

# Women in Dutch Parliament: what they did

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## Abstract

The 20th century has shown a major shift for the role of women in the dutch parliament. All political proceedings from the dutch parliament from 1980 until 2012 have been stored in a semi-structured format in an XML database. With 98% of all speech acts annotated with a speaker id and stored in a hierarchy of topics, it was possible to count both the speech acts by female MPs and the topics in which there was at least one female MP. This was done over 19 different time intervals, grouped in four periods with special significance for women in politics: the periods of the Pioneers (1918-1948), the Tokens (1948-1977), the Defenders (1977-1994), and the Players (from 1994). Furthermore, we classified all topics along 13 subject areas. The period of the Pioneers was marked by only a few women MPs but with a high level of topic participation. During the period of the Tokens there was an inclination towards the 'softer' subject areas such as Education, Arts, and Sciences, and very little participation in the areas of Finance and Economy. The period of the Defenders shows an inclination of women MPs towards Health and Social affairs. Women participated in almost every debate. The period of the Players is when the percentage of women MPs reached a critical height of more than 30%. Their relative number of speech acts approached that of men. The number of debates without women went however up again.

## Introduction

The 20th century has been critically important for the role of women in politics, and has shown a major change in their participation. In her study of the political empowerment of women in the Netherlands [1], Leyenaar distinguishes four periods, briefly described as follows. First there is the period of the pioneers, the women who entered parliament between 1917-1946. In this period there was no consicuous activity to select women as MPs, and only unmarried, upper class and highly educated women were allowed by the party leadership. Secondly, there is the period of the tokens, the female MPs from 1946-1974. In this period parties selected at least one woman as a group representative. Women MPs were only expected to look after the interests of women as mother and home-maker. Thirdly, there is the period of the defenders of women's interests from 1975-1990. In this period the underrepresentation of women in parliament became a political issue, and is marked by a stark increase in women MPs. The

final period, from 1990, is the period of the players, where the number of women MPs had reached 35

Leyenaar analyzed, amongst other things, the change in percentage of women representation in the Dutch Parliament throughout these four periods. While the percentage of women MPs is an excellent metric to assess women representation in parliament, it does not convey information about how much these women were allowed to participate in the debates. For instance, in the token period, given the role these women were expected to fulfill, one would expect a much smaller contribution to the parliamentary debates compared with their male peers. This should reflect in the amount they spoke in parliament.

In this paper we analyze the contribution of women MPs to the parliamentary debates by counting the number of words they uttered, their number of speech acts, and the number of debate topics they participated in. We hypothesize that these three metrics will give a similar result, and expect that their values will show an increase over time, with a similar clustering pattern as was shown by Leijenaar for the four different periods. We hypothesize that our results will strengthen Leyenaar's conclusion with respect to the change in women participation in politics, not only by their percentage representation, but also by their activity in parliament.

Secondly, we analyze which topics women MPs speak about most. Topics are classified by the government member that speaks in it. The name of the department that the government member belongs to is used as a label for the topic of the discussion. This allows us to assign all debates with a government member to one in thirteen categories. We hypothesize that

## Methods

### Members of Parliament data

All data regarding the Dutch members of parliament were obtained from the Parlementair Documentatie Centrum [4]. In total 3573 records were obtained, including all members of parliament and government members from 1918 until the present time. For each of these members we collected, amongst other things, their name, membership data for the parliament (dates and party affiliation(s)) and whether they were male or female. Each speaker has a unique speaker-id. For government members we also collected membership dates and function titles.

### Proceedings data

The proceedings data was collected and processed for the PoliticalMashup project, which includes the proceedings from the Dutch States-General since its inception in 1814 right after the end of the Napoleonic era until the current date [5][6]. The data is made available in a richly annotated digital format as document-centric XML.

