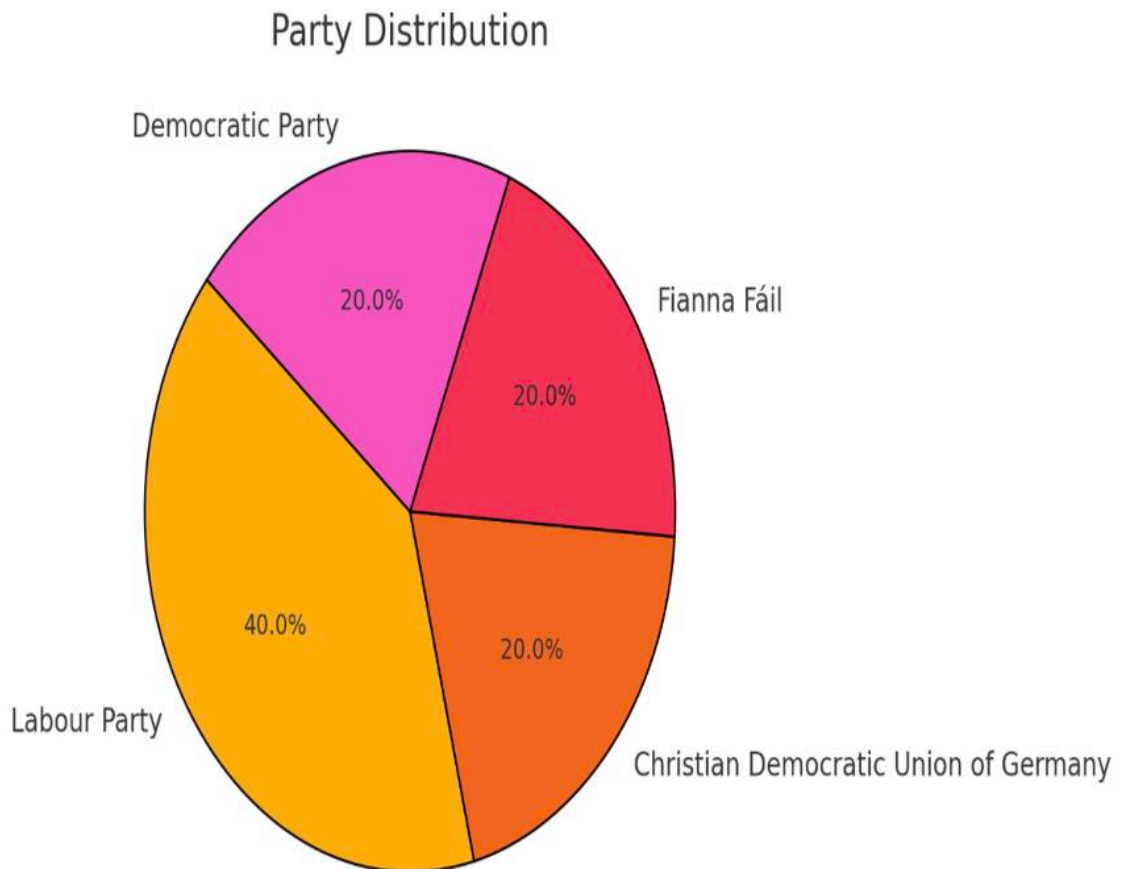
Image 4 – Pie Chart of Party Distribution

