

The Legalisation of Abortion in Ireland

A Linguistic Analysis based on the Speeches of
the Oireachtas between 1980 and 2018

██████ UE Doing Research with Text Corpora (2024S)

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1. Introductory Chapter

The legal status of abortions has been a subject of ongoing debate. The current law, enacted in 1971 by the SPÖ, states an extended indication solution, meaning the possibility to an abortion under certain circumstances without the woman being prosecuted. This allows for the termination of pregnancy within the first three months, provided that the woman undergoes counseling beforehand. This legislation is referred to as the "Fristenlösung" (term solution) (Stadt Wien, 2024) under § 97 Abs. 1 StGB. (Pro Choice Austria, 2024)

In recent years, the debate over potential reforms to abortion legislation has been rekindled, particularly with regard to mandatory waiting periods, extending the legal timeframe, and enhancing access to information and services.

The Republic of Ireland has legalized abortion in 2019, following several referenda and a long period of public discourse about the subject. Ireland stands as one of the first countries to legalize the termination of pregnancy and not just make it unpunished under certain circumstances, but still illegal, as it is the case in Austria for example. This makes Ireland a pioneer in establishing firm women's reproductive rights.

Hence, our research question is whether there are significant differences between parties, years as well as gender regarding the linguistic complexity and the sentiment of the speeches within the Oireachtas debating the different referenda on the legalization of abortion which happened in 2019. A machine-readable corpus will be built consisting of these speeches.

To do this, an analysis of linguistic complexity as well as a sentiment analysis, both using computational methods, will be conducted, as this makes the working with extensive amounts of textual data possible. As Vossen (Vossen, 2014) notes, "we also know that there are vast amounts of implications that humans can draw from even the smallest piece of text, but computers cannot do this." (ibid., p. 23). This is why a close reading of a few selected speeches will be done to supplement the quantitative approach.

Similar studies have been done e.g. by Haselmayer et al. (2022), where machine learning methods were used to measure negativity in Austrian parliamentary speeches and detect gender differences. This study showed that female MPS positively influence the tone of parliamentary debates (ibid., p. 882).

2. Historical Context

To fully understand what led to the legalization, it is crucial to look at the debates held in the Irish Oireachtas regarding the different referenda. In 1983, the first referenda within this scope was held, acknowledging the "equal right to life of the mother" - Article 40.3.3 (Irish Statute Book, 2024) - stating that the life of the mother is equal to the life of the unborn child. In 2013, President Michael D. Higgins establishes the Protection of Life During Pregnancy Act which aims to "provide lawful access to abortion where a pregnant woman's life is at risk" (Irish Family Planning Association, 2024). Then, in 2018, the final referendum is held to repeal the Eighth Amendment of the Constitution (Article 40.3.3) and "allow for the Oireachtas to legislate on abortion. In September, the Eighth Amendment is removed from the Constitution and a new Article 40.3.3 is put into place. Then, finally, in December 2018, President Michael D Higgins signs the Health (Regulation of Termination of Pregnancy) Act 2018 into law which makes abortion lawful under certain circumstances, such as a three day waiting period.

3.Data & Preprocessing

The dataset used for this project is based on the “Database of Parliamentary Speeches in Ireland, 1919-1913” by Herzog and Mikhaylov (2017), which was accessed via the Harvard Dataverse website. This database contains all parliamentary speeches from the Dáil Éirann, the lower house of the Irish parliament, as well as additional information such as the date of the speech and debate it was held in, name and party affiliation of the speaker, etc.

This dataset was processed and filtered to include only speeches held in debates around relevant referenda concerning abortion by Jens Wäckerle, a postdoctoral researcher at Universität zu Köln, who provided the dataset to Sophie Hamann for a research project in 2019¹.

This modified dataset was further expanded and adjusted for this project. Specifically, missing speeches from 2014 to 2018 (in this case, all relevant speeches from this timeframe were given in the year 2018) were taken from the official Oireachtas website and added to the dataset manually, as well as the corresponding information like date, speaker, etc. Furthermore, a “gender” column was added to the dataset based on whether a speaker was referred to as “Mr.” or “Ms.” in the original dataset by Herzog/Mikhaylov. In cases where a title like “Dr.” was used, the column was filled based on information about the speaker’s gender found in various internet sources. (Houses of the Oireachtas, 2024)

The result was a corpus in the form of .csv-file with the following columns:

Rows	title	date	member_gender	member_name	party_name	speech	speechID
1615	1643 Written Answers. – Protocol Relating to Eighth Amend...	1993-03-23	M	Mr. Dick Spring	Labour Party	Protocol No. 17 annexed to the Treaty on European U...	2645942
2097	2161 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	F	Ms. Frances Fitzgerald	Fine Gael	Is the Minister afraid the facts will come out about th...	3252524
2100	2164 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	F	Ms. Frances Fitzgerald	Fine Gael	That is the Government approach to this Bill.	3252527
2119	2186 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	F	Ms. Frances Fitzgerald	Fine Gael	Why does the Minister not put the question—	3252549
2082	2141 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Séamus Pattison	Labour Party	Does the Minister oppose the motion?	3252504
2083	2142 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Michael Noonan	Fine Gael	May I speak?	3252505
2084	2143 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Séamus Pattison	Labour Party	No. Only the Member moving the motion may speak.	3252506
2085	2144 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Micheál Martin	Fianna Fáil	In terms of the arrangements, I do not believe I am all...	3252507
2086	2145 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Brendan Howlin	Labour Party	Why?	3252508
2087	2146 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Micheál Martin	Fianna Fáil	On the grounds that we have given more time, both i...	3252509
2088	2147 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Michael Noonan	Fine Gael	What has that got to do with it?	3252510
2089	2149 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Emmet Stagg	Labour Party	What is the hurry?	3252512
2090	2151 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Séamus Pattison	Labour Party	The Deputy has moved a motion and spoken. The qu...	3252514
2091	2153 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Séamus Pattison	Labour Party	The Deputy moved the motion and said a few words o...	3252516
2092	2155 Twenty-fifth Amendment of the Constitution (Protecti...	2001-12-04	M	Mr. Séamus Pattison	Labour Party	It is most unusual. I will allow the Deputy a few minut...	3252518

Figure 1

Five of the political parties present in the dataset were selected for analysis: Fianna Fáil, Fine Gael, Labour Party, Sinn Féin and The Workers’ Party. All of these parties, with the exception of the latter, held seats in the Dáil for all the years included in the dataset. The Workers’ Party was only present in the dataset from 1981 to 2001. However, The Workers’ Party has a relatively high amount of speeches and tokens in our dataset, indicating a large contribution to and shaping of the discourse around abortion in the Irish parliament, which is why it was included in this analysis.