In short, the textual content (scanned and OCR'ed or taken from PDF) of each original proceedings document is structured as a hierarchy of topics, scenes, and speeches, thus making the implicit structure of the documents explicit. The proceedings of each meeting are divided in separate topics, usually the

items on the agenda. Each topic is divided in separate scenes for the main speakers, and each scene is divided in separate speeches for the main speaker, interruptions by others and comments of the chairperson. Older documents do not have the subdivision in scenes, and consist of one or more topics consisting of multiple speech acts. The chronological order of the original document is always maintained.

All spoken words are thus richly annotated with speaker name, party affiliation, role (MP, member of government, or chair), and date. All topics, scenes, and speeches are given a unique document id with reference to the original parliamentary proceedings. Speakers are identified with unique speaker ids, which resolve to a biographic description. The structure of the documents is specified in a RELAX NG schema, a schema language for XML (see [3] for more information).

Leijenaar recognized four distinctive periods since 1918 (see table 1), and divided each period in resp. 7, 8, 5, and 6 sessions. The sessions cover periods of time with roughly the same MPs, such that each session has a distinctive set of MPs. Sessions may cover multiple cabinet periods. A session starts on the day when the new members are sworn in, and ends the day before the next session. Note that session start and end dates do not coincide with cabinet formation and abolition dates. Because we are interested in the performance of the MPs, we count from the day that they are sworn in.

Table 1: Four Periods

Description	Dates	Cabinets
Pioneers	1918-09-17 to 1948-07-26	Ruijs de Beerenbrouck I - Beel I
Tokens	1948-07-27 to 1977-06-07	Drees-Van Schaik - Den Uyl
Defenders	1977-06-08 to 1994-05-16	Van Agt I - Lubbers III
Players	1994-05-17 to 2010-06-16	Kok I - Balkenende IV

## Metrics

We count the number of topics with at least one woman MP having a speech act, and the total number of speech acts by women MPs in a certain period of time. A speech act starts when a person starts to speak, and stops when that person finishes or is interrupted by someone else (including the chairman). Note that the number of words spoken during the speech act is not relevant here. A topic is defined as the complete debate on a specific item on the agenda as marked in the proceedings.

These numbers are then divided by the total number of topics and the total number of speech acts. This results in two percentages. The percentage of speech acts by women MP is further normalized by the percentage of women MPs at that time. A value of 1 would indicate that their performance was exactly the same as the male MPs, less than 1 would indicate a lesser performance, and a value higher than 1 a higher performance (note again that 'performance' is measured here purely as the number of speech acts; a verbal argument with an opponent with many back and forth yelling would increase performance).

## Subject Areas

Topics are classified by the government member that speaks in it. First a list was made of all distinct function titles of all government members from 1918 until 2011. This list of 141 titles was divided in 11 distinct subject areas (see table X). Most of this was straightforward (e.g. *minister van Justitie a.i.*, *minister van Justitie*, *staatssecretaris van Justitie*, *staatssecretaris van Veiligheid en Justitie*, and *minister van Veiligheid en Justitie* constitute the subject area *Justice*). Whenever a title would fit two subject areas (such as *minister van Sociale Zaken en Volksgezondheid* in both *Health* and *Social Affairs*), it was placed in both. This results in some topics being labeled with more than one subject area, but was unavoidable due to the ever changing department names. Double assignment may also occur when multiple government members speak in the same debate. Note that when in a certain time there was no government member specifically assigned to a certain subject area (such as with *International Development*), then topics on that area could not be classified as such.

Topics were analyzed as follows. First, a list of all topics within a given timeframe was made which had at least one speech act by a government member. Then, for each subject area:

1. Create a list of all government members belonging to that subject area within the given timeframe
2. Select all topics with at least one speech act by one of those government members in their role as such
3. Count all speech acts of MPs within those topics
4. Count all speech acts of women MPs within those topics, and calculate as a percentage.
5. Divide this percentage by the overall percentage of speech acts by women MPs of that timeframe

The resulting metric will have a value of 1 if women MPs had the same fraction of speech acts as would be expected from their overall performance. A value higher than 1 would indicate that the subject area attracted a relative high number of women MPs, a value lower than 1 would indicate a relative low number of women MPs participating in debates on the given subject area. We define this metric as the *topical inclination* of women MPs.