Image 5 – Word Cloud of first theme

Image 6 – Graphic for Analysis of first theme
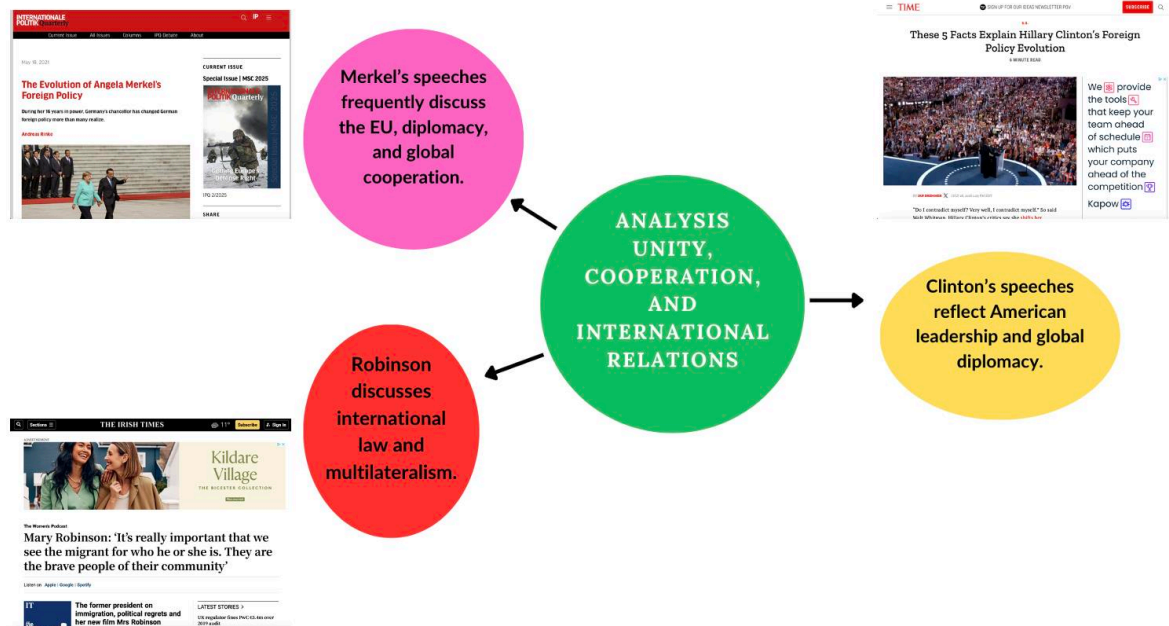