Fianna Fáil generally is known to lean towards a pro-life stance, with “a majority of TDs and senators” opposing the repeal of the Eighth Amendment in 2018 (Sheahan, 2024). While Fine Gael used to be “ambivalent” towards abortion, the party campaigned to repeal the Eighth Amendment. (Heinrich Böll Stiftung, n.d.). While Sinn Féin used to not be “in favour of abortion” (Sinn Féin, 2007), they also voted for the repeal of the 2018 amendment

¹ This dataset was provided to Sophie Hamann privately. If wished, the dataset can be provided.

(McCormack, 2018). Both the Labour Party and the Workers' Party openly demand legislation that ensures access to safe and legal abortions (e.g. Hoey, 2024) (The Workers' Party, n.d.).

Some of the parties in the dataset went through name changes or divisions. The Workers' Party was formed after a split from Sinn Féin in 1970 and named "Sinn Féin – The Workers' Party" until 1982 (Ó Duibhir 2021). To account for this, all entries in the dataset using the former name were renamed. Similarly, the Labour Party is present in the dataset as both "Labour Party" and "The Labour Party". This was unified so only all entries are under "Labour Party". Finally, Peadar Tóibín was present in the dataset under his party Aontú. However, during the time period the dataset covers, he was still part of Sinn Féin (Lehane 2019), which is why the party name in the dataset was changed to reflect this.

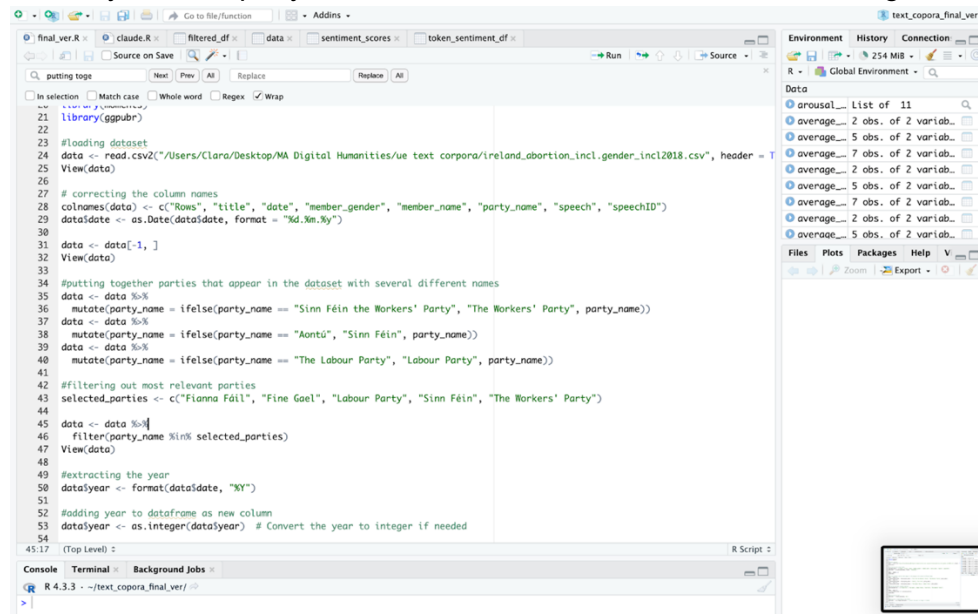


Figure 2

After this, the dataset was reduced to only the five parties mentioned above:

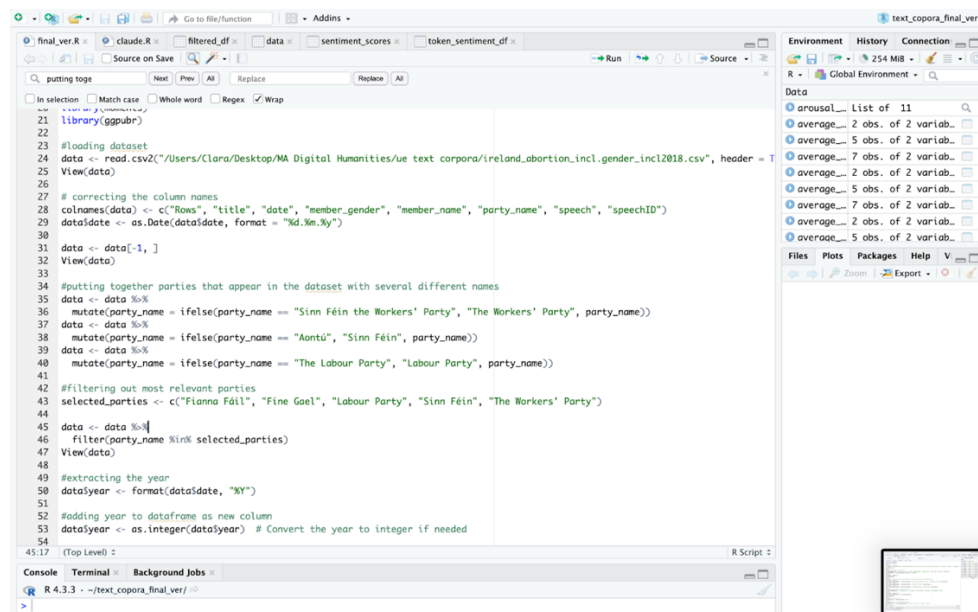


Figure 3

For the Linguistic Complexity Analysis, a corpus for each party was created to calculate the readability metrics Flesch Kincaid, Flesch and Dale-Chall.