## Results

Of all 2156195 speech acts divided over 82996 topics in the Dutch proceedings data from 1918-09-17 until 2012-02-27 we were able to match 98.5% to a known person, all with known gender information and known role (MP, government member, or chairman).

### Overall performance

The percentage of speech acts by women MPs ('speech acts'), the percentage topics with at least one women MP participating in it ('topic participation'),

and the percentage women MPs in parliament ('women MPs') are all shown in figure 1.

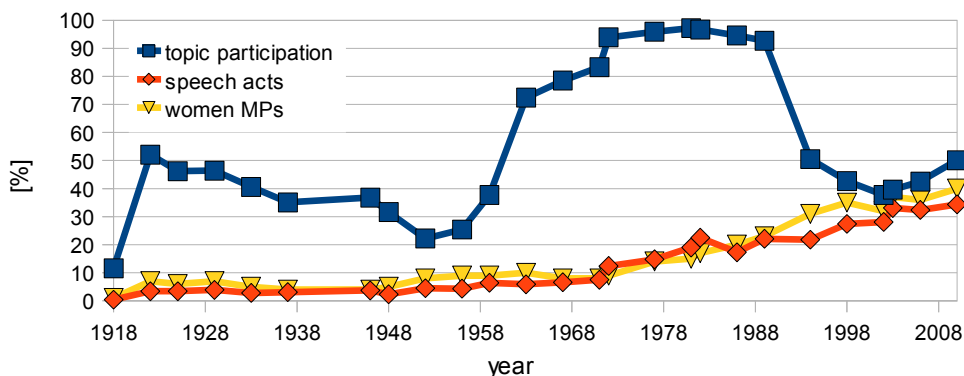


Figure 1: *The percentage of speech acts by women MPs ('speech acts'), the percentage topics with at least one women MP participating in it ('topic participation'), and the percentage women MPs in parliament ('women MPs')*

The percentage of speech acts by women MPs was further normalized by the percentage of women MPs, and shown in figure 2.

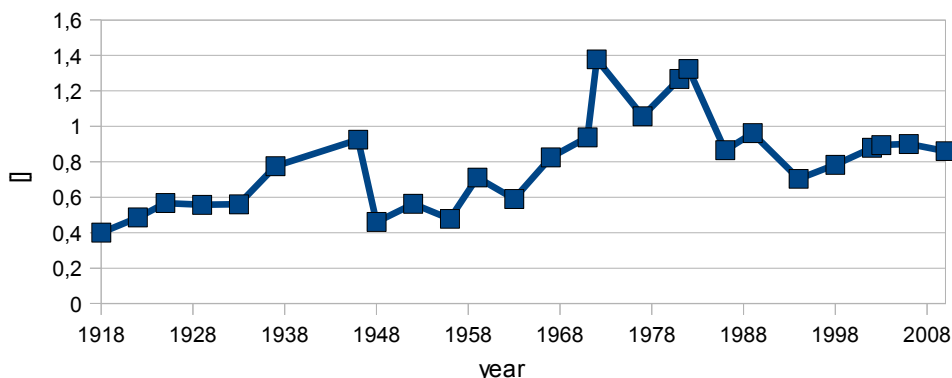


Figure 2: *The percentage of speech acts by women MPs normalized by the percentage of women MPs*

## Topical inclination

Table 2 depicts our metric of topical inclination of women MPs computed for the period of the Pioneers. The different columns depict specific time frames within this period. The years above the columns refer to the election year, the numbers in the table cover the time from the start of the seating period in the year above the column until the day before the start of the seating period in the year above the next column. In the discussion below, whenever we refer to a year we mean this complete time frame. For instance, '1925' refers to the period '1925-09-15' until '1929-09-16' and covers the complete seating periods of the cabinets Colijn I and De Geer I.