Image 7 – Word Cloud of second them

Image 8 – Graphic of Analysis of second theme

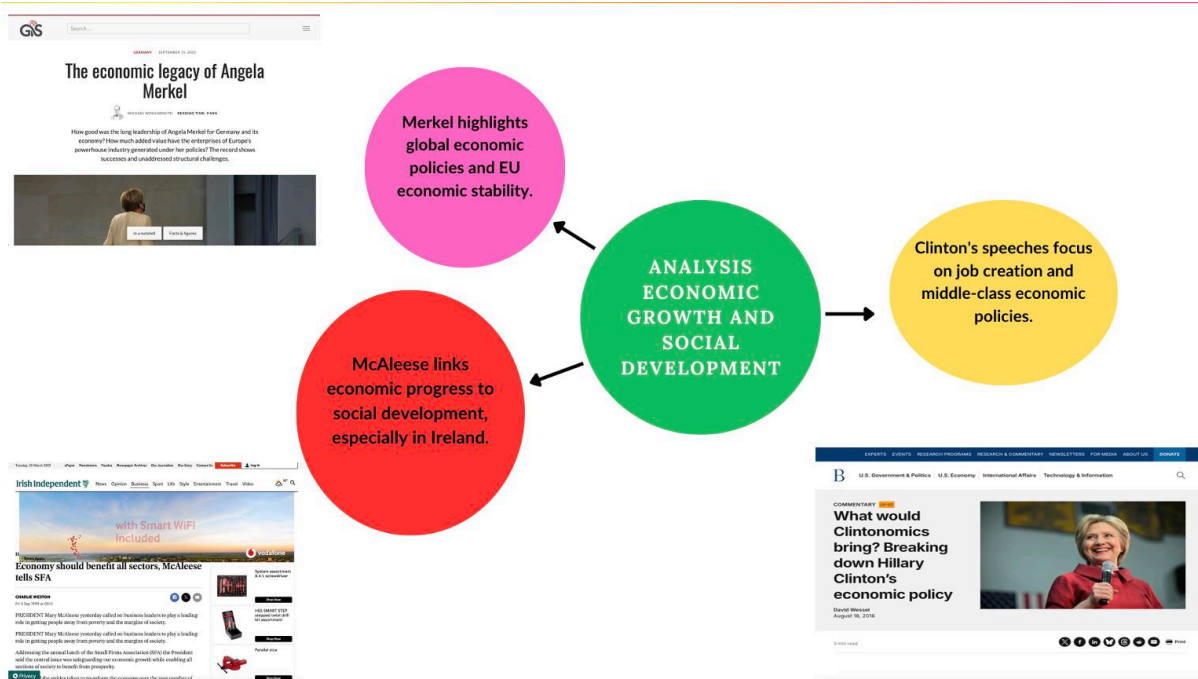Image 9 – Word Cloud for third theme

Image 10 – Graphic for Analysis of third theme

Image 11 – Word Cloud for fourth theme

Image 12 – Graphic for Analysis of fourth theme

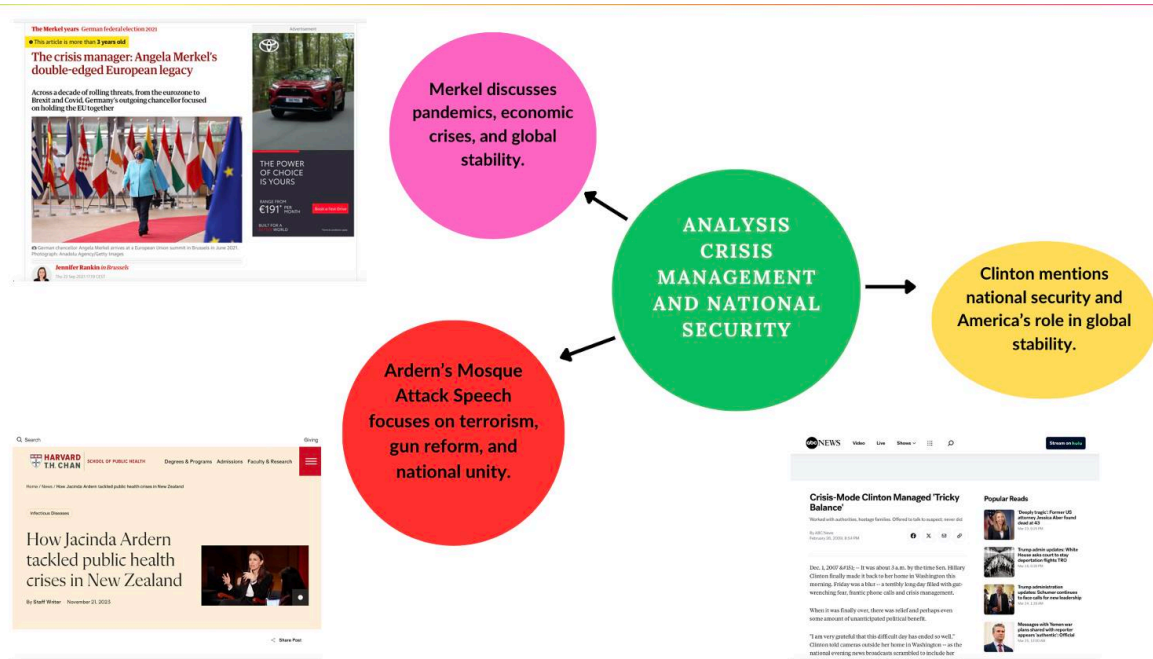Image 13 – Word Cloud for fifth theme

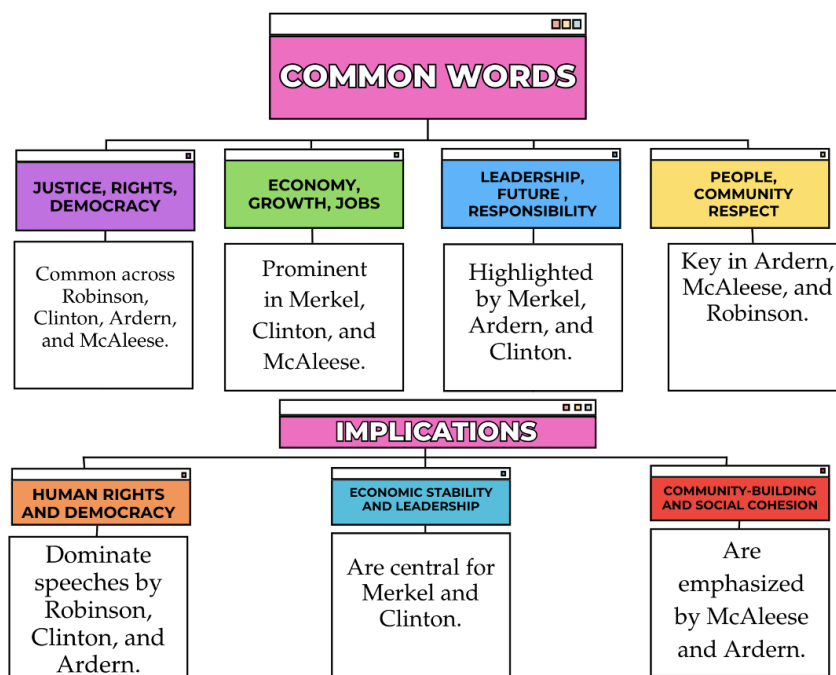Image 14 – Graphic for Analysis of fifth theme