For the Type-Token and the Lemma-Token Ratio as well as the Hapax Percentage, two same sized samples of male and female speeches were created to represent the ratio without distortions.

For the sentiment analysis, the text of the speeches was preprocessed by lowercasing, removing punctuation as well as stopwords.

4. Method

1. Close Reading

We have chosen to do a close reading of one to two speeches from each of the 5 selected parties from 2018, which is also the main referendum that led to the legalization of abortion in 2019.

It is important to note that The Workers' Party no longer existed in 2018, but this party is still important because it contains many speeches that, if deleted, would distort the dataset. We have therefore chosen a speech by a member of the Worker's Party from 1983. There was also an important referendum that year, which makes this speech comparable to the other party speeches.

The Summaries of the speeches can be found in the Appendix. The aim of the close reading was to get more in-depth information on the text-type we are dealing with within this research project.

2. Distribution of Male and Female Speakers

Before starting with the main part of the analysis on Linguistic Complexity and Sentiment, we decided to create a quick overview on the distribution of male and female speakers over the years. The reason for this was the general topic of this paper, as the legalization of abortion is highly controversial and an integral part of the woman's body and reproductive rights.

For this, the dataset was grouped by year as well as gender and visualized using ggplot.

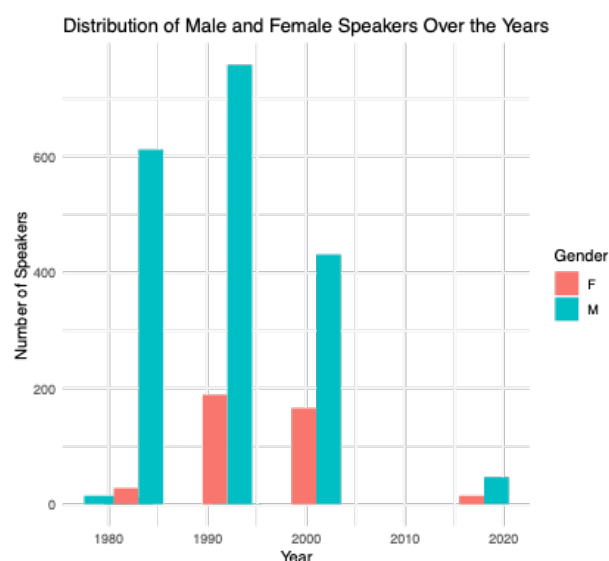


Figure 4

Looking at the different years of the speeches in the dataset (1980, 1982, 1983, 1992, 2001 and 2018) it is obvious that the majority of the speeches on abortion were held between 1980 and 2001. Here, more than half of the speakers were male, showing a rather high unequal distribution of male and female speakers. Bearing this in mind, the next paragraphs will analyze linguistic complexity as well as sentiment.

3. Linguistic Complexity and Lexical Richness

The `textstat_readability` function was used to calculate the readability metrics Flesch-Kincaid, Flesch and Dale-Chall.

In the first step, the empty list “readability_metrics” was created to store the calculated readability scores for each party. In the next step, the code iterates through the names of the political parties in the `party_corpus_list` using the `lapply` function. Then, for each party's corpus, the `textstat_readability` function is applied to calculate Flesch-Kincaid, Flesch and Dale-Chall scores. To store the calculated readability metrics, a data frame is created which includes the party name and the average values of the three scores.

After this, the data frame containing the readability metrics is appended to the `readability_metrics` list named above. The final `readability_metrics` list contains a data frame for each party, providing a comprehensive comparison of their readability scores.

Additionally, to have a structured overview of these values, bar plots were created for each single metric. For this, `ggplot` was used to visualize the results.

The values as well as the plots are being shown in the results section of this paper.

To calculate the Type-Token-Ratio, the Lemma-Token-Ratio as well as the Hapax-percentage for Lexical Richness, the data set was tokenized and balanced samples across parties, years and genders were created. The balanced data was then converted into a `quanteda` corpus object which was splitted into male and female subsets.

Each gender corpus was lemmatised and POS-tagged using `SpaCy` - punctuation, numbers and symbols were removed. After this, TTR, LTR and the Hapax percentage were calculated. The first one as well as the second one calculate the ratio of unique words or unique lemmas to the total words. The Hapax Percentage computes the percentage of words that only appear once.

4. Sentiment Analysis

For the sentiment analysis, two different sentiment lexica were used: The lexicon created by Warriner et al. (2013), which covers 13,915 English lemmas, and the NRC-VAD lexicon created by Mohammad/Turney and released in 2011, which covers around 20,000 lemmas (Mohammad, 2018). The effects of the difference in lexicon size will be discussed in the results section.

Both lexica are in the same format: an alphabetical list of English lemmas with corresponding scores for valence, arousal and dominance. Warriner et al. describe valence as “the pleasantness of the stimulus”, arousal as “the intensity of the emotion provoked by the stimulus” and dominance as “the degree of control exerted by a stimulus” (Warriner et al., 2023, p. 1191).

In order to obtain sentiment scores for our parliamentary speeches, the lexica were first loaded into RStudio as .txt files. Between the two different lexica, only minor changes were made in

the code, like changing the header settings and correcting column names. Other than that, the same code was used for both lexica.

