Semantic Networks Analysis of Political Party Platforms: Coalition Prediction Based on
Semantic Distances in Scottish Elections 1999-2011.

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Table of Contents

CHAPTER

Abstract

Political party manifestos are considered important tool in campaign communication, as well as a document describing party's ideological stand and issues considered key for each election year. Party manifestos from Scottish general elections since first independent elections after devolution in 1999 till most recent elections in 2011 were examined using semantic network analysis software. The hypothesis that coalitions can be predicted based on semantic distances and commonalities between parties' manifestos was not supported. However semantic distances and two mode semantic network analysis showed to be a viable method for describing country's political climate and power structure, without requiring prior knowledge of country's political makeup, and without pre conceived notions.

Keywords: Semantic Network Analysis, Party Manifestos, Scotland

Semantic Networks Analysis of Political Party Platforms: Coalition Prediction Based on

Semantic Distances in Scottish Elections 1999-2011.

Often while describing or discussing political terms people tend to use spatial references. It is understandable what one means when saying "this party leans to the right on fiscal issues, and when it comes to social issues though, it leans more towards the center". Similar spatial logic applies to illustrating political positions. The right side has come to represent more conservative views, while the left is thought to mirror more liberal positions. This Left-Right distinction may be traced back to French revolution, when in the post-revolutionary French Constituent Assembly of 1789 the King's supporters chose to sit to the right of the president's chair, while supporters of the revolution chose to sit on his left (Laver, 2001).

Later during the industrial revolution, new property relations added additional meanings to this distinction, building on the previously established right versus left wing split (Ignazi, 2003). The same spatial metaphor applies to conveying the nature of relationships political actors can have to each other, or to their voters. Often parties are described as being closer or further away from each other in some topics, representing their positions on a left to right dimensional spectrum. Similarly, when voters express their affiliation with a particular party, they often describe this party's position as "closer" to their own. Literally, it means they like it more than the alternative, or the status quo. However, the spatial rhetoric makes it easier to represent those distances in a way that can be easily understood. Laver describes that tradition in *Estimating the Policy Positions of Political Actors* (2001). Also, he discusses the importance of being able to

establish the position of political actor in that space to enable the analysis of relationships between different political actors. When thinking about political parties as being closer or further away from each other, people usually think of that distance as representation of parties' ideological similarities and differences.

Communication scientists, however, will more likely be interested in how these ideologies are expressed. In his definition of political communication, McNair includes all "Verbal and written statements as well as visual means of signification such as dress, make-up etc. that might be said to constitute a political image or identity" (2003). In agreement with his definition, communication scientists analyzing ideology expressions are interested in which communication tools, channels and devices mirror parties' political positions and allow scientists to place a particular political actor in a common ideological space? One of the most obvious indicators of parties' political position is their party platform, program, or manifesto. This document is published every election and in most multi-party democracies is considered a main point of reference in estimating parties current ideological stand, future plans, and relation to political competitors (Pogorelis, Maddens, Swenden & Fabre, 2005). Any political slogan, election promise, or official statement that a party issues, as a political body, or through one of its representatives has to be in agreement with the party's manifesto. Some researchers say that even though there are many types of political texts that can be considered informative, one of the most authoritative sources of information about the stated electoral policy positions of any party is indeed a party manifesto (Bennoit & Laver, 2006; Pridham, 1986). Party manifestos have been used before to estimate party's ideological position (Laver & Garry, 2000). The method most often used in manifesto's

analysis is coding (Volkens, 2001), sometimes computer-assisted text analysis have been used (Laver, Benoit & Garry, 2003; Atteveldt, Kleinnijenhuis & Ruigrok, 2008; Bäck, 2003), but not as often as manual coding, or content analysis (Laver & Budge, 1992; Budge, 2001).

One of the most challenging questions is: "So what?" That simple question expresses very important aspect of any research endeavor, which is applicability. Even if there's a way of establishing a political party's position using computer text analysis, to make it useful one has to determine how to apply the results of the analysis that haven't been thought of before, and that will somehow change the way things have been done. This thesis will use parties' manifestos in order to predict coalition formation. The assumption is that if a manifesto as a tool of political communication mirrors party's ideological stands, then a semantic analysis of words central to each party's manifesto should mirror that stand. Traditionally, the way of visualizing parties as "close" or "far apart" is rooted in either interpretations of their ideological placement on the right-left spectrum in relation to each other, or history of their mutual relations. Semantic analysis of party manifestos aims at adding a new way of looking at parties' relations. Parties that are closer together have certain potential to utilize their common goals. Coalitions can be seen as the fulfillment of that potential. After all, a coalition, besides securing majority in parliament, is an example of action, which ultimately is directed at maintaining policy profile consistent with that of the winning party and securing executive powers to fulfill electoral promises. Therefore, similar rhetoric and strong ties mirrored in speaking of important issues using similar set of words can be an indicator of coalition potential. If parties can be visualized as close to each other in ideological terms and therefore likely to

form a coalition that fact should be mirrored in the semantic relationship of their manifestos. If political parties turn out to be close or far from each other based on word usage and frequencies of similar words used in their manifestos, there can be another dimension added to traditional spatial vision of political actors' relationships.

In following paragraphs semantic networks analysis is first defined, along with description of research in which it has been applied. Second, ways of predicting coalitions in political sciences are briefly discussed, along with some limitations of those approaches. This description is followed by justification of using party manifestos as tools of political communication in this project. Finally, research questions are presented along with a description of the Scottish political party system and reasons behind choosing this country as the subject for this research.

Semantic Networks

Semantic networks can be used to describe and research the structure of connections between people, political parties, organizations, countries and any other type of network node in terms of communication content (Danowski, 1982). Semantic network analysis is a method of analyzing text that infers meaning based on the use of symbols and main themes of any examined text by analyzing the words that compose it, their frequencies, clusters of words or symbols that appear in the text and graphic representation of central themes. In this research, semantic networks will be used to analyze structural relations among parties (nodes in the network) based upon their shared meaning. Shared meaning has been operationalized as shared word use in party manifestos. Semantic network analysis takes a unique place between content analysis of

text and computer-assisted word-counting. Unlike content analysis this method of analyzing text does not involve human coders, and eliminates the need to analyze meaning and categories in text before beginning the analysis. Semantic network analysis, however, extends beyond merely counting frequencies of word occurrence in order to establish semantic commonalities. To illustrate the way in which semantic network analysis programs use words to produce visualizations of semantic distances an example can be used. Let's assume that out of four parties, three use words national healthcare in their manifestos. Two of the parties oppose it, and one supports the idea. Software used to analyze semantic structure of these manifestos will consider a word healthcare, as well as neighboring words within a given window (such as the word oppose) and then draw conclusions about semantic distances. That means two parties opposing national healthcare will appear closer to each other than the party supporting it, even though they all mention the word healthcare in their manifestos.

Semantic networks analysis grew out of social and communication network analysis (Carley, 1993; Danowski 1982; Doerfel, 1998; Woelfel, 1997) and is different than most commonly used set of methods of text analysis. Semantic network analysis does not require prepared categories, or manual coding that can often be problematic when analyzing language. Also, it emphasizes the words used in text, and the context in which they are used tracing trends beyond the meaning of the individual words. Instead, semantic network analysis allows the structural examination of text, including the relationships between words and their frequency of occurrence. From this analysis, themes central to the entire text may be inferred. Semantic network analysis can also be

visualized, by mapping the concepts central to the text and comparing them either across one text or between different documents.