Table 2: Topical Inclination of Women MPs: the **Pioneers**

Subject Area	1918	1922	1925	1929	1933	1937	1946
Infrastructure, Environment, Housing	0,00	0,50	0,41	0,33	0,46	1,00	0,00
Finance	0,00	1,03	0,35	0,31	0,32	0,94	0,03
Economy	0,00	1,15	2,29	1,13	0,50	0,71	0,00
Justice	0,00	0,97	1,56	1,49	1,75	1,48	3,08
Common Affairs	0,00	0,00	0,00	0,00	0,00	1,06	0,46
Agriculture, Fisheries, Shipping, Food	0,00	0,91	1,03	0,97	0,96	0,71	0,00
Social Affairs	0,00	0,00	0,00	0,00	2,14	1,77	0,51
Defence	0,00	0,00	0,38	0,21	0,43	1,00	0,57
Local Affairs, Territories	0,00	1,00	1,00	0,82	0,89	0,9	0,73
Foreign Affairs	0,00	0,18	1,06	0,90	1,00	0,39	0,14
Education, Arts, and Science	0,00	1,35	2,15	3,64	2,29	2,10	3,00

The period of the Pioneers had only few women MP, which naturally leads to a high variability in our metric. The column for the year 1918 shows only zero's, meaning that no speech act by a woman MP could be labeled with a subject area. For the other years in this period, the topical inclination of women MPs is foremost towards *Eduction, Arts, and Sciene*, and *Justice*. There is not one subject area with consistent low interest of women MPs, with the possible exception of Defence, which only shows an equality with men in 1937. Women MPs debated within the area of Finance only in 1922 and 1937 on equal footing with men.

Table 3 depicts our metric of topical inclination of women MPs computed for the period of the Tokens. The areas of most interest for women MPs in this period were *Health, Justice, and Education* and *Arts, and Science*. The areas of least interest were *Finance, Economy, and Defence*. *Foreign Affairs* shows a decline, while *Local Affairs* shows an increase in participation of women MPs.

The topical inclination of women MPs in the period of the Defenders is depicted in table 4. There is clearly a low participation in the areas of *Finance, Common Affairs, Agriculture, Foreign Affairs*, and Defence (with the notable exception of 1986). However, there is much higher participation in the debates on *Health* and *Social Affairs* compared with the male MPs.

The topical inclination of the Players is depicted in table 5. The only subject area with a consistant high interest of women MPs is *Health*. Also, there has been an increasing interest in the area of *Agriculture, Fisheries, Shipping, and Food*. Of consistant low interest to women MPs is the area of Foreign Affairs.

## Discussion

In this paper we have used a semi structured XML database with all proceedings of the Dutch parliament, in conjunction with an XML database of all members of parliament, to investigate the participation of women MPs in the parliamentary debates by counting their number of speech acts and number of topics they participated in.

In order to divide our dataset over time in meaningful epochs, we used the same approach as Leyenaar [1]. She recognized four distinct periods: those of

Table 3: Topical Inclination of Women MPs: the **Tokens**

Subject Area	1948	1952	1956	1959	1963	1967	1971	1972
Infrastructure, Environment, Housing	0,29	0,02	0,23	0,52	0,95	0,61	0,97	0,69
Finance	0,48	0,09	0,12	0,34	0,68	0,26	0,23	0,54
Economy	0,38	0,09	0,26	0,50	0,88	0,55	0,32	0,45
Justice	2,00	1,80	1,16	1,31	1,97	2,97	2,08	1,23
Common Affairs	0,48	0,18	0,19	0,42	0,51	0,41	0,65	0,90
Agriculture, Fisheries, Shipping, Food	0,48	0,02	0,14	0,50	0,25	0,35	0,79	0,69
Social Affairs	1,43	1,02	1,67	1,28	1,12	1,47	1,20	1,48
Health	1,90	1,29	1,26	0,61	0,83	1,26	1,55	2,40
Defence	0,57	0,16	0,05	0,30	0,14	0,17	0,59	0,44
Local Affairs, Territories	0,43	0,56	0,58	0,36	0,76	0,79	0,73	0,93
Foreign Affairs	1,10	1,53	0,19	0,44	0,88	0,36	0,39	0,58
International Development	0,00	0,00	0,00	0,00	1,95	0,27	0,91	0,40
Education, Arts, and Science	3,71	2,71	2,40	2,30	1,76	1,48	1,16	1,30