After loading the sentiment lexica into R, a function was created to apply the corresponding scores of the lexica to each individual token of the pre-processed text. This was done with the help of ChatGPT. This function was then applied to the tokens and the resulting scores were appended to the original dataframe.

```

90- }}, sentiment_scores$Word)
91
92 #chatgpt:
93 # Initialize an empty data frame to store token-level sentiment scores and metadata
94 token_sentiment_df <- data.frame(Token = character(), Valence = numeric(), Arousal = numeric(), Dominance = numeric(),
95 Member = character(), Title = character(), Date = character(),
96 member_gender = character(), party_name = character(), year = character(),
97 stringsAsFactors = FALSE)
98
99 # Function to calculate sentiment scores for each token in a speech
100 calculate_sentiment_scores <- function(tokens, member, title, date, member_gender, party_name, year) {
101 token_scores <- data.frame(Token = character(), Valence = numeric(), Arousal = numeric(), Dominance = numeric(),
102 Member = character(), Title = character(), Date = character(),
103 member_gender = character(), party_name = character(), year = character(),
104 stringsAsFactors = FALSE)
105
106 for (token in tokens) {
107 if (!is.null(sentiment_dict[[token]])) {
108 valence <- as.numeric(sentiment_dict[[token]]["Valence"])
109 arousal <- as.numeric(sentiment_dict[[token]]["Arousal"])
110 dominance <- as.numeric(sentiment_dict[[token]]["Dominance"])
111 token_scores <- rbind(token_scores, data.frame(Token = token, Valence = valence, Arousal = arousal, Dominance = dominance,
112 Member = member, Title = title, Date = date,
113 member_gender = member_gender, party_name = party_name, year = year,
114 stringsAsFactors = FALSE))
115 } else {
116 token_scores <- rbind(token_scores, data.frame(Token = token, Valence = NA, Arousal = NA, Dominance = NA,
117 Member = member, Title = title, Date = date,
118 member_gender = member_gender, party_name = party_name, year = year,
119 stringsAsFactors = FALSE))
120 }
121 }
122 return(token_scores)
123 }
124
125 # Apply the function to each set of tokens
126 for (i in 1:nrow(tokens)) {
127 token_scores <- calculate_sentiment_scores(tokens[i,], member[i,], title[i,], date[i,], member_gender[i,], party_name[i,], year[i,])
128 token_sentiment_df <- rbind(token_sentiment_df, token_scores)
129 }
130
131 # Save the final dataframe
132 write.csv(token_sentiment_df, "token_sentiment_df.csv", as.is = TRUE)
133 }

```

Figure 5

This was done for both lexica, resulting in two dataframes containing the corresponding sentiment scores. Not all words were covered by the sentiment lexica, resulting in a number of N/A values: 101,919 for the lexicon by Warriner et al., 81,912 for the VAD lexicon.

The scores were then used to calculate the average arousal, dominance and valence for the gender variable, and finally t-tests to find out whether differences between both genders are statistically significant:

```

163 summarize(Dominance = mean(Dominance, na.rm = TRUE))
164 print(average_dominance_by_gender)
165
166 average_valence_by_gender <- token_sentiment_df %>%
167 group_by(member_gender) %>%
168 summarize(Valence = mean(Valence, na.rm = TRUE))
169 print(average_valence_by_gender)
170
171 average_arousal_by_gender <- token_sentiment_df %>%
172 group_by(member_gender) %>%
173 summarize(Arousal = mean(Arousal, na.rm = TRUE))
174 print(average_arousal_by_gender)
175
176 female_measures <- token_sentiment_df[which(token_sentiment_df$member_gender == "F"),]
177 male_measures <- token_sentiment_df[which(token_sentiment_df$member_gender == "M"),]
178 t.test(female_measures$Valence, male_measures$Valence)
179 t.test(female_measures$Arousal, male_measures$Arousal)
180 t.test(female_measures$Dominance, male_measures$Dominance)
181
182 ggplot(token_sentiment_df %>%
183 pivot_longer(cols = c(Dominance, Valence, Arousal), names_to = "Measure", values_to = "Value"),
184 aes(x = member_gender, y = Value, fill = member_gender)) +
185 geom_boxplot() +
186 facet_wrap(~ Measure, scales = "free_y") +
187 scale_fill_manual(values = c("F" = "#F08080", "M" = "#4682B4")) +
188 ggtitle("Comparison of Sentiment by Gender (NRC lexicon)" + #for lexicon by warriner et al.
189 xlab("Gender") +
190 ylab("Value") +
191 theme_minimal())
192
193 #party differences
194
195 #averages
196 average_dominance_by_party <- token_sentiment_df %>%
197 group_by(party_name) %>%
198 summarize(Dominance = mean(Dominance, na.rm = TRUE))
199 print(average_dominance_by_party)

```

Figure 6

A similar approach was used for the party variable, where Fianna Fáil was used as a reference category. In addition to t-tests, the data was transformed and used to carry out ANOVA analyses for each sentiment measure with both gender and party as predictors. ANOVA (“analysis of variance”) is used to “investigate the differences between any number of groups, which can be specified by one or more categorical variables” (Levshina 2015, p. 171).

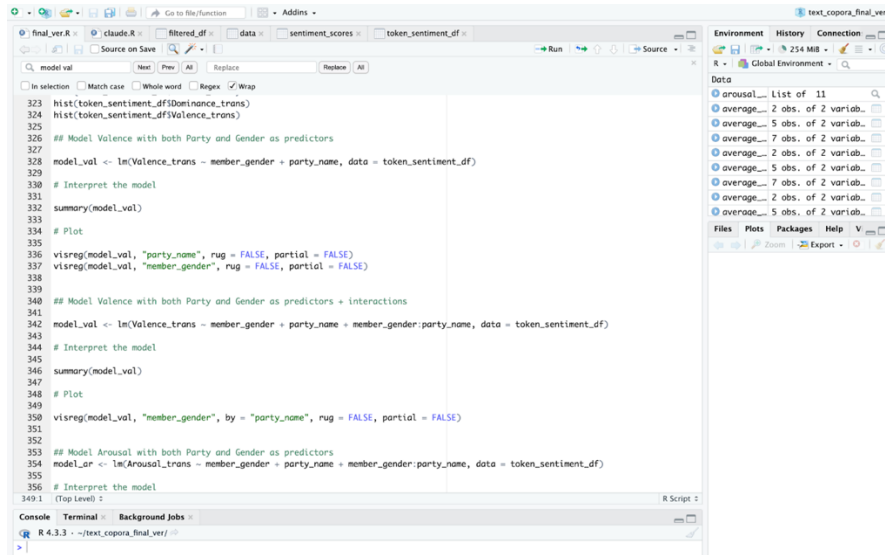


Figure 7

In order to analyze the change in valence over time, the mean values of each measure were calculated for each year and plotted as a graph.