Semantic networks analysis has been used to analyze variety of texts in different contexts. For example, it has been used to assess cultural differences in translations of Universal Declaration of Human Rights (Kwon, Barnett & Chen, 2009), to analyze titles of papers presented to the International Communication Association (Doerfel & Barnett 1999) and to examine cultural differences in organizational communication (Jang & Barnett, 1994).

This method has also been used in the political context. The lists of political topics analyzed with semantic networks includes U.S. presidential debates (Doerfel & Marsh, 2003; Doerfel & Connaughton, 2009), political blogs (Wallsten, 2007; Meraz, 2008), the analysis of newspaper articles with focus on language (Atteveldt, Kleinnijenhuis & Ruigrok, 2008), causality in political networks (Fowler et al, 2011) and political speeches (Klebanov, Diermeier & Beigman, 2008).

Some researchers have turned their focus to linguistic or semantic analysis of party manifestos (Gabel & Huber, 2000; Laver, Benoit & Gary 2003). The Comparative Manifestos Project (CMP), a large text-based resource for political manifestos analysis has been in operation since 1979, and by 2000 had used 2,347 human coders to code party manifestos from 52 countries since World War II. By creating 54 standard coding categories for types of issues that appear in party manifestos, coders analyze manifesto texts and prepare list of categories mentioned in manifestos with a "quasi-sentence" as a coding unit. For a detailed description of the CMO and MRP (Manifesto Research project), as well as list of some shortcomings of that method, see Volkens (2001).

However, none of the mentioned authors used semantic analysis of party manifestos as a method to predict coalition formation.

Coalition Formation: Predictions and Research

It is beyond the scope of this thesis to fully analyze methods of predicting coalitions. However, in order to place this work in a broader context the main trends will be briefly discussed. First, an important division proposed by Laver (1986) divides theories of coalition formation into deductive and inductive in methodological style. The deductive perspective, based on game theory, is promoted by formal theorists coming mostly from American tradition of party research. It assumes that all potential coalition partners have what is called "equal coalition potential", which means that each party has equal opportunity to enter a coalition (Laver & Shofield, 1990; Bäck, 2003). This perspective assumes that choosing a coalition partner is simply a "number's game". Early game-theory based approaches, portrayed strategies of coalition forming as a constant sum game played for the fixed prize of holding office. There are a number of quantitatively measurable factors that taken into consideration and calculated should produce optimal coalition results (Riker, 1980). Some of the factors that are considered in game theory-based models include number of partners necessary to secure majority, the number of seats that other parties won and therefore have to offer, and number of bargaining scenarios between future partners. This method considered in terms of party's strongest motivation is known as office-seeking (Stefuriuc, 2009). This method doesn't usually apply successfully to European multi-party democracies because not all the parties have equal coalition potential, which violates that approach's first assumption

(Laver & Shofield, 1998). In Europe, factors such as type of electoral system, institutional requirements outlining forming and death of governments, and the fact that some parties could never be considered coalition partners due to their ideologically anti-systemic nature regulate coalition formation at least equally strong if not stronger than game-theory-based calculations. Theoretical traditions that expose this larger number of party's motivation are known as policy-seeking.

Another tradition of coalition prediction includes historical analysis of party's previous coalitions, ideological profile and election goals. Pridham (1986) calls this approach historical dimension. Laver (1986) classifies it as methodologically inductive. This method bases coalition formation predictions on previous historical events and analysis of the system circumstances. It also takes into account two categories based on party's strongest motivation. Depending on what goal is the most important in party's coalition approach there are policy and office-seeking type of motivation (Stefuriuc, 2009). The historical tradition attempts deeper case by case consideration that includes both office and/or policy seeking motivation.

Problems with this method arise in systems that have no previous history to analyze, like in Scotland's case. Another issue that this method does not account for are changing coalition partners, like in case of Scotland's Liberal Democrats, who formed a coalition government with the Scottish Labour Party in 2007 elections, and three years later while still in coalition with Labour party, formed a coalition with Conservatives after the 2010 elections in Great Britain. Also, historical analysis does not take into account slight changes that parties go through over time, that can be mirrored in their

manifestos and that can make forming one coalition more likely one year, while another coalition might be more probable three years later.

The fact that none of the above-mentioned theories considers multi-level party system characteristics creates an additional difficulty when trying to classify theoretical framework existing in the coalition prediction area. There have been attempts to include the multi-level party system characteristics in coalition predictions (Stefuriuc, 2009). Those point to the fact that parties have to consider multi-level party politics when entering a coalition on any level, whether it's regional or national (Stefuriuc, 2009). Considering the characteristics of the Scottish party system however, and the degree of independence that national parties are given at that level, as well as the fact that the party dominating the political scene in recent years has strictly regional character, this research treats the Scottish political parties as independent actors in their coalition decisions.

It is important to mention that neither of the mechanisms used to predict coalition partners have been shown to work. There are several additional problems with both methods,. Among them are not including party policies and hypothesis tested only on few post-war European democracies. They also have not taken into account that political parties do not operate in institutional vacuum, and have to include many factors in picking a coalition partner, not only to secure majority. For broader review addressing types of coalitions, methods of predicting them and problems related to these methods, see Laver and Shofield (1998) and Bäck (2003).

Party manifestos, however, have yet to be analyzed as potential indicators of coalition formation. Manifestos, platforms, or as they are called in some countries programs, are documents that political parties publish each election year and serve

several important purposes. First, even though messages included in them get abbreviated, shortened, simplified and distilled during the campaign, it's the party's manifesto that is the basis of communication with potential voters during elections. Nothing that gets to voters in form of campaign slogans, candidates speeches, or even posters can be in any way contrary to what is stated in that year's party manifesto. Secondly, being published every election year, its manifesto is a way for a party to adjust its positions on the political spectrum, update its profile and address issues central to each election. Thus by analyzing manifestos over time, a valuable opportunity to track changes in party's rhetoric, as well as, to compare issues central to particular election period. Finally, party manifestos are a way for the party to place itself on the political stage in relation to its competitors and the electorate, make promises and establish itself as a potential ruling party or an opposition force, and frame its program accordingly (Laver & Shofield, 1998).

As a communication tool, manifestos are an essential device with which political parties achieve all of the above mention goals. Manifestos are documents with which parties communicate their ideology, beliefs and goals for the future. As such, party manifestos can be considered a viable factor to consider when looking for potential predictors of a party's choice in the selection of coalition partners. Examining semantic similarities and differences among a set of manifestos when it comes to words used, word frequencies, words clusters and issues central to each of the manifestos for any particular campaign, and comparing them across parties that took part in that year's election should make it clearer which parties would be more or less likely to form a coalition. Predictions would be based on the assumption, that ideological similarities and differences are

mirrored in parties' main document which is that year's election manifesto. Parties whose statements, values and election promises differ drastically should be semantically distant, while parties closer together, could be perceived as potential coalition partners.