Image 15 – Graphic for Common Words and Implications

Stylistic Elements in Speeches

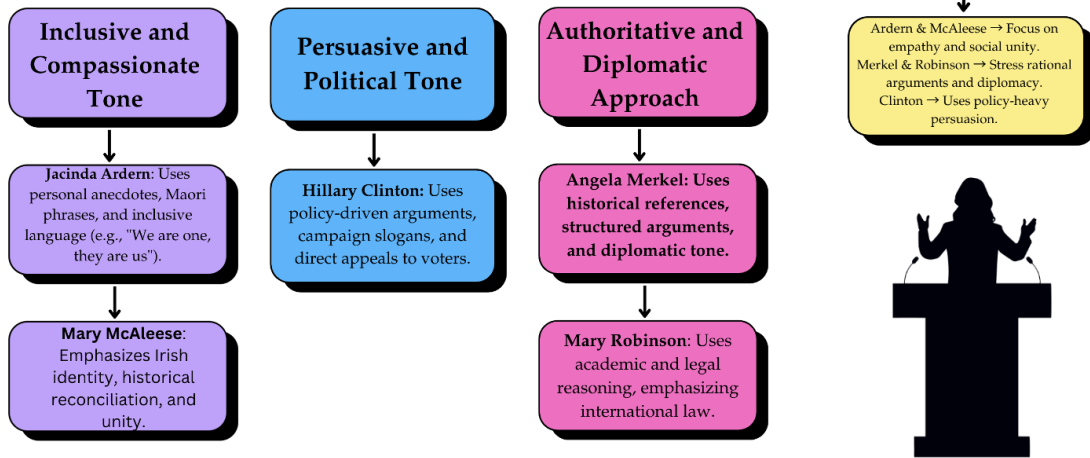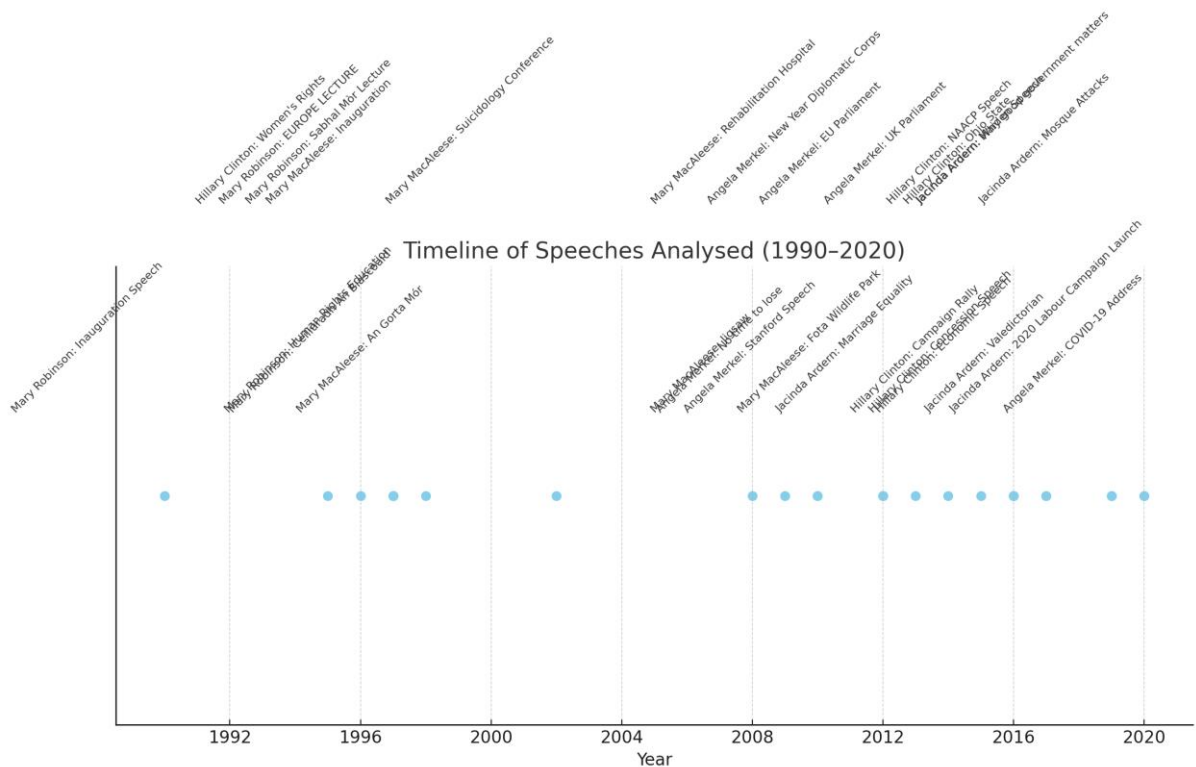Beyond themes and words, these leaders use distinct rhetorical styles.

