Some Honourable Members:
A Quantitative Analysis of Parliamentary Decorum in Canada and the United Kingdom

Tanya Whyte
PhD Candidate, Department of Political Science
University of Toronto, Canada

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Introduction

The negative behaviour of elected representatives in the House of Commons is a frequent target of criticism in the Canadian "democratic deficit" literature. One root of the democratic deficit in Canada and in other Westminster-style democracies, it is argued, is public repugnance for the adversarial nature of the system (Docherty 2005, 2012). It is also asserted that parliamentary civility has gotten worse in the last few decades and that corrective reforms are becoming increasingly necessary (Blaikie 2008, Hill 2010, Pearson 2010). The consensus even crosses partisan lines. In 2010, Conservative MP Michael Chong proposed changes to the Standing Orders on Oral Questions, intended to remedy Canadian public malaise about Parliament by enforcing stricter rules for parliamentary decorum (House of Commons Debates, May 7, 2010). Even more recently, the NDP introduced an online petition called the Civility Project to support a motion empowering the Speaker to suspend heckling MPs without pay (New Democratic Party of Canada 2013).

Similar to other proposed democratic deficit reforms, there has been little to no empirical study of the conditions prompting the calls for reform, or of similar trends in other Westminster systems (Smith 2003). Even if the adversarial process of Westminster-style Question Period "is

a bloodier battlefront than World Wrestling Entertainment," (Docherty 2012, 190) it does provide some level of effective public accountability (Docherty 2012, 190; Savoie 1999, 341). Question Period is the most accessible and media-friendly televised account of the everyday legislative process, and critiques of its performance deserve more thorough analysis, especially considering the continuing weakness of empirical and comparative work in Canadian legislative studies (Atkinson and Thomas 1993, Malloy 2002). This empirical paper aims to investigate whether parliamentary disruptions have increased in both Canada and the United Kingdom since 1994 through a computer-assisted text analysis of Hansard in both countries.

Despite the free availability of online Hansard proceedings, empirical analyses of debate in the Canadian House of Commons are quite rare in the literature. Crimmins and Nesbitt-Larking study the decisions of Prime Ministers to speak in the House (Crimmins and Nesbitt-Larking 1996), while Docherty (2005) investigates measurements of time devoted to member's questions and statements. Soroka and Wlezien investigate the relationship between public opinion, policy outputs, and legislatures in Canada and two other cases including the UK, employing some analysis of parliamentary discourse (Soroka and Wlezien 2010); Soroka continues to be involved in collaborative development of coding schemes for news media and parliamentary debate in Canada (see for example Albaugh et al. 2013). More relevant to the current study is QPMAP, a content analysis study on Question Period communication led by Alex Sevigny, which has been underway at McMaster University since 2010. QPMAP aims to develop a detailed linguistic content analysis of Question Period debates, including the creation of a "civility index" for parliamentary debate (Comm-Lab Research Space 2010). QPMAP will fill a gap in the international literature on the linguistics of political communication; analyses of major parliaments around the world including Spain, Italy, Sweden, the UK, Wales, and many

more have as yet not been complimented with such a study of the Canadian parliament (see Bayley 2004, Ilie 2006).

From a political science point of view, this study suffers from a number of flaws. The most obvious is that QPMAP's dataset only goes back as far as 2006, thus reflecting the House of Commons under the leadership of only one party and one Prime Minister. Online records exist for the Canadian Hansard back to 1994, and in 2013 the Library of Parliament announced a collaboration to digitize historical Hansards (Canadiana.org 2013), putting the long-term usefulness of QPMAP's methodology into question. Secondly, the level of qualitative detail incorporated into the "civility index" analysis restricts its context to the Canadian parliament, severely limiting its potential in cross-country comparisons. Finally, the study's methodology focuses almost exclusively on discursive civility to the point of exclusion of many political variables relevant to theory-building in political science, such as the influence of parties and elections. While QPMAP asserts one of its purposes is to empirically determine whether "the quality and civility of parliamentary communication has degraded in the ways that are often reported in the media and through anecdotal commentary," I argue that an adequate answer to this question must rely both on a larger dataset and make use of clearer, transferable analytical concepts to permit a comparative assessment of the Canadian House of Commons. Hansard transcription is subject to professionalized standardization (LeBlanc 2013), so a reasonable analytical starting point is the frequency of reliable signifying words or phrases across the text of Hansard.