In the context of political communication, party manifestos can be seen as messages that parties disseminate to announce their position in relation to each elections' central issues, their voters and potential coalition partners or opposition (Laver, Benoit & Garry, 2003). One could assume that similar party manifestos would be predictive of potential cooperation and coalition formation. Further, if manifestos are similar in the issues they are addressing, and in the contexts in which those are discussed, it should be visible in the manifestos' semantic structure. If the manifestos' semantic structures are similar that would be indicative not only of similar meanings and use of symbols (words, issues) but also similar relationships between those symbols. This might mean that parties with similar ideological outlook, which consider similar issues among the most important, would put forth manifestos that mirror that ideological and semantic commonality. Parties which reside on the same side of political spectrum share meaning assigned to crucial issues and analysis of their manifestos should indicate that even without prior knowledge of the country's political landscape.

Finally, the party that obtains the largest number of votes should be reflected in the centrality of the issues that it discusses in its manifesto. This means that the party that obtains the largest number of votes is mirrored in the issues addressed in the party's manifesto were central to the election year in which it obtain those votes (Doerfel, & Connaughton, 2009). Based on these assumptions two research questions and two hypotheses may be posed:

RQ1: Are semantic distances indicative of parties' political and ideological similarities such that parties that are close to each other ideologically will be close to each other in terms of semantic distances?

RQ2: Is it possible to predict political coalitions based on the semantic analysis of party platforms?

H1: Centrality within the network predicts the proportion of votes obtained, such that the   closer to the more central a party, the more (the greater proportion) of votes it obtained in a given election.

H2: In situations where no one party wins an absolute majority, the greater the similarity between the semantic structures of two political party platforms, the greater the likelihood that those two parties would form a coalition.

The Scottish Political System

In order to answer the research questions, the manifestos of Scottish political parties were chosen. The Scottish political landscape is very interesting for many reasons. The rules governing political competition in Scotland can be seen as balancing act between the United Kingdom's party politics and the Scottish political stage. Some of the parties taking part in elections to Scottish parliament are independent, and specifically Scottish, others are branches of the United Kingdom's national parties with different degrees of independence and different types of relations to central party structures. Another aspect that makes Scottish politics a dynamic and unique research topic is that since the Scottish parliament has been established there have only been three elections, with the same parties taking part in all of them. In that context, time-sequence analysis of

party politics allows researchers to track changes in party relations over a relatively manageable time-period with the same actors present over time.

The Scottish parliament (also known as Holyrood from the name of a district in Edinburgh in which the parliament building is located) as a separate political institution was established in 1998 by a bill, passed in British parliament titled the Scotland Act (Keating, 1998; the Scottish Parliament Official Website). Passing of that bill was preceded by referendum, conducted in 1997, in which Scots expressed their will to change their region's status within the United Kingdom.

The reform of the British political system is called devolution.   Devolution is the statutory granting of powers from the central government of a sovereign state to government at a sub-national level, such as a regional, local or state level. Devolution can vary in its scope from mainly financial all the way to giving the power to make laws in almost all issues concerning the local level. For Scotland, devolution meant both giving the area budget rights and the right to establish and change taxes which were formerly administered by central government along with granting the authority to make legislation relevant to the area (The Scottish Parliament Official Website). The Scottish parliament was granted relatively large legislative authority without changing the political system to a federal one. Devolution also meant establishing a Scottish parliament and government. Parliament is elected every four years after the election winning party alone, or in coalition forms a government. The Prime Minister of Scottish government is called the First Minister, and has to be approved by the Queen, even though candidacies are provided by Scottish parliament. The Scottish governing bodies have the authority to make laws concerning any matters considered regional, and can be decided with no input

from British rule. Those are called devolved matters and consist among other things of: education, healthcare, local governments, police forces, transportation, farming industries and cultural affairs. Other issues, remaining only in legislative competency of British parliament in Westminster are called reserved matters and include: constitutional regulations, defense, international relations, public service regulations, treason and others (Scotland Act, 1998). It is important to note that while granting the right to Scottish authorities to make laws concerning devolved matters, British Parliament reserves the right to make laws that concern devolved matters as well. In other words, while the Scottish parliament maintains legislative power only in devolved matters, the British parliament has the power to decide both devolved and reserved matters (Scotland Act, 1998).

The Scottish Parliament was first elected on May 6, 1999, and started to function in its full legislative capacity in June of that year. Since then three more election have taken place in 2003, 2007, and most recently on May 5th, 2011. All together Scottish parliament consists of 129 representatives called MSP's which stands for Member of Scottish Parliament.

Political Parties in Scotland

There are five major political parties present on Scottish political scene. They will be described along with their brief history, their role in past three elections, party's structure, characteristics of its political profile and its electorate. Also, the coalitions that formed in past elections will be described and later on it will be illustrated how semantic analysis of party platforms can enrich the analysis of political communication processes.

Scottish Labour Party (SLP)

The Scottish Labour Party is a part of British Labour Party and is represented in Scotland by regional party structures such as Scottish Conference, Scottish Executive Committee, Scottish Head Office and Scottish Policy Forum. The SLP has its own leaders, party structures and separate party platform that is issued for Scottish elections and is a separate document from Labour party platform issued for elections to Westminster. The name Scottish Labour Party has been in use since 1994, before the Labour party structures in Scotland were known as The Scottish Council of the Labour Party (Bennie, Brand & Mitchell, 1997). The Scottish Labour party has traditionally been granted a relative autonomy from the central party structures, which might be caused among other things by the fact that historically the Labour party has enjoyed strong support in that part of Great Britain. Historically, the Scottish Labour Party has also been a strong supporter of Scotland's efforts to change its status within the United Kingdom. When the first, unsuccessful referendum about devolution took place in 1979, SLP took an active part in preparing it, and paid for those efforts on a national level when in the following year Conservatives won the elections to Westminster. After that the Conservative party under Margaret Thatcher changed the profile of British politics to strong national orientation, ignoring for a long time regional issues, and Scottish demands to recognize its unique circumstances within the country. The Scottish Labour on a political spectrum is seen as more towards the left, than the left-to center British Labour. That division has causes some amount of friction within the Labour party, at the same time demonstrating that in unique situation after devolution Scottish Labour Party is becoming a separate political body specifically representing Scottish interests. Another example of that separation can

be that since first elections in 1999 SLP leader is elected with no input from the central party (Laffin, Shaw & Taylor, 2004).

The Scottish Labour Party won both 1999 and 2003 elections. In 2007 and 2011, it came in second after the Scottish National Party (SNP). In 2011, however, the SNP's victory was much greater. In 1999 and 2003, SLP formed a coalition government with the Scottish Liberal Democrats, establishing majority government (Burnside, Herbert & Curtis, 2003). Of all the parties present on the political scene the Liberal Democrats are the closest in profile to Scottish Labour Party, however their electorate is sufficiently different to form a strong base crossing over different voter types. While Scottish Labour enjoys the strongest support among middle class and urban electorate, the Liberal Democrats have strong rural voters support.