5. Results

1. Linguistic Complexity

a. Readability Metrics

	Party	Flesch Kincaid	Flesch	Dale-Chall
1	Fianna Fáil	8.668490	62.35273	7.623350
2	Fine Gael	7.579908	65.50020	7.235081
3	Labour Party	7.976040	61.16244	7.445626
4	Sinn Féin	9.769512	58.34678	8.540138
5	The Workers' Party	7.941632	63.25489	7.846121

Table 1

Looking at the Flesch-Kincaid metric first, as seen in Table 1 as well as in Figure 8, the party Sinn Féin has the highest score (9.77) and Fine Gael the lowest one with 7.58. The former indicates a more complex language which requires more years of education to understand. These metrics are underlined by the Flesch Reading ease. Here, Fine Gael has the highest score (65.6), indicating an easier readability, and the Sinn Féin Flesch metric is suggesting more difficult text (58.35). Fiánna Fail, The Labour Party and The Workers’ Party are in the middle range. Additionally, Sinn Féin also has the highest Dale-Chall Score (8.54), showing more complex vocabulary than Fine Gael which has the lowest score with 7.24, indicating simpler vocabulary.

These values are further visualized below:

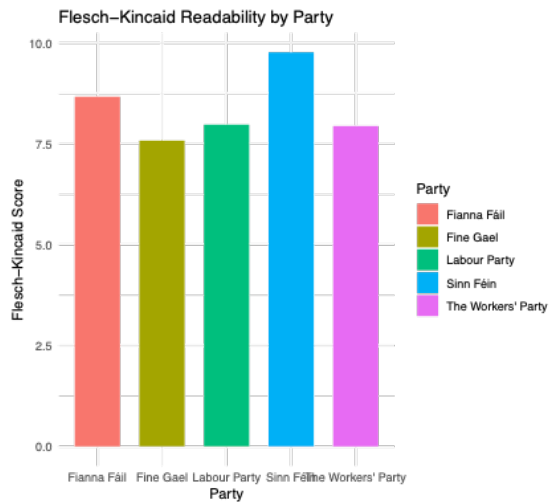


Figure 8

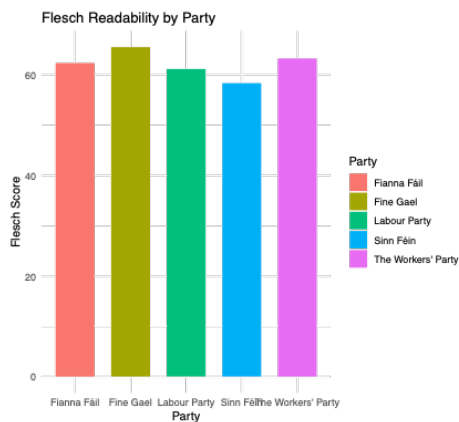


Figure 9

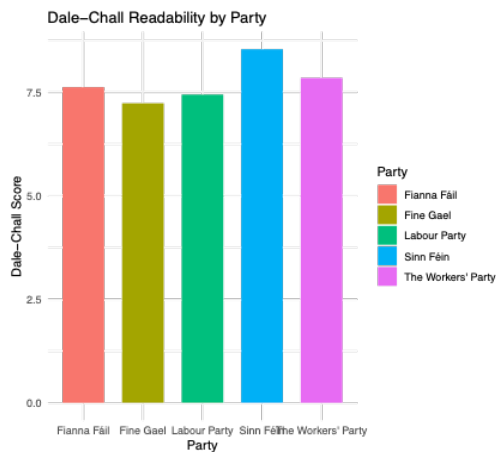


Figure 10

b. Lexical Diversity Metrics

These calculated metrics also show a uniform picture.

The female corpus has a higher Type-Token-Ratio (0.0761) as well as a higher Lemma-Token-Ratio (0.0583) than the TTR and the LTR of the male corpus (0.0454 and 0.0338). Hence, this suggests a greater lexical diversity as well as a greater lemma variety in the female speeches.

Additionally, the female corpus has a higher hapax percentage as well (43.2%) compared to the male corpus (39.5%) which suggests a higher proportion of unique words in female speeches.

2. Sentiment Analysis

The sentiment analysis was done under the following assumptions: female members of parliament show a higher level of dominance and/or arousal, since this is something that generally affects them and their rights; parties that lean pro-life speak with a lower valence, so more negatively than parties that lean pro-choice; the valence overall has gone up over time, since there's been somewhat of a shift in society towards a more pro-choice attitude and

this is likely also reflected in these speeches. These hypotheses will be discussed in the following sections.

a. Sentiment measured by gender

Firstly, the sentiment scores for both genders were calculated and compared based on the sentiment lexicon by Warriner et al. Out of our three measures, only arousal turned out to be statistically significant with a p-value of 7.331e-12. The mean arousal for male speakers is 4.09, for female speakers it is 4.13. Both of these values are on the lower side, but female speakers generally seem to speak about abortion with a higher level of emotional arousal.