Methodology

Data and Software

In 2006, a group called mySociety developed and released a website, TheyWorkForYou.com, that reads data from (or scrapes) the official websites of the UK Parliament, including Hansard transcripts, and standardizes them into machine-readable format (TheyWorkForYou 2013a). Since then, the open-source code has been adapted by other non-profit organizations in Australia, New Zealand, Ireland, and Canada. These websites offer APIs (application-programmer interfaces) for automated retrieval of information from their databases, and a simpler search interface for website visitors. However, the data formats and parsing standards vary from site to site and are frequently updated by volunteer programmers. For example, TheyWorkForYou uses the XML data language and does not strip formatting information from scraped data, while openparliament.ca uses the JSON data standard and reformats the data more extensively due to the limitations imposed by the Parliament of Canada's website (TheyWorkForYou 2013b, Mulley 2013a). The data also contain occasional inconsistencies and errors introduced by the translation of web formatting to text.

In order to handle these formatting and data structure complexities, I have written a custom Hansard analysis program in Python to clean, process and comparatively analyze data from TheyWorkForYou and openparliament.ca. The Python language was chosen for this project for a number of reasons. First of all, it enables access to an extensive range of addon packages such as the Natural Language Processing Toolkit for linguistic comprehension, well-developed parsing packages for both JSON and XML standards, and statistical analysis and

plotting packages such as SciPy and PANDAS, all of which are open source and freely available for use. Second, commercial text analysis software (such as NVivo) lacks the extensibility of a scripting language such as Python. For example, future analyses involving machine learning algorithms, or integration with more complex statistical analysis functions in R, are all possible options for further extension of the analysis beyond the simple statistical model developed here; indeed, this paper represents the first step toward such a larger dissertation project. The source code of my software is available to read and download online for purposes of transparency and reproducibility (Whyte 2013).

The baseline unit of analysis in this program is the "statement", or an individual speech made by a Member of Parliament. Each statement is stored as an object with associated data about the time, date, parliament, and session of parliament when the statement occurred in addition to the complete text of the statement itself. Biographical data including name, constituency, party, and links to more detailed personal information are also tied to each statement made by an MP. Statements made by the Speaker or acting Speaker, and by unknown Members, are also attributed to these individuals. Within the program, statement objects can be searched within any specified time period along any of these criteria, as well as for individual words or phrases within each statement. Search results such as frequencies can be statistically analyzed within the program, or be exported to Excel/CSV format. For this paper, I performed the analysis within the Python environment using the SciPy statistics and plotting packages (SciPy Developers 2013).

Variables

To quantify "unparliamentary" behaviour, I count the frequencies of two variables: "interruptions" and "order." These constructs were informed by the work of Ilie (2004, 2006) and Bevitori (2004) on the linguistics of parliamentary interruptions and insults in UK parliaments, and further elaborated through a preliminary textual review of both Canadian and UK Hansard datasets from 1994 to 2012.

Interruptions:

In the Canadian House of Commons, disruptive interruptions in the House of Commons are attributed to "Some hon. members" in Hansard. Beginning in 2006, when the digitization of Hansard became the norm, interruptions are represented as a standard "Oh, oh!" or "Hear, hear!" depending upon whether the interruption was negative or supportive. While these representations are generally standard in earlier years, different capitalizations and punctuations do occur. The text or a paraphrase of outbursts is also recorded in some of the earliest cases. To measure the frequency of interruptions, I compiled a dictionary of about 220 non-duplicated outbursts, comprising all different permutations of the above two statements present in the data plus all other unique statements (eg. "Shame!"). The dictionary does not include those statements related to standard House procedure (eg. Yeas and Nays during a vote), nor those reflecting a misattribution of contextual data (eg. *The House resumed at 5:00 PM).*

The choice of "interruption" for a measure is based on the UK Hansard recording practice which collapses all non-permitted interjections in the House to *[Interruption]*. Because of this

standardization, the frequency of interruptions in the UK Hansard is simply the frequency of *[Interruption.]* statements. I calculate the frequency of interruptions calculated in my analysis as interruptions per day per year, per parliament, and per parliamentary session to compare across different time spans. To standardize this measure, I divide by number of statements per time span to obtain a measure of average interruptions per time span.