Scottish Liberal Democrats

Similar to the Scottish Labour and Conservatives, the Scottish Liberal Democrats has representation both at a regional and national level. Contrary to the Scottish Labour Party however, the autonomy of the Scottish level of the organization is defined better and is much broader. The Scottish Liberal Democrats has a strongly decentralized structure. The national level is represented by a central party structure called the Federal Party. In addition, there are three regional party organizations in England (Liberal Democrats), Wales (Welsh Liberal Democrats, or Democratiaid Rhyddfrydol Cymru) and Scotland (Scottish Liberal Democrats) (Bennie, Brand & Mitchell, 1997). Each of these regional party structures is responsible for writing separate platforms for upcoming elections, electing candidates for those elections, raising campaign funds and selecting its own leaders. Compared to the other two parties present in Scotland and being a branch of

a national structure, the Scottish Liberal Democrats have the highest level of autonomy. The Liberal Democrats of which the Scottish Liberal Democrats are a part of, were established in its current form in 1988 from joining two formerly existing parties: Social Democratic Party and Liberal Party. The two were joined at a national level and developed a federal structure as a result of which regional structures enjoy levels of autonomy much greater than in less modern, more traditionally bound and complicated national parties (Holmes, 2007). The Scottish Liberal Democrats enjoy strong support in rural areas and the main source of their election strength lies in a few of their very strong candidates who as well known political activists get a lot of people to vote for them personally, and therefore, for the party. In all of the elections, the Scottish Liberal Democrats came in fourth. In 1999 and 2003 they formed coalition government with the Scottish Labour Party. In comparison to the SLP, the Scottish Liberal Democrats are considered more centrist, although not without a strong left preference.

Scottish National Party (SNP)

The Scottish National Party unlike two parties previously described was founded in Scotland, and since the first moments of its existence represented Scottish regional interests only, with no central structures overlooking its policies, and no direct tie to any other party present in the Scottish or British political arena. It was created in 1934 out of the Scottish Party and the National Party of Scotland. Before devolution, SNP competed at a national level representing Scottish interests in Westminster. Until 1970, however, only a couple of times had it met the required number of votes to get into British Parliament and both times it was made possible in by-elections. Since then the party grew stronger and after some amount of internal conflicts and organizational changes emerged

as a significant competitor on the Scottish political scene. SNP's main postulates evolve around Scottish Independence. Up until the 1970's, the party's main focus was not on its political profile in relation to left or right, but mostly on its nationalistic character. That changed around 1979 when one of the party fractions successfully pushed the party's ideological profile towards the left, establishing party's profile from then on, and making the competition with Labour more pronounced.

The Party's structure is local, regional with central level branches. The party leader is called the convenor, and the party's president which is position mostly symbolic. SNP's electorate is similar in profile to the Labour Party's electorate in Scotland comprising mostly of lower middle and middle class in urban areas. SNP took second place in both 1999 and 2003 elections and won 2007 elections (Herbert et al, 2007). That victory was significant for many reasons, one of which is that for the first time since devolution party in power was different that the one holding majority in Westminster. Scottish National Party was unable to form a coalition, but formed a minority government supported by Scottish Green Party. Finally in the 2011 election SNP won a majority government.

Scottish Green Party

Despite its small size and relatively weak parliament representation the Scottish Green Party has consequently placed as fifth to go into Parliament in all three of Scottish elections. In 2007 it was especially significant, since Green Party supported Scottish National Party's minority government which drew more attention to the fact that apart from their environmental postulates. Scottish Greens support Scotland's striving towards independence.

The Scottish Green Party was created as a result of an amicable division of United Kingdom's Green Party in 1990. According to the party's website Scottish Greens are guided by four principles in creating sustainable society: Ecology, Equality, Radical Democracy and Peace and non-violence (Scottish Green Party Official Website, 2011). All the listed above principles are considered post-materialistic issues and therefore the Scottish Greens are sometimes called a post-materialistic party by political party theorists (Müller-Rommel, 2002).

Scottish Conservative and Unionist Party

The Scottish Conservative and Unionist Party is a regional branch of Conservative and Unionist Party in Great Britain. The name of the party in its present form functions since 1965. Before that the Scottish regional conservative party was called the Scottish Unionist Party. Similar to the Scottish Labour Party and the Scottish Liberal Democrats, Scottish Conservatives prepare separate platforms for Scottish elections differentiating issues they emphasize in British elections from those important regionally. The autonomy of the Scottish Conservative Party structure is seen as smaller than it was before 1965, but still the party maintains its separate name, party platforms and chooses the party's leader as well as the candidates for the elections (Kellas, 1989). In Scotland, the Conservative Party has never enjoyed the level of support of Labour. Even when, in last election in 2010 Conservatives won national elections to British Parliament winning 55.72% of votes, only 16.75% of those votes came from Scottish electoral districts and added up to one seat in parliament, out of 308 that Conservatives won that year (Kimber, 2011). Since devolution this discrepancy is even more visible since the Scottish political

scene can be now seen as showing its divisions in a more pronounced way. Right now the party is trying to regain voter's confidence after coming in third behind Scottish Labour and SNP in all Scottish elections so far. According to literature and to party platform, one of the reasons the Scottish Conservative Party has lost its voters trust in that particular region on the United Kingdom is because it was seen as under appreciating Scottish demands of greater autonomy. After the successful referendum and devolution, it has become clear that the Scottish People wanted a greater degree of political separation from Great Britain, a demand that has not been emphasized in Conservative Party platforms. Because of this and the need to rebuilt stronger voter's base, the central party does not interfere much with Scottish Conservatives.

Method

The texts used for this study include the party manifestos of the five Scottish political parties that took part in all of the elections since devolution. The first election after devolution occurred in 1999. Afterwards three more elections took place; in 2003, 2007 and 2011. There were two reasons for choosing these five parties: first, they all took part in all Scottish elections, and second, they all managed to get enough votes to secure representation in the Scottish parliament as a result of all the elections.

The study uses the CATPAC software to analyze party manifestos. CATPAC is a computer program designed to analyze text (Woelfel & Stoyanoff, 2007). CATPAC scans the text, identifies which words co-occur, which are used most often, and in how many cases each word occurs. A sliding window whose size is determined by the researcher determines the cases. Window size determines how many words together are

analyzed in one mini-block. Then, the program slides *k* number of words (again, determined by the researcher) and analyzes next window (Doerfel & Barnett, 1996). In this study, the window size was set at 7 words, with a slide size 1. At the same time CATPAC analyzes the number of most frequently used words, which in case was determined to be the 100 most frequently used words. All party documents were analyzed in full, excluding only the table of contents and the acknowledgements. The platforms' preamble and remaining text were included.