Inclusive and Compassionate Tone

Jacinda Ardern: Uses personal anecdotes, Maori phrases, and inclusive language (e.g., "We are one, they are us").

Mary McAleese: Emphasizes Irish identity, historical reconciliation, and unity.

Persuasive and Political Tone

Hillary Clinton: Uses policy-driven arguments, campaign slogans, and direct appeals to voters.

Authoritative and Diplomatic Approach

Angela Merkel: Uses historical references, structured arguments, and diplomatic tone.

Mary Robinson: Uses academic and legal reasoning, emphasizing international law.

Key Differences

Ardern & McAleese → Focus on empathy and social unity.
Merkel & Robinson → Stress rational arguments and diplomacy.
Clinton → Uses policy-heavy persuasion.

Image 16 – Graphic for Stylistic Elements

Image 17 – Timeline of Speeches

Leader	Dominant Themes	Rhetorical Style

Mary Robinson	Human Rights, Justice	Universalist, moral framing
Hillary Clinton	Rights, Family, Policy	Legalistic + personal
Angela Merkel	Governance, Stability	Technocratic, restrained
Jacinda Ardern	Empathy, Community, Crisis	Warm, collective, ethical
Mary McAleese	Reconciliation, Identity	Emotive, reflective

Table 2 - Leaders, Themes and Rhetorical Style

References (Harvard Style)