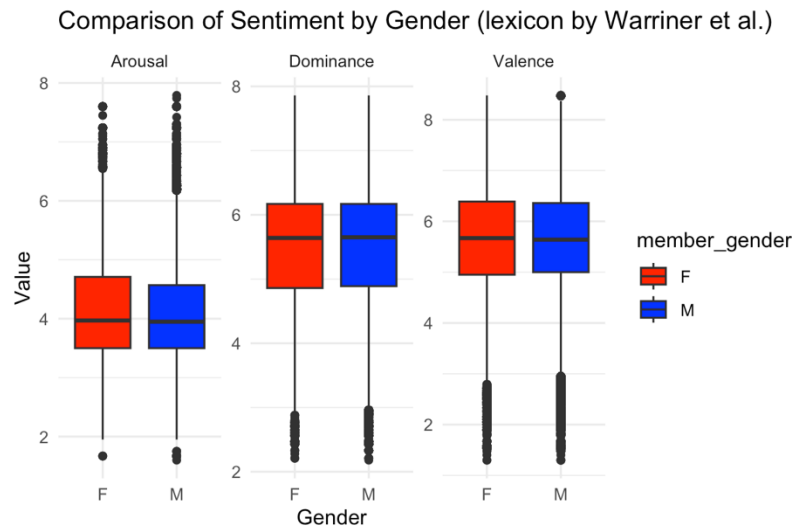


Figure 11

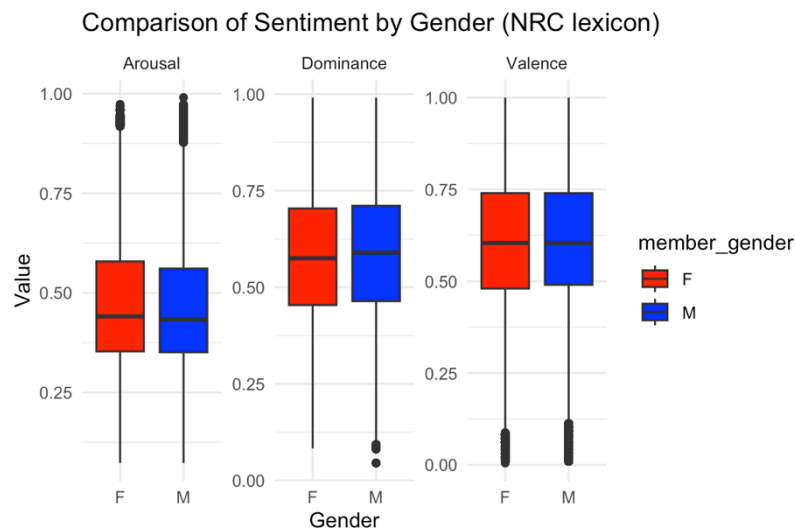


Figure 12

The same analysis was done for the NRC lexicon. In this case, all three measures – valence, arousal, and dominance – were statistically significant (p-values of 1.798e-07, < 2.2e-16, and < 2.2e-16, respectively). Female members of parliament showed a lower level of dominance and valence and a higher level of arousal, which confirms our hypothesis.

b. Sentiment measures by political party

Out of all the parties present in the dataset, Fianna Fáil, Sinn Féin, Fine Gael, the Labour Party, and the Worker's Party were chosen for a closer analysis. Out of these, Fianna Fáil leans most towards a pro-life stance, which is why this party will be compared against the others.

Using the lexicon by Warriner et al., the Labour Party showed a significantly lower level of arousal compared to Fianna Fáil. Sinn Féin showed a significantly higher arousal than Fianna Fáil. For both Fine Gael and the Workers' Party, all measures except arousal were statistically significant: valence as well as dominance were lower than in speeches by Fianna Fáil.

Using the NRC lexicon, all four parties show a significantly lower valence and dominance than Fianna Fáil. The difference in arousal is only statistically significant for Fine Gael, where it is lower than in Fianna Fáil, which is a stark difference to the results from before.

To get a picture of how variables interact in this dataset, an ANOVA analysis was done for each sentiment measure with both gender and party as predictors. Firstly, this analysis was done with the scores obtained using the lexicon by Warriner et al.

Using female members of Fianna Fáil as the reference level, significantly lower valence scores can be observed for Fine Gael, The Workers' Party. Interaction effects however are not significant.

For arousal, however, there is a significant interaction between gender and party for Sinn Féin, suggesting that the effect of being male on the level of arousal is larger for Sinn Féin than for Fianna Fáil, which is used as the reference category; in this case, being male causes the level of arousal to be much higher compared to Fianna Fáil. Sinn Féin also seems to be the only party where male members exhibit a higher level of arousal than female members (using the lexicon by Warriner et al.). For dominance, the only statistically significant finding is that female members of The Workers' Party have a lower dominance score than female members of Fianna Fáil; there are no significant interaction effects.

Using the NRC lexicon, the results for valence are similar: a lower level of valence for members of Fine Gael, Sinn Féin, and The Workers' Party, compared to Fianna Fáil, and no statistically significant interactions. For arousal, there is a significant interaction between gender and party for Fine Gael. The estimate is negative (-0.07), meaning that male speakers being part of Fine Gael results in a lower arousal score. Looking at the graphs above (lexicon by Warriner et al. on the left, NRC lexicon on the right), we can see that for Sinn Féin, whether male or female members have a higher arousal score, changes based on the lexicon used. This could be because Sinn Féin has the least amount of tokens out of our five parties which might lead to the data being skewed by the amount of tokens covered by the lexica more easily.



Figure 13



Figure 14

As for dominance, female members of Fine Gael have significantly higher, female members of The Workers' Party lower levels of arousal compared to female members of Fianna Fáil. As for interaction terms, both Fine Gael and Sinn Féin's interaction with gender is significant: The effect of the gender being male causes a significantly lower dominance score in these two parties.

A. Frequent Tokens

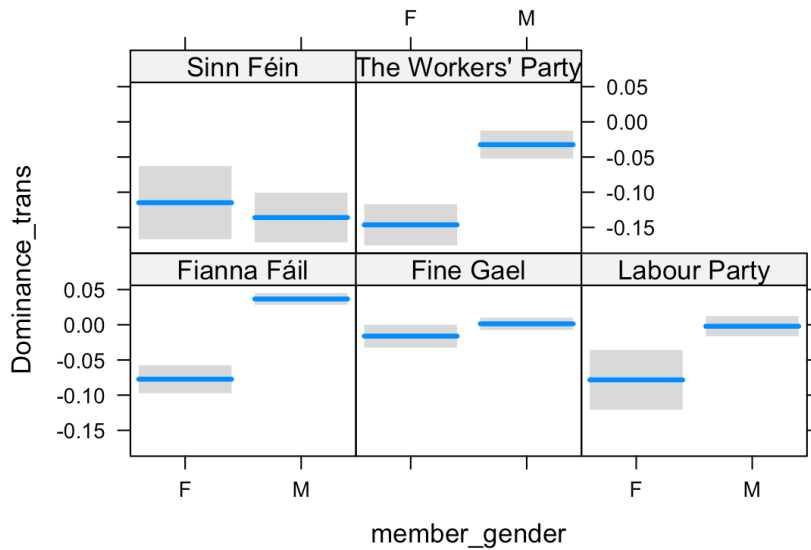


Figure 15

To get a closer look at how the different parties speak about abortion, the top 20 most frequently used tokens (excluding stopwords) were filtered out for each relevant party.