The first step in the study was to read through all used texts and prepare them for analysis. All files were converted to one format (.txt file) and table of contents along with all the graphic content were removed. Five parties' platforms were used from all four Scottish elections in 1999, 2003, 2007 and 2011, which added up to total of twenty documents. In addition, one document was created for every election year, including all party manifestos from that year (for example ELECTION 1999 file included manifestos used by all five parties only in 1999 election), as well as one for each party, including all of that party's manifestos from all election years (for example GREEN ALL file included green party manifestos from 1999, 2003, 2007 and 2011 election years). At the end the file including all parties' manifestos in all elections was created. That brought the total number of created files to 30. Utilizing CATPAC's default exclude file, the text was edited to remove a list of articles, prepositions, conjunctions, and transitive verbs that did not contribute to the meaning of the text (e.g., and, to, the, that). In some cases different forms of the same word were treated as one form of the word and some words were combined or modified to reduce error (Kwon, Barnett & Chen, 2009). The decision as to which words should be combined in which platform was based on the initial cluster

analyses and analyzing the context. Words with the same root were combined if they
were members of the same cluster, that is they shared the same relationship with the other
words in the manifestos. The words combined and treated in further analysis as one were:
Scottish, Scotland's and *Scotland* as one word, *community* and *communities*, *school* and
schools, *businesses* and *business*, *year* and *years*, *need* and *needs*, *development* and
develop, *economic* and *economy*, *United Kingdom* and *UK*, *National Health Service* and
NHS, *Scottish National Party* and *SNP*, *environment* and *environmental*, *policy* and
policies, *standard* and *standards*, *high* and *higher*, *invest* and *investment*, *council* and
councils, *nation* and *national*, *drug* and *drugs*, *patient* and *patients*, *tax* and *taxes*, *invest*
and *investment*, *fund* and *funding*. Certain symbols (£, € and $) were also removed. The
second step was to prepare different sets of documents for analysis. First every party's
manifesto, from each election was turned into a CATPAC document that way twenty
separate dendograms were created, mirroring each party's most common used words for
each election, and issues central for each of the manifestos individually. The second set
of documents was created out of the platforms of all the parties from each election. Four
documents were created, one for 1999, 2003, 2007 and 2011 "election file". The third set
of documents was a consolidation of all platforms on one party from all the elections, that
way issues central to particular parties could be revealed. Six documents were created in
this step, Scottish National Party (SNP), Liberal Democrats, Labour, Conservative, Green
and All file.

The second step was to analyze word clusters that emerged in all the documents
and compare the clusters between each other. CATPAC reports the semantic structure
using Ward's cluster analysis, which shows discrete clusters among the words. If these

words cluster hierarchically in the outputs, meaning can be inferred (Doerfel & Connaughton 2009) about themes/clusters most common within the body of text. The most often used words were then compared on several levels. In order to compare word frequencies ten matrices were created. Those would be later used for visualization of data, but also created matrices allowed comparison of word frequencies between parties in each election year. The frequencies of words that were chosen for the matrices were determined by including only words used more than .6% throughout the document. Since different manifestos have different length, using frequencies as a selecting mechanism might favor longer manifestos, while using percentages ensures that regardless of frequencies words used more than .6% will be included. Based on these criteria ten matrices were prepared: One for each election year, with top percentages of words used by five parties. The words used in the election matrices were determined by examining the election dendogram for that year, with the cut-off point at .6%. Later, each of the party's dendograms for that year was examined and frequency with which each of the parties used a particular word was indicated. The number of words included was 61 for 1999 elections, 69 for 2003 elections, 64 for 2007 elections and 63 for 2011 elections. Five party matrices were created. The dendogram with all manifestos of a particular party was first used to establish which words will be included, based on the same, 6% criteria. Then, individual dendograms from each election year was compared with the base file, with indication of word frequencies included for each election year. Files for each parties included 59 words for Conservative party, Green party and Labour party, 65 for Liberal Democrats and 55 for SNP. One more file created as a matrix included frequencies for all parties in all elections, and it included 62 words.

After obtaining the word frequencies and clusters and making the matrices next step was to analyze visual representation of data. UCINET/NETDRAW was implemented for that purpose (Borgatti, Everett & Freeman, 1992). UCINET/NETDRAW is a program for visualizing both semantic distances between nodes and 2-mode social network data. It can analyze multiple relations simultaneously, and can use node characteristics to set colors, shapes, and sizes of nodes. Pictures can be saved in metafile, jpg, gif and bitmap formats (Analytic Technologies, 2011). All data visualizations were handled in NETDRAW, visual application of UCINET.

First, networks were multiplied by their transposes to create party by party matrices where each cell indicated the number of shared words one for each election year. These matrices then underwent metric multidimensional scaling, in which each node (party) was located on a series of orthogonal reference dimensions (Jang & Barnett, 1994). Distances between nodes were then calculated using Pythagorean theorem. The closer the nodes (parties) were to each other, the more words they shared and the greater the overlap in the relations among the word, hence the more similar the manifestos in meaning. Distances between parties in a party by party matrix were calculated for each year in which there was a coalition government. The assumption behind that step was that parties that entered a coalition would be sharing most words in their manifestos for that year. The distances between parties were extracted from UCINET.

Also, the multidimensional scaling revealed the projected location of each party in two-dimensional space such that the party that was most central (used most words associated with issues central to this year's election) was closest to the origin of the space (Woelfel & Fink, 1980). The measure of centrality is defined as the average distance of

one node to all others, with the node sharing the most words is the most central (Jang & Barnett, 1994).

Two other properties were analyzed based on the semantic network analysis. First, tie strengths were compared to explore words central to each election and how often each of the parties used those words (how strong is the tie between each of the parties and the central words). Second, eigenvector centrality was calculated in order to test if centrality in the network corresponds with the proportion of votes that party obtained for each election year. The normalized eigenvector centrality is the scaled eigenvector centrality divided by the maximum difference possible expressed as a percentage. A table of positive eigenvalues is calculated by the UCINET program and the values are placed in a descending order. The table gives the information on how "dominant" the largest eigenvalue is and provides the percentage and cumulative percentage of the total eigenvalue sum for each eigenvalue (Boncich, 1972). Eigenvector centrality is based on the loading of the nodes on the largest eigenvector. It can be thought of as a weighed degree measure in which the centrality of a node is proportional to the sum of centralities of the nodes it is adjacent to (Borgatti & Everett, 1997). Again, the analysis was repeated for each election year, which resulted in four visual representations of words used 1999, 2003, 2007 and 2011 elections.

Results

1999 Elections

The Labour Party won the 1999 election with 43.4% of the seats and formed a coalition government with the Liberal Democrats. Labour received 56 MSP's, which was the plurality that year, but not sufficient to win the absolute majority of seats, which

would have been 65. The Scottish National Party (SNP) came in second with 35 MSPs (research paper by Scottish information center). The Liberal Democrats and Conservatives came third and fourth with only one seat difference. The Conservatives obtained 18 MSPs while the Liberal Democrats received 17. The Green Party came last with only one seat. The number of acquired seats corresponded with the proportion of votes received. Labour got 38.8% of constituency votes and 33.6% of the regional lists votes. SNP obtained 28.7% constituency votes and 27.3% regional lists votes. That added up to 27% of available seats. Conservatives and Liberal Democrats have obtained 14.0%, and 13.2% of seats respectively.

Looking at graphic representation of semantic distances between the parties, as represented through metric multidimensional scaling, the Labour Party appears much closer to SNP then to the Liberal Democrats. The Green Party seems to be furthest away from all of its competitors and the Conservatives seem closer to the Labour-Liberal Democrats-SNP trio than Green party, but still further away than the mentioned three.