- Acker, J., 1990. *Hierarchies, jobs, bodies: A theory of gendered organizations*. Gender & Society, 4(2), pp.139–158.
- Arustamyan, M., 2017. *Talk like a man, walk like a woman: An advanced political communication framework for female politicians*. The Journal of Legislative Studies, 23(3), pp.360–377.
- Baskaran, T. and Hessami, Z., 2018. *Does the election of a female leader clear the way for more women in politics?* American Economic Journal: Economic Policy, 10(3), pp.95–121.
- Beltran, J., Gallego, A. and Huidobro, A., 2020. *Male and female politicians on Twitter: A machine learning approach*. European Journal of Political Research, 60(2), pp.239–251.
- Buckley, F., 2013. *Women and politics in Ireland: The road to sex quotas*. Irish Political Studies, 28(3), pp.341–359.
- Carson, A., Ruppanner, L. and Lewis, J.M., 2019. *Gender bias in media coverage of female politicians: A comparative analysis*. Australian Journal of Political Science, 54(4), pp.465–482.
- Clots-Figueras, I., 2011. *Women in politics: Evidence from Indian states*. Journal of Public Economics, 95(7–8), pp.664–690.
- Crenshaw, K., 1989. *Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory, and antiracist politics*. University of Chicago Legal Forum, 1989(1), pp.139–167.
- Dollar, D., Fisman, R. and Gatti, R., 2001. *Are women really the "fairer" sex? Corruption and women in government*. Journal of Economic Behavior & Organization, 46(4), pp.423–429.
- Eagly, A.H. and Karau, S.J., 2002. *Role congruity theory of prejudice toward female leaders*. Psychological Review, 109(3), pp.573–598.
- Greene, D. and Cross, J.P., 2022. *Exploring the political agenda of the European Parliament using a dynamic topic modelling approach*. Political Analysis.
- Huddy, L. and Terkildsen, N., 1993. *Gender stereotypes and the perception of male and female candidates*. American Journal of Political Science, 37(1), pp.119–147.
- Krook, M.L., 2010. *Quotas for women in politics: Gender and candidate selection reform worldwide*. Oxford: Oxford University Press.
- Ladam, C., Harden, J.J. and Windett, J.H., 2018. *Prominent role models: High-profile female politicians and the emergence of women as candidates for public office*. American Journal of Political Science, 62(2), pp.369–381.
- Losh, E., 2012. *Channelling Obama: YouTube, Flickr, and the social media president*. Comparative American Studies, 10(2–3), pp.255–268.

♦ Mackay, F., 2004. *Gender and political representation in the UK: The state of the discipline*. British Journal of Politics and International Relations, 6(1), pp.99–120.

♦ Mimno, D., 2022. *Topic models as tools, not truth: Encouraging human-centered interpretation*. Unpublished lecture/presentation.

♦ Moretti, F., 2013. *Distant Reading*. London: Verso.

♦ Okimoto, T.G. and Brescoll, V.L., 2010. *The price of power: Power-seeking and backlash against female politicians*. Journal of Applied Psychology, 95(2), pp.425–436.

♦ Phillips, A., 1995. *The politics of presence*. Oxford: Clarendon Press.

♦ Rhody, L.M., 2012. *"Some Assembly Required": Understanding and interpreting topics in LDA models of figurative language*. Journal of Digital Humanities, 2(1), pp.8–11.

♦ Rosenwasser, S.M., Rogers, R.R., Fling, S., Silvers-Pickens, K. and Butemeyer, J., 1987. *Attitudes toward women and men in politics: Perceived male and female candidate competencies*. Political Psychology, 8(2), pp.191–200.

♦ Rudman, L.A. and Glick, P., 2001. *Prescriptive gender stereotypes and backlash toward agentic women*. Journal of Social Issues, 57(4), pp.743–762.

♦ Schneider, M.C. and Bos, A.L., 2013. *Measuring stereotypes of female politicians*. Political Psychology, 35(2), pp.245–267.

♦ Smith, E.S., 2005. *If Bill Clinton were a woman: The effectiveness of male and female politicians' account strategies following alleged transgressions*. Political Psychology, 26(1), pp.115–142.

♦ Steele, C.M. and Aronson, J., 1995. *Stereotype threat and the intellectual test performance of African Americans*. Journal of Personality and Social Psychology, 69(5), pp.797–811.

♦ Templeton, C., 2011. *Topic Modeling in the Humanities: An Overview*. MITH News, 1 August. Available at: https://mith.umd.edu/news/topic-modeling-in-the-humanities-an-overview/ [Accessed 14 Apr. 2025].

♦ Tunney, S., 2023. *Women, Discourse, and Power: A Corpus-Based Study of Female Political Speech in the UK and Ireland. Unpublished PhD Thesis*.

♦ Underwood, T., 2012. *Topic Modeling Made Just Simple Enough*. The Stone and the Shell (blog), 7 April. Available at: https://tedunderwood.com/2012/04/07/topic-modeling-made-just-simple-enough/ [Accessed 14 Apr. 2025].

♦ Weingart, S., 2012. *Topic Modeling for Humanists: A Guided Tour*. the scottbot irregular (blog), 25 July. Available at: http://www.scottbot.net/HIAL/?p=19113 [Accessed 14 Apr. 2025].