Fianna Fáil, a pro-life leaning party, frequently uses words like “life”, “people”, “right”, which are likely more positively connotated, therefore having a higher valence, and are more empowering, which could result in a higher level of dominance in speeches from this party. Outside of this, very neutral words concerning the legislative process, such as “amendment”, “deputy”, “government” and “legislation” are used.

Fine Gael and Sinn Féin overall use similar words, but use the word “woman”/“women” more frequently, which suggests they focus on the patients having abortions and being affected by abortion laws in their speeches. Sinn Féin, The Labour Party and The Workers’ Party include the word “health” in their most used tokens, suggesting a more healthcare-focused approach in their arguments.

This is only a surface level analysis, but it can possibly give some insight into the framing of abortion in each party’s speeches.

B. Sentiment measures by year

Both sentiment lexica show similar results when it comes to the change of sentiment throughout the years, with some notable differences (Warriner et al. on the left, NRC on the right): There is a large drop and then a steep increase in arousal right before the eighth amendment was passed in 1983, which suggests that speeches become more emotional right before the amendment was passed. A similar progression can be seen around 1992/1993, when the 12th Amendment was rejected and the 13th Amendment was passed. In this case, dominance also increases. This suggests that right before an amendment is voted on, members of parliament speak more authoritatively, likely in order to influence voting behavior. The drop in arousal here is interesting, but difficult to explain.

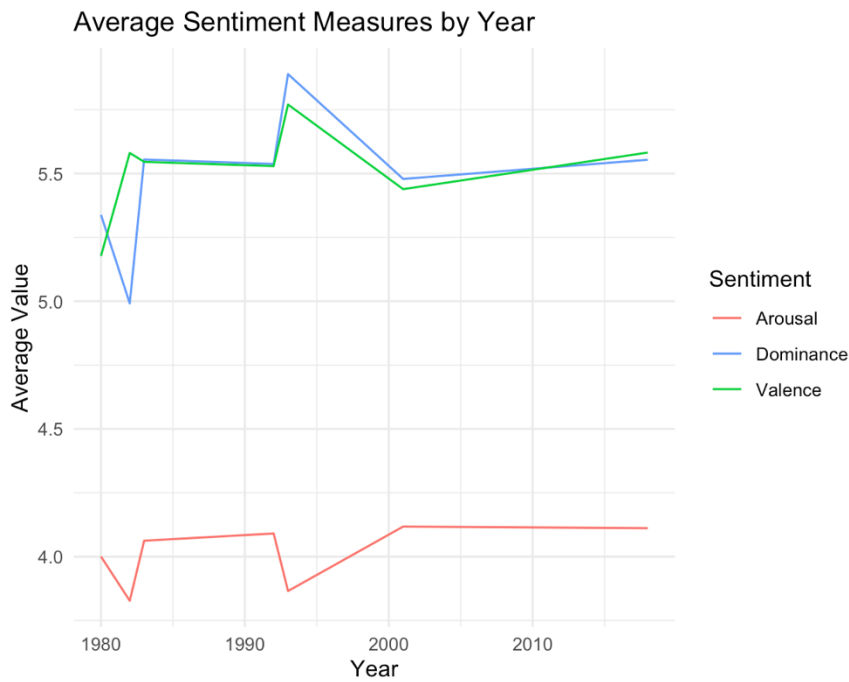


Figure 16

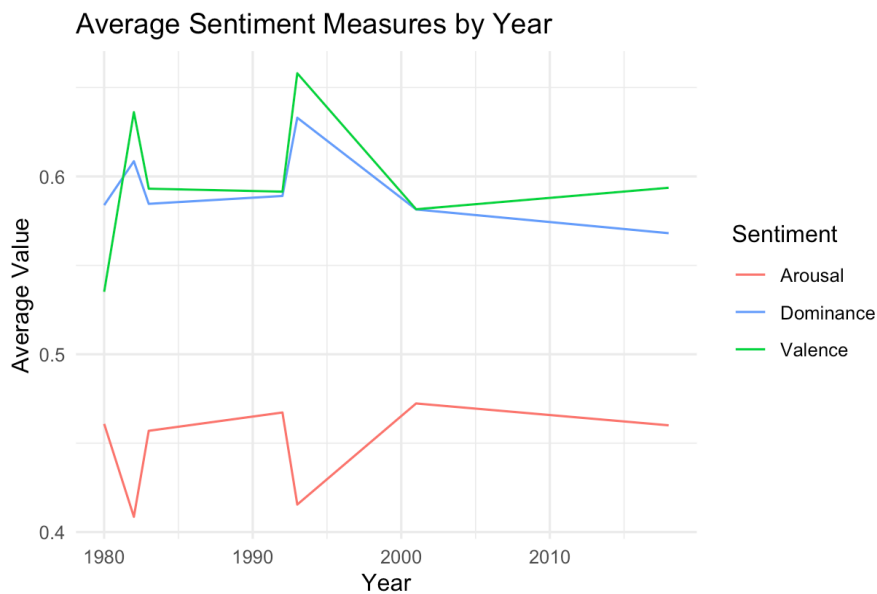


Figure 17

Dominance however decreases around 1983 when using the lexicon by Warriner et al., while it increases when using the NRC lexicon. This could be because both lexica score words quite differently when it comes to dominance, and/or because the NRC lexicon simply covers more relevant words.

Overall, the sentiment around speeches about abortion in the Irish parliament seems to have gone up over time. Arousal and dominance however show different progressions based on which sentiment lexicon is used, showing how strongly results are affected by this choice.