Figure 1

1999 Election, Graphic Representation of Semantic Distances in Metric Multi Dimensional Scaling (MDS)
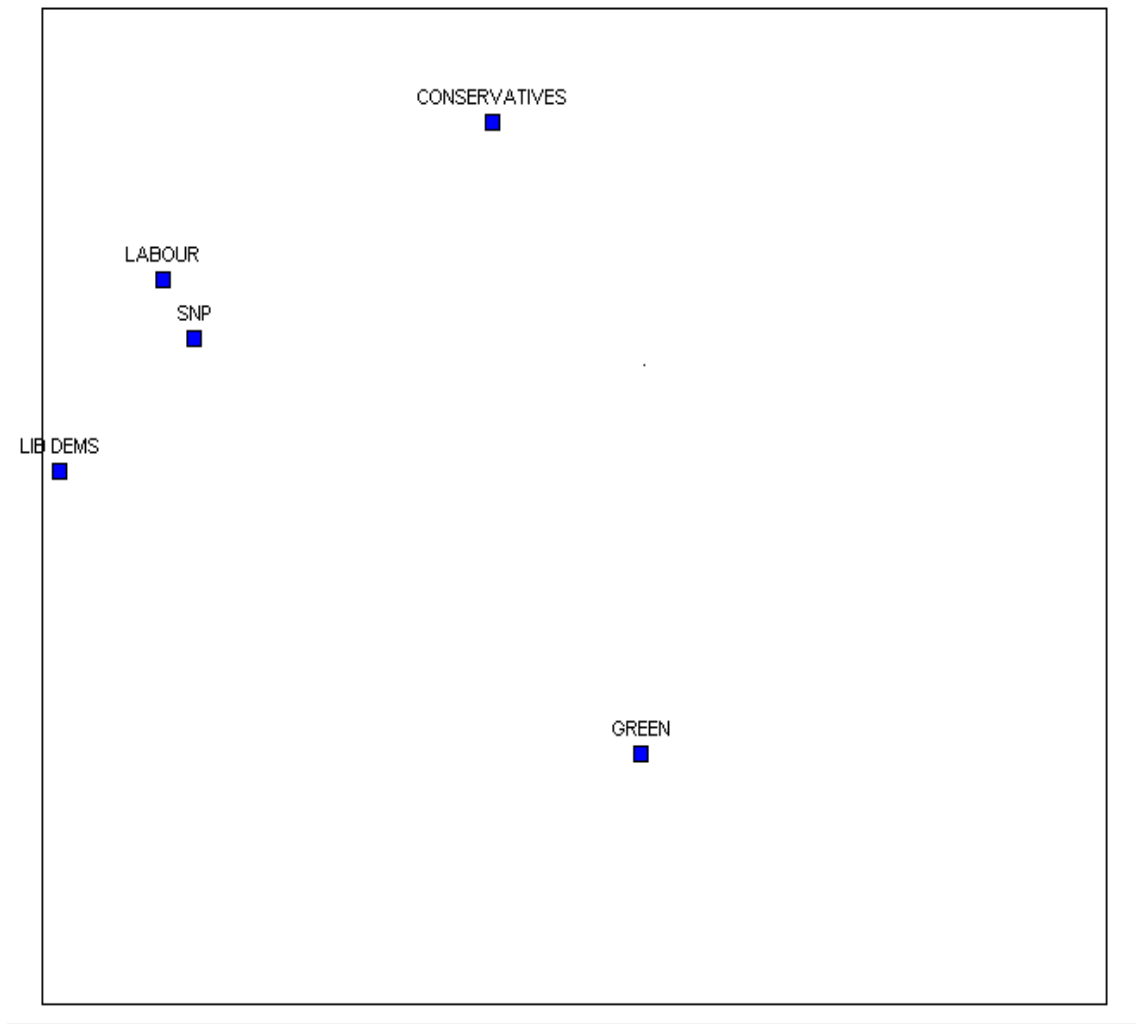
After calculating distances using parties coordinates in the two dimensional space using the Pythagorean theorem it turns out that SNP is closer to Labour (.087) then are Liberal Democrats (.280). When presenting the distances, no units are given because the calculations of distance are an estimation resulting in converting a multidimensional model into two-dimensional-space and are used as symbols to help present distance of nodes from each other. Distances given as a result don't mirror any particular/measurable distance in two-dimensional space, and are just a symbol of how many words parties

share between each other's manifestos. Parties which are *closer* to each other in terms of semantic distances share more words and meanings then parties which are further apart.

The complete view of with all parties' distances from each other in metric MDS is presented in Table1.

Table1

Semantic Distances between Parties in 1999 Election

	Conservatives	Labour	SNP	LibDems	Green
Conservatives		.452	.463	.699	.846
Labour			.087	.280	.853
SNP				.237	.770
LibDems					.799

Stress level, which is a measure of goodness of fit, was .078, below the most often accepted value of .2. The lower the stress (0 = perfect fit), the better. Generally, stress levels below .1 are considered excellent while levels above .2 are considered unacceptable (Borgatti, Everett & Freeman, 1999). The stress value estimates the difference between original distances and the distances in two-dimensional space, as presented in Figure X. Bonacich normalized eigenvalue centrality measure (Bonacich, 1972), based on a 0-100 range, indicates that SNP is the most central of all the parties in the 1999 Election (89.05). That means that SNP presented the most issues central in the semantic space for that year, relative to all the other parties. Second most central is the Labour Party with a centrality of 76.7, followed by Liberal Democrats with 62.8. This

measure of centrality accounts for 94.2% of variance in 1999 election data. Table with

eigenvector centrality values for all parties for each election year can be found in Table 2.

Table2

Eigenvector centrality measures for all parties for each election year

	Green	*Conservatives*	*SNP*	*Liberal Dems*	*Labour*
1999	**16.00**	**44.59**	**89.05**	**62.8**	**76.7**
2003	**37.04**	**43.09**	**74.99**	**59.14**	**87.46**
2007	**33.39**	**26.84**	**56.37**	**81.95**	**90.95**
2011	**22.09**	**26.46**	**103.12**	**57.24**	**70.02**

The two-mode network illustrating words and parties on the same graph provides

some interesting visualizations. First, all of the parties' strongest ties are with the word

Scotland. However, the parties that had the strongest tie with the words *Scotland* were

Labour and SNP, the two parties that received the majority of votes. Second, the

Conservatives, the party which received only half of the votes of SNP and came in third,

had most often mentioned competition. That means the Conservatives was the only party,

which at tie strength 77 showed a tie with the word *Labour*. This might suggest that

negative campaigning didn't bring positive results in Scotland's politics.