Order:

"Order" is a measure of statements attributed to the Speaker that contain the case-sensitive "Order," excluding references to "Standing Orders" or other standard House procedures. Variations such as Deputy Speaker, Acting Speaker, Madam or Mr. Speaker, and so on are accounted for within this measure. Based on a preliminary review of the data, this measure transfers very well between the standard reporting practices of the Canadian and UK Hansards. Like the first measure, the frequency of order statements is calculated per day per year, per parliament, and per parliamentary session, and is again standardized to obtain a measure of average order statements per time period.

One potential problem with the validity of this measure is its reliability: that is, is the Speaker calling for order more often because MPs are being more unruly, or because they have chosen to enforce the rules of parliament more strictly? One way to address this problem is to track these trends according to rotations of the Speaker position; another is to investigate whether the relationship between the interruptions measure and use of order statements by the speaker is positive or negative. Because of the length of Speaker appointments (in Canada, for example, the vast majority of the dataset covers the tenure of only two Speakers), this calculation may not

provide strong support, but by comparing the strength relationship across sessions of Parliament, we can at least see if it varies significantly enough to suggest the need for further investigation. Likewise, a future analysis would likely benefit from tracking changes to the Standing Orders of Parliament once a broader time range of data is available to increase the validity of this measure.

Hypotheses

Has Question Period really become worse over time, or are parliamentarians (and scholars) biased in their recollections of greater collegiality before "soundbites" and media messages became so important to politicians' images? (Blaikie 2008). Historical Hansards routinely document drunken and disorderly conduct in the early Canadian House of Commons (Bosc 1987); while the existing data are too limited to put these tales into context, a comparison the pre-Internet House of Commons of 1994 to today's social media era should give us some insight about trends in parliamentary decorum. Based on claims made in the literature, we should expect to see a positive trend in interruptions over time.

Secondly, based on the common prescription that giving the Speaker more power to enforce rule in the House would improve Question Period (as both reform proposals mentioned in the Introduction suggest) we should expect that order statements should be inversely related to interruptions. At the same time, if the Speaker does require more powers to cope with increasing parliamentary chaos, then we should also see an increase in order statements as well. To sort out these last two hypotheses, I separate the data according to acting Speaker and compare these relationships between each speaker's tenure.

Results

Interruptions Over Time

Figure 1 shows a visual comparison of the frequency of interruptions in the Canadian and UK House of Commons weighted by days in operation. Interestingly, each country appears to follow an opposing trend: while Canadian interruptions have been steadily decreasing since 1994, those in the UK have been increasing, although a significant sustained spike between 2001-2007 has a substantial impact on the trend. Given the 2003 Iraq War and its political controversy in Britain (and Canada's corresponding lack of involvement in the war), such a spike is difficult to interpret as characteristic of a longer-term trend as opposed to a major political event. Statistical analysis of this trend presents an impressively strong conclusion: the negative slope of interruptions in the Canadian parliament is significant at $p=0.0005$. The trend in the UK, as anticipated, is too uncertain to verify as upward over this time period. Calculating both statistics according to parliamentary sessions rather than years has little effect on the strength of either relationship. At least in Canada, the truism that parliamentary civility is getting worse over time appears to be unsupported.

Relationship of Interruptions and Speaker Intervention

If there is a significant downward trend in parliamentary interruptions, could this be due to an increasing willingness (or need) of the Speaker to intervene? The first step in addressing this hypothesis is a corresponding frequency plot (Figure 2) for Speaker order statements in each

country. Again, we see a pattern of a strong relationship (this time, positive) in the Canadian case, while the UK Data appears to show a relatively consistent (though fluctuating) trend in Speaker interventions over time. Once again, these observations can be confirmed statistically. The upward trend in Speaker order statements over time in Canada is even more significant (p = 00003) than the downward trend in interruptions. Likewise, there is no significant linear trend in the UK data. For summaries of these relationships, see Figures 3-4 and Table 1.

The next step is to analyze the relationship between speaker order statements and interruptions; because the UK relationships themselves are not significant, I focus here on the Canadian case. The hypothesis that an increase in order statements causes a decrease in interruptions has only modest, if any, statistical support (p=0.14106, R^2=0.12295, standard error = 0.32795). While some of the decrease in interruptions over time may indeed be due to the Speaker's influence, the significant downward trend in interruptions overshadows the effect of the Speaker.