6. Conclusion

Overall, with regards to the linguistic complexity analysis, Sinn Féin consistently shows the most complex language use, while Fine Gael tends to use simpler, more accessible language across all metrics. Looking closer at these two parties in particular, one can see that Sinn Féin has notoriously advocated pro abortion and women's right to choose (The Guardian, 2024) while Fine Gael has "traditionally taken an ambivalent position on abortion" (Heinrich Böll Stiftung, 2024).

The analysis of lexical diversity for the male and female corpus has shown that the female corpus demonstrates higher lexical richness, indicating more diverse vocabulary usage compared to the male corpus.

The sentiment analysis showed that female members of parliament do in fact speak with a higher level of arousal than male members when talking about abortion, with Sinn Féin being the exception. Fianna Fáil, the only pro-life party in the corpus, generally seems to speak more positively and dominantly about abortion; some hints to why this is the case can be found when looking more closely at their speeches and frequently used tokens. Overall, the valence in speeches about abortion has increased overtime, suggesting a general shift towards a more pro-choice stance. Comparing the two different lexica used, the NRC lexicon which covers more tokens led to more statistically significant findings. While some of the results differed between the two, there are clear trends and tendencies visible for a number of variables. In any case, one should aim to cover as many words as possible in an analysis as to not miss important information.

The selected close readings offer some insight into how the results came to be. However, since every speaker is different, a larger amount of texts would be needed to really be representative of a party. Unfortunately, a close reading of this scale is outside of the scope of this project.

In conclusion, several significant differences between parties, years and gender can be found regarding linguistic complexity and sentiment of speeches within the Oireachtas.

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8. Appendix

1. Speeches by the Labour Party

Both speeches from the labor party focus heavily on women and the impact the lack of access to abortion has on their lives and physical health. Repealing the eighth amendment and legalizing abortion in the first twelve weeks of pregnancy is discussed in the context of empathy towards the patients in question – “there are cases and instances where the termination of a pregnancy is the compassionate [...] thing to do”, “I believe that we must now face the issue of abortion as an issue for us to settle for our people, on our soil, with compassion, understanding and empathy”, Howlin says, while Kelly argues, “what is being proposed is practical, humane, sensible and modern”. In this context, both speakers argue for the “12 week recommendation”, citing incest, rape and foetal abnormalities as justification for the termination of pregnancies. Discussing these very negatively connotated topics may lead to a lower valence score in the sentiment analysis, as well as the mentioning of illegal use of abortion pills. Overall, the wording in the speeches is quite diplomatic. If this is something reflected in many speeches of the Labour party, this could be reason for a lower dominance and arousal score. (Kelly, 20.03.2018) (Howlin, 20.03.2018)

2. Speeches by the Workers ´ Party

Giolla calls out the pro-life group, calling them fanatical and saying “In many cases they are the very people who support legal executions, nuclear weapons, joining NATO, whipping, lashing and hanging”, “the type of group who are fundamentally fascist in nature”. He also directly addresses Fianna Fáil, criticizing the amendment they brought forward and their wording of “unborn life”. Giolla goes into detail discussing the notion of the “equal” right to life between mother and unborn child as well as legal and medical implications of the amendment. The speech clearly reads as high in dominance and arousal, but it is unclear if a sentiment analysis can pick this up just by scoring individual words. The lower valence is likely easier to be detected and therefore reflected in sentiment scores. De Rossas speech shows similarities in that it also calls out Fianna Fáil and discusses healthcare, frequently using medical terminology. Both speeches suggest a more patient-/health-focused perspective on abortion laws by the Workers’ Party. It is likely that speeches like this generally score lower in valence due to more neutral words (medical terminology) and negatively connotated words (discussing traumatizing or life-threatening situations for pregnant women). (Mac Giolla, 27.04.1983) (De Rossa, 27.04.1983)

3. Speeches by Fianna Fáil

Mr. Billy Kelleher gave a powerful and emotional argument advocating for the repeal of the Eighth Amendment of the Irish Constitution, which severely restricts abortion access in Ireland.

The speech is progressive and strongly pro-choice, emphasizing the need for compassion, care, and the protection of women's rights.

The speech shows that the speaker cares about the rights of women in Ireland and he is emotional when talking about tragic cases and the pain women face under the current law. The tone is empathetic and aims to make people feel morally responsible and want to take action.

Additionally, Mr. Kelleher uses formal and informal language to appeal to legislators and the public. The speech uses specific legal and medical terms when discussing the constitutional amendment and proposed legislation which makes it seem authoritative and precise. He also uses personal and inclusive language to connect with the audience. This blend of technical and emotional language makes the speech more persuasive. (Kelleher, 09.03.2018)

4. Speeches by Fine Gael

The speech puts forward the idea that it would be beneficial to consider repealing the Eighth Amendment, with a view to providing Irish women with the healthcare and bodily autonomy they deserve. The speaker expresses a strong desire to rectify past injustices and envisions a future where women's rights are upheld and safeguarded. The tone is urgent, reflective, and critical of the historical and current opposition to reproductive rights. It portrays the fight for repeal as a matter of justice and equality, and calls for a re-evaluation of the current approach to reproductive rights. The speech also makes use of formal language and emotional appeals, particularly through the use of historical references and personal anecdotes.

Furthermore, the speech makes use of repetition for emphasis, particularly in the calls to "trust women" and "not go back to 1983." This serves to reinforce the speaker's message. Furthermore, the speech makes use of rhetorical devices such as parallelism and contrast to highlight the necessity for change. The speaker presents a compelling argument that balances factual arguments with emotional appeals, making it persuasive and impactful. (Harris, 09.03.2018)

5. Speeches by Sinn Féin

The speech conveys a sense of resolve and empathy, with the speaker expressing a profound dedication to reforming the current legislation, which they feel has caused considerable hardship for Irish women. By posing rhetorical questions such as "Do we trust women?", the speaker encourages the audience to reflect on their values and the implications of the current law. The speech also features a notable use of repetition and parallelism, particularly in its arguments about trust and compassion, which serves to reinforce its persuasive impact. (O'Reilly, 20.03.2018)