Figure 2

1999 election two mode words by party network, tie strength 70
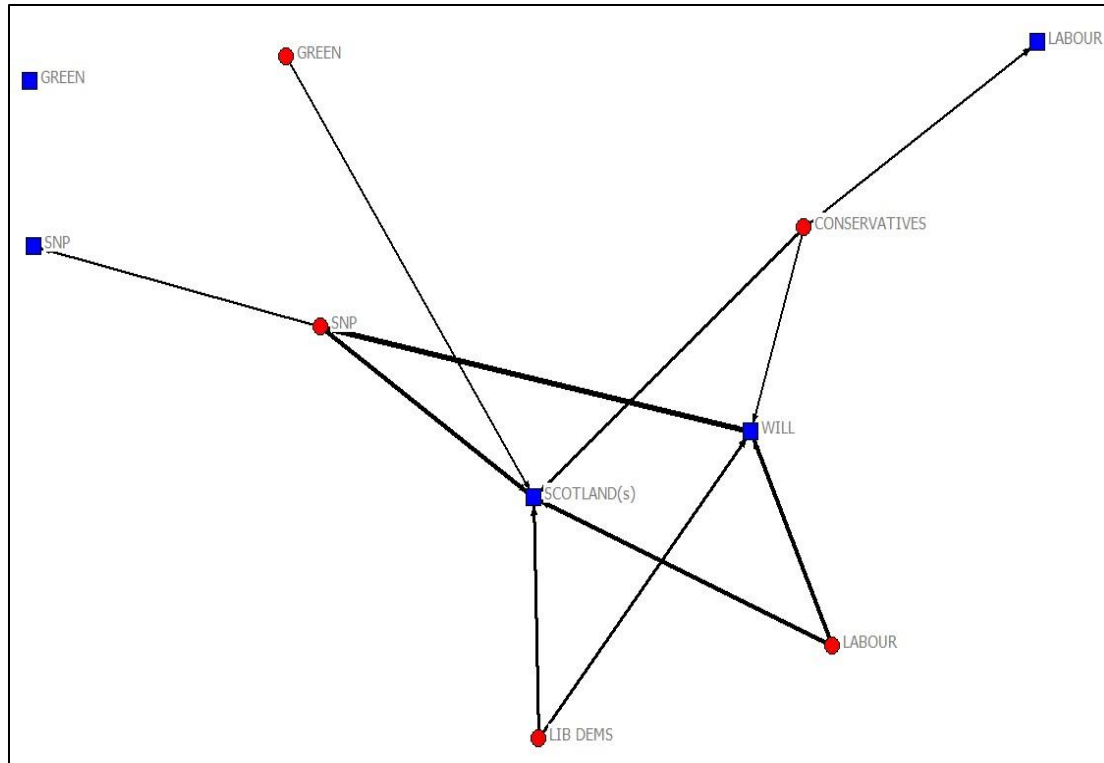
Based on the analysis of the semantic network for the 1999 election, the coalition that formed the government could not be predicted based solely on semantic network. Therefore, the second hypothesis was not supported. The parties that were closest to each other in terms of shared words and mentioned issues were the SNP and Labour, while parties, which entered the coalition this election year, were Labour and the Liberal Democrats.

First hypothesis was not supported. The analysis of centrality shows that the SNP was closest to the center of the network. This suggests that its strong position as the only regional level party and thus, one considered closest to issues crucial to Scottish elections, and therefore Scottish society. SNP's most central position indicates that proportion of votes obtained does not indicate centrality. However, the Labour Party, which in terms of centrality came in second after SNP was the party that obtained the

largest number of votes, which means that issues mentioned in their manifesto were second in terms of centrality and interconnectedness in that election year.

Also, after setting tie strength at 25 and eliminating the words shared by <u>all</u> four major parties, and eliminating the words only one party uses and doesn't share, SNP shares the most words with at least one other party. SNP shares 11 words with at least one other party, while Labour has 9, Liberal Democrats have 7 and the Conservatives have 3. The rationale for eliminating the words shared by all four major parties is that these words do not differentiate the parties. They include such words as *Scotland*, *will*, and *parliament* and represent boilerplate in the manifestos. The reason why Green party was not considered in that particular analysis is that after setting the tie strength at 25 and eliminating all the words that are shared by all five parties, Green party showed no connections left with any of the other parties, and became an isolate connected only to the word *Green*. Figure 2 represents revised semantic network, with all the discussed above changes applied.

Figure 3

1999 election two mode network, tie strength 25, with words shared by four major party eliminated
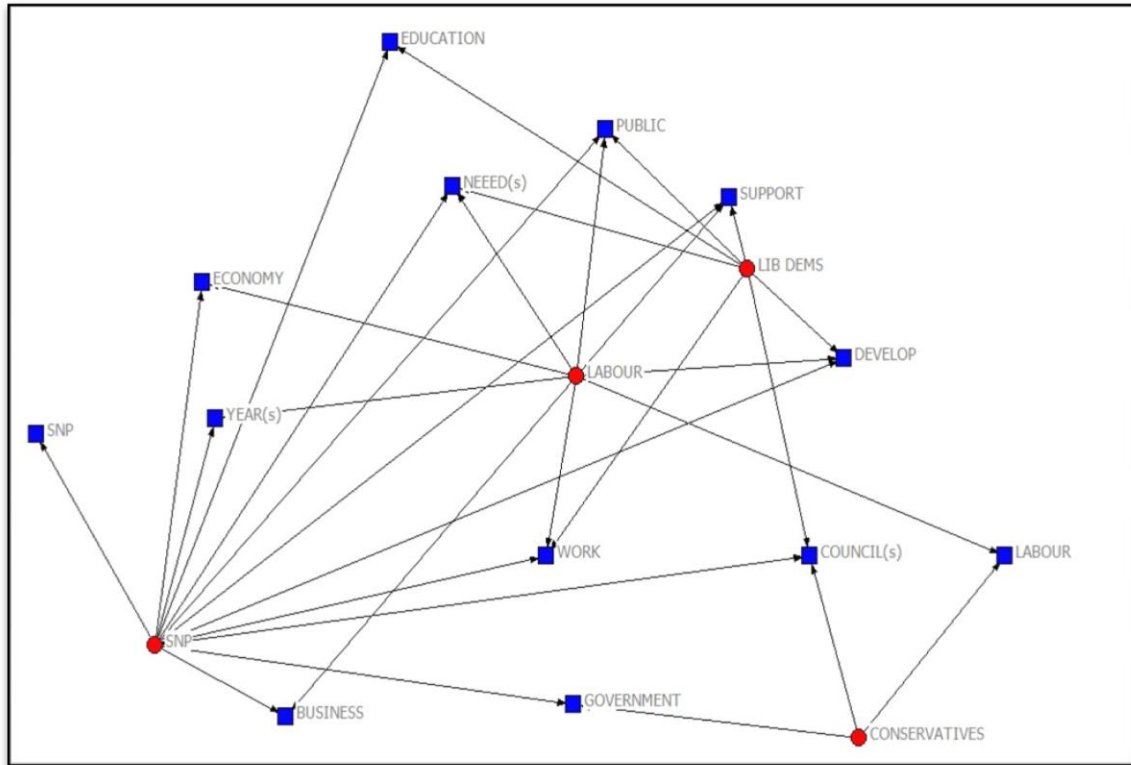
2003 Election

2003 election results in many ways maintained the status quo of the previous election. The Labour Party once more obtained the largest number of votes, acquiring 38.8% of available seats. Once again, SNP came in second, even though compared to a previous year it lost voters' support. In 1999, SNP obtained 27% of available seats, and in 2003 that percentage dropped to 20%. In terms of constituency votes Labour obtained 34.6%, while SNP received 23.8%. Regional lists percentages were 29.3% and 20.9% for Labour and SNP respectively. The Conservatives and Liberal Democrats maintained exactly the same percentages of seats, 14.0% of available seats for the Conservatives, and 13.2% for the Liberal Democrats. The number of MSP's each party received in that election year was 50 for the Labour Party, 27 for the SNP, 17 for the Liberal Democrats, 18 for the Conservatives, and 7 for the Green Party. Once again the Labour Party formed a coalition

government with the Liberal Democrats and Jack McConnel of the Labour party maintained the position of First Minister in that government.

The graphic representation of distances between parties in metric MDS again seems to place the Labour Party closer to SNP than Liberal Democrats, but this time Labour and SNP are not as close to each other as they appeared in 1999 election visualization. The Conservatives once again seem removed from the Liberal Democrats-Labour-SNP trio, this time, however, the Green Party's distance to those three seems almost equal as this of Conservatives.

Figure 4

2003 Election, Graphic Representation of Semantic Distances in Metric Multi Dimensional Scaling (MDS)
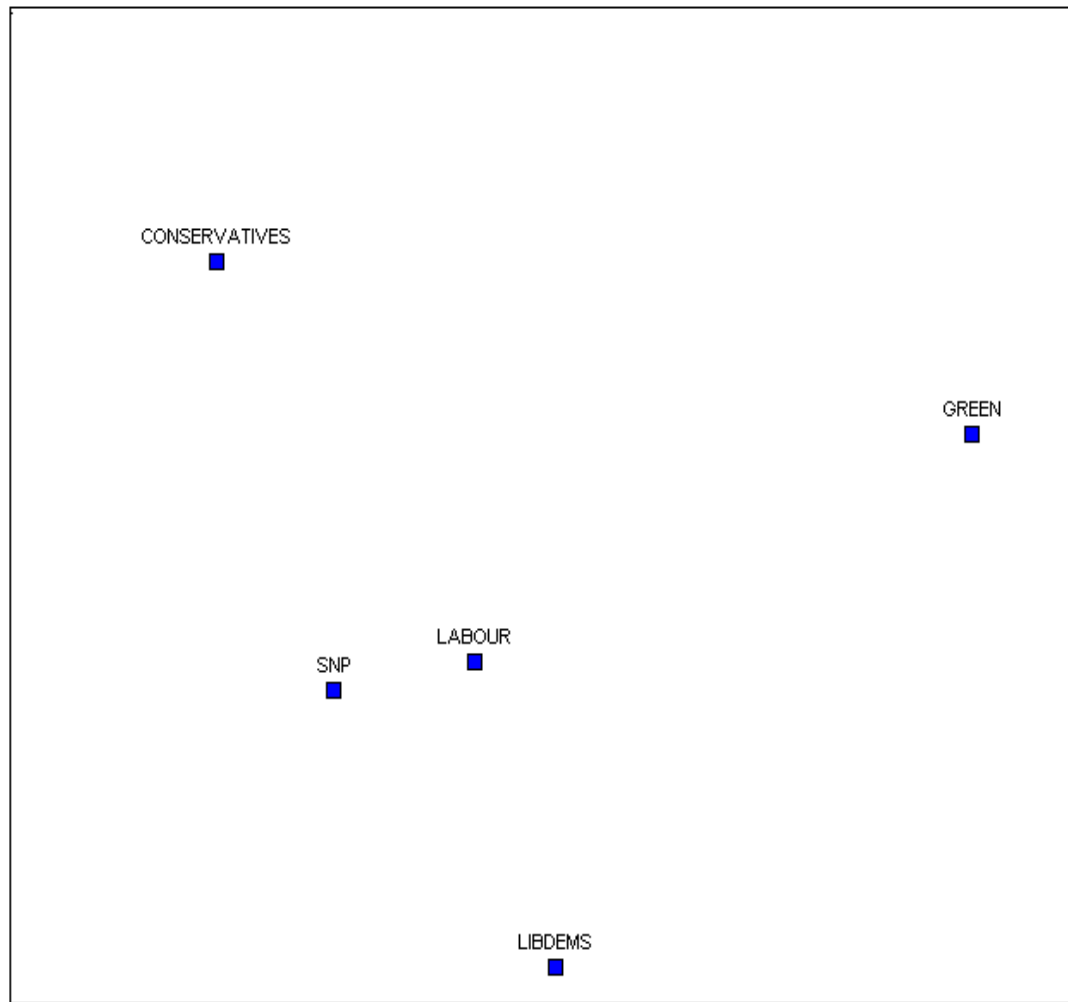
The calculated distances confirm that SNP is closer to Labour (.17) than are Liberal
Democrats (.39). SNP is not that much further from Liberal Democrats than Labour is
(.43). The distance between Conservatives and SNP which is the party they have the
shortest distance to .58, while the Green Party and Labour (the party closest to the
Greens) are .65 apart, which shows that the difference between Conservatives and Green
in terms of peripheral position is not great. Once again, the Liberal Democrats, SNP and
Labour share the most words and issues, while despite similarities in number of obtained
votes Conservatives seem to be left out of this triangle.

Complete view of with all parties' distances from each other in Metric MDS is presented in Table3.

Table3

Semantic Distances between Parties in 2003 Election

	Conservatives	Labour	SNP	LibDems	Green
Conservatives		.585	.551	.964	.912
Labour			.170	.390	.650
SNP				.431	.814
LibDems					.828

The stress value for Metric MDS for the 2003 election was .124. The centrality measure points to Labour party with level of centrality calculated at 87.5, which mirrors the fact that SNP did not address issues most central to that year elections and therefore their voter support dropped in comparison with previous year. The SNP is second most central party for that year with at 74.9, followed by the Liberal Democrats at 59.1 and the Conservatives at 43.1. The Conservatives peripheral position seems to confirm that they have less in common with their competitors in terms of language used in their manifestos than the three major players: Labour, SNP and Liberal Democrats. The Green Party in 2003 has centrality of 37, which is a big jump from 16 in 1999. This is also mirrored in

their increase in obtained MSP's (1 in 1999 and 7 in 2003, which considering party size and representation is a rather significant change). This measure of centrality accounts for 90.1% of variance in 2003 election data.

When looking at a two-mode words by party network from 2003 election first thing that is noticeable is that when it comes to common word usage, the Green Party formed a sort of sub-network, not sharing many words with other parties, and even shared words are usually shared only with one other party at a time. This placement, along with its consistent small measures of centrality, low vote count and small number of MSPs establishes their position as a peripheral party, ideologically separate from the others fighting for leadership.

In terms of sharing ties with other parties, the Liberal Democrats have the most connections with other parties. After eliminating words common to all five parties at 25 words tie strength, and eliminating words parties do not share with any other party the Liberal Democrats have the most words that they share with any other party (33). Labour shares 30 and SNP shares 25 words with another party. The Conservatives have 17 of those connections and the Green Party 7. The fact that the Liberal Democrats share a lot of words with other parties, but fall third in centrality, might be caused by the fact that the applied method of analysis does not account for length of the manifesto, and Liberal Democrats usually have manifestos longer in page length than their competitors. That means that even though in terms of numbers they will have more common words with their competitors, the weight of those words in terms of interconnectivity and centrality of issues they signify is weaker that the manifestos of Labour and SNP.

Figure 5

*Two mode words by party network, tie strength 25, words shared by all five parties
eliminated*