A further test lends some support to this analysis (Table 2). I calculate the strength of the relationship between interruption and order statements across parliamentary sessions as the time unit, then compare their z-scores to find any significant variation across the relationships. Bearing in mind the error introduced from each linear regression, it appears that only one time period is significantly deviant: Gilbert Parent's Speakership over the 36th Parliament (1997-2000 Liberal Majority). During this period an anomalous spike occurred in Order statements, matched by a smaller yet significant increase in interruptions (see Figure 3). Given that Parent was a Liberal, the combination of a Liberal majority, considerable partisan fragmentation among the opposition, and the first rotation of the Reform/Canadian Alliance as Official Opposition might be a reasonable political explanation for the anomaly. Nevertheless, the most solid conclusion

that can be drawn from this analysis is that changes in the style of the Speaker or their willingness to intervene to uphold parliamentary decorum makes little difference to the (rather weak) negative relationship between speaker interventions and parliamentary interruptions.

Conclusions and Future Directions

This analysis has attempted to test the popular assertion that Question Period has become more raucous over time. By quantifying interruptions in Parliament and the Speaker's response to them, and performing a comparative textual analysis of Hansard in Canada and the UK, I have shown that the empirical data do not support this hypothesis. In the UK, no such correlation is present, while in Canada, parliamentary interruptions have significantly decreased since 1994. Likewise, while a small amount of this decrease could be attributed to increased intervention by the Speaker, this relationship is of questionable strength at best.

One weakness of this initial analysis is the nineteen-year timescale of digital Hansard data currently available in Canada. Once comparisons can be made between more than two Speakers with multiple year terms in Parliament, for example, hypotheses about the influence of the Speaker on parliamentary debate can be more reliably tested. In quantitative textual analysis, the longer the dataset the more valuable the result and the more complex analytical and statistical techniques can be applied to the data. (Popping 2000, 10). Nevertheless, my initial empirical findings both challenge existing analyses of the Canadian parliament and point to further interesting possibilities for computer-aided empirical analysis of Hansard once the digitization process of Hansard prior to 1996 is completed this year. Further parliamentary datasets also exist that, once processed, can provide additional points of comparison given the UK data examined

here showed markedly different results than the Canadian trend. While the Australian and New Zealand Hansard databases have been previously mentioned, Hansard transcripts from British Columbia and Ontario—which have not yet been parsed into machine-analyzable formats although their raw text is available online (Mulley 2013b)—are an as-yet untapped resource for comparative analysis.

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Figure 1:

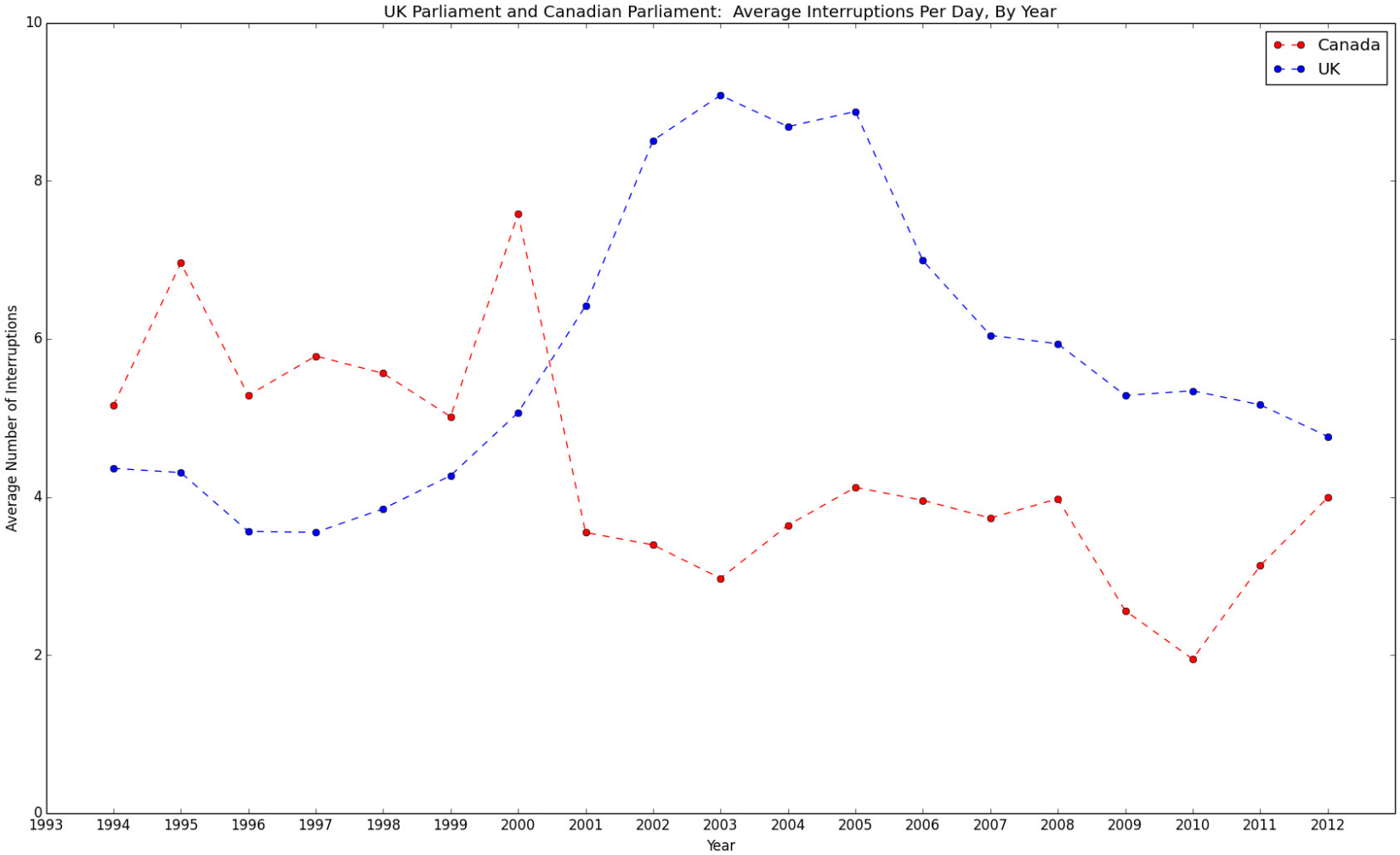
UK Parliament and Canadian Parliament: Average Interruptions Per Day, By Year
Canada
UK
Average Number of Interruptions
Year
0
2
4
6
8
10
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

Figure 2:

UK Parliament and Canadian Parliament: Average Speaker Order Statements Per Day, By Year
Canada
UK
Average Number of Order Statements
Year
0
2
4
6
8
10
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
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2010
2011
2012

Figure 3:

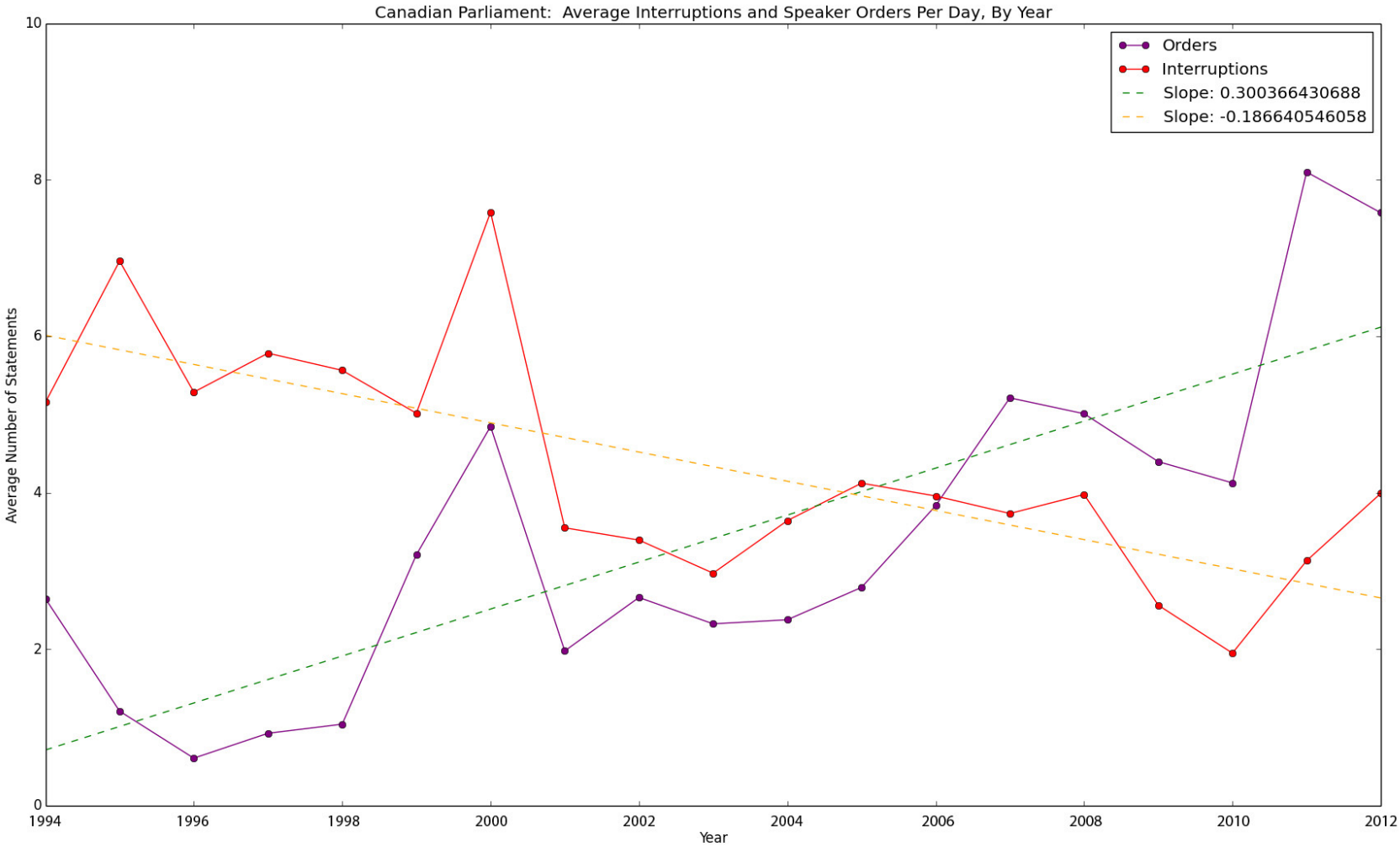
Canadian Parliament: Average Interruptions and Speaker Orders Per Day, By Year
Orders
Interruptions
Slope: 0.300366430688
Slope: -0.186640546058
Average Number of Statements
Year
0
2
4
6
8
10
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012

Figure 4:

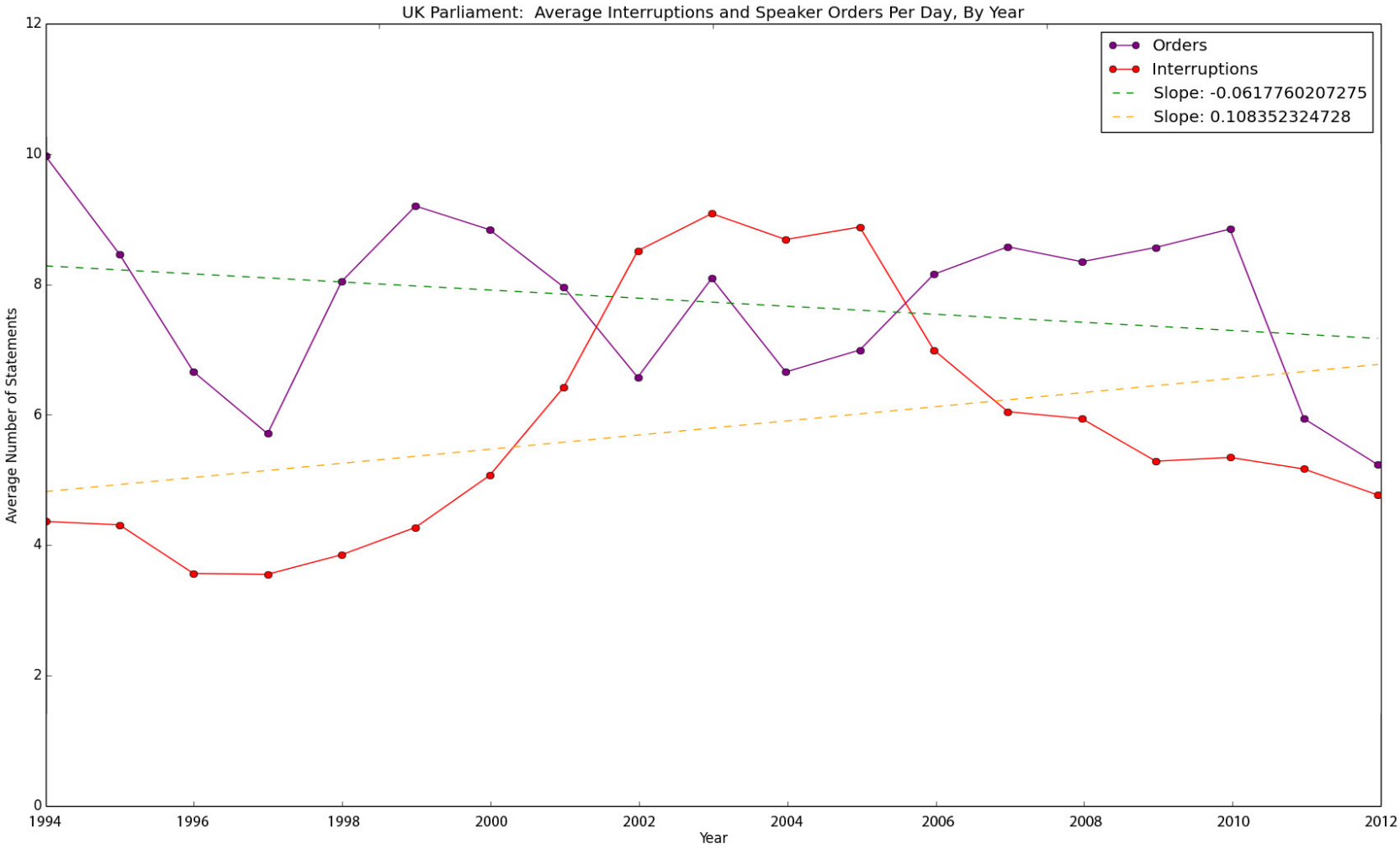
UK Parliament: Average Interruptions and Speaker Orders Per Day, By Year
Orders
Interruptions
Slope: -0.0617760207275
Slope: 0.108352324728
Average Number of Statements
Year
0
2
4
6
8
10
12
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012

Figure 5:

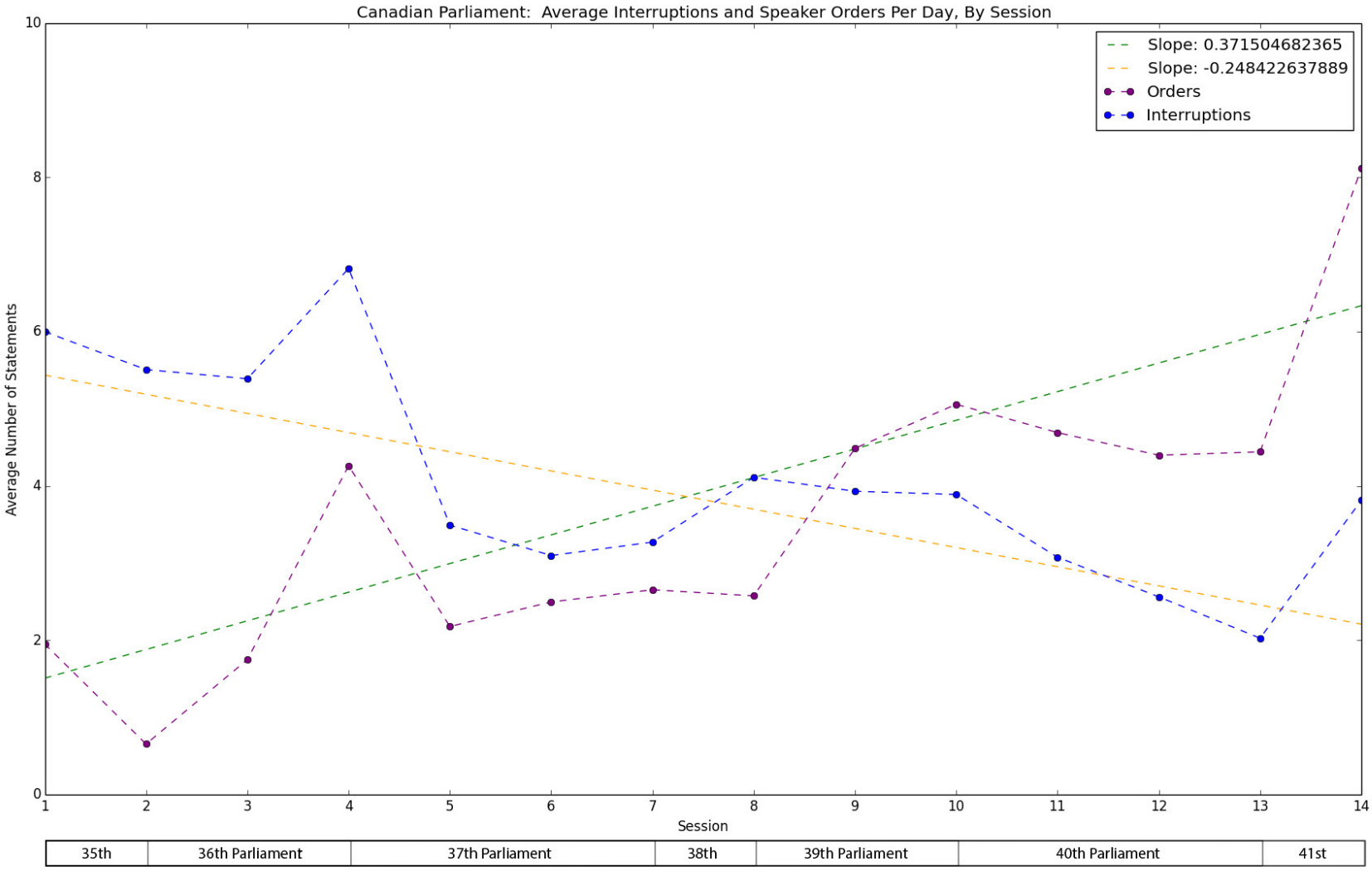
Canadian Parliament: Average Interruptions and Speaker Orders Per Day, By Session
Slope: 0.371504682365
Slope: -0.248422637889
Orders
Interruptions
Average Number of Statements
Session
0
2
4
6
8
10
1
2
3
4
5
6
7
8
9
10
11
12
13
14
35th
36th Parliament
37th Parliament
38th
39th Parliament
40th Parliament
41st