Table 4: Topical Inclination of Women MPs: the **Defenders**

Subject Area	1977	1981	1982	1986	1989
Infrastructure, Environment, Housing	0,76	0,75	0,78	0,75	0,97
Finance	0,81	0,65	0,55	0,42	0,48
Economy	0,85	1,07	0,65	0,9	0,78
Justice	1,26	1,79	1,29	1,26	0,93
Common Affairs	0,51	0,89	0,46	0,54	0,56
Agriculture, Fisheries, Shipping, Food	0,64	0,41	0,88	0,64	0,81
Social Affairs	1,09	1,34	1,43	1,46	1,07
Health	2,86	2,14	1,82	1,92	1,18
Defence	0,67	0,32	0,65	1,23	0,65
Local Affairs, Territories	0,65	0,7	0,92	0,88	0,80
Foreign Affairs	0,64	0,43	0,66	0,51	0,72
International Development	1,20	0,88	0,75	2,37	0,95
Education, Arts, and Science	1,53	1,47	0,85	0,76	0,96

the Pioneers, the Tokens, the Defenders, and the Players (see table 1). Overall our results seem to be in agreement with her findings.

The period of the Pioneers is marked by only a few women MPs. During this period we see a steady increase in their relative number of speech acts (figure 2), which could indicate a growing level of acceptance by their male colleagues (an increased engagement in discussions). The overall high level of topic participation (figure 1) and very few subject areas with low participation, is in agreement with Leyenaar’s characterization that these women were highly educated and very well informed.

The period of the Tokens shows an initial decrease in topic participation, and a drop in their relative number of speech acts. The women MPs in this period shown an inclination towards ‘softer’ subject areas such as Education, Arts, and Sciences, and move away from areas such as Foreign Affairs, with very little participation in the areas of Finance and Economy. Their inclination towards Health and Social affairs is in agreement with Leyenaar’s observation

Table 5: Topical Inclination of Women MPs: the **Players**

Subject Area	1998	2002	2003	2006	2010
Infrastructure, Environment, Housing	0,73	0,98	0,84	0,98	0,86
Finance	0,72	0,88	0,99	0,78	0,56
Economy	0,92	1,09	0,9	0,97	1,31
Justice	0,86	0,77	0,95	1,04	1,25
Common Affairs	0,26	0,80	0,59	0,92	0,76
Agriculture, Fisheries, Shipping, Food	0,66	0,80	0,93	1,23	1,23
Social Affairs	0,69	1,20	1,33	1,19	0,87
Health	1,58	1,69	1,60	1,75	1,99
Defence	0,59	1,12	0,79	0,90	0,65
Local Affairs, Territories	0,66	0,93	0,66	0,77	0,76
Foreign Affairs	0,56	0,81	0,63	0,64	0,42
International Development	0,96	n/a	0,96	0,7	n/a
Education, Arts, and Science	0,99	1,34	0,97	1,01	0,52

that they were mainly expected to look after the interests of women as mother and home-maker.

The period of the Defenders shows again an inclination of women MPs towards Health and Social affairs. If this was due to the fight for gender equality remains to be investigated. It is interesting to note that during this period the topic participation of women was very high; there were almost no men-only debates. If this can solely be attributed to a few high profile women such as Ria Beckers (first female party leader in the dutch parliament) needs to be further investigated.

The period of the Players is when the percentage of women MPs reached a critical height of more than 30%. According to Leyenaar, this period is marked by a reduced specific interest for women's issues, and women MPs see themselves less as representatives of female citizens. Their relative number of speech acts approaches what we see in males. We do see however a stark decrease in topic participation, which is something which needs to be investigated further as to its causes.

## Acknowledgement

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