Table 1: Linear Models of Interruptions and Order Statements, Canada and UK Hansard

	Slope	Intercept	R value	p value	Std Error	R^2
Canada: Interruptions Per Year	-0.18664	6.01424	-0.72240	**0.00048**	0.04333	0.52187
Canada: Orders Per Year	0.30037	0.71115	0.80520	**0.00003**	0.05365	0.64834
UK: Interruptions Per Year	0.10835	4.82048	0.33179	**0.16522**	0.07472	0.11008
UK: Orders Per Year	-0.06178	8.28311	-0.26859	0.26620	0.05373	0.07214
Canada: Interruptions Per Session	-0.24842	5.68603	-0.75602	**0.00176**	0.06209	0.57157
Canada: Orders Per Session	0.37150	1.13683	0.82344	**0.00030**	0.07390	0.67805
UK: Interruptions Per Session	0.10477	4.82018	0.31447	0.18977	0.07670	0.09889
UK: Orders Per Session	-0.05993	8.47852	-0.20770	0.39353	0.06845	0.04314
Canada: Orders vs. Interruptions, by Session	-0.44737	5.37300	-0.32583	0.25559	0.37472	0.10617
Canada: Orders vs. Interruptions, by Year	-0.50628	5.60891	-0.35065	**0.14106**	0.32795	0.12295
UK: Orders vs. Interruptions, by Session	-0.14178	8.75628	-0.16371	0.50305	0.20722	0.02680
UK: Orders vs. Interruptions, by Year	-0.07645	8.17019	-0.10854	0.65826	0.16981	0.01178

Table 2: Comparison of the Speaker Effect in Canada Across 14 Parliamentary Sessions

	Parent				Milliken									Scheer
Speaker Effects in Each Session, p value	0.52434	**1.065E-09**	**0.00414**	0.32575	0.62041	0.78288	0.55965	0.33016	0.83447	0.84022	0.86682	0.94883	0.97289	0.94319
Speaker Effects in Each Session, z score	-0.06105	5.98750	2.64057	0.45168	-0.30656	-0.78196	-0.15009	0.43947	-0.97200	-0.99536	-1.11147	-1.63360	-1.92503	-1.58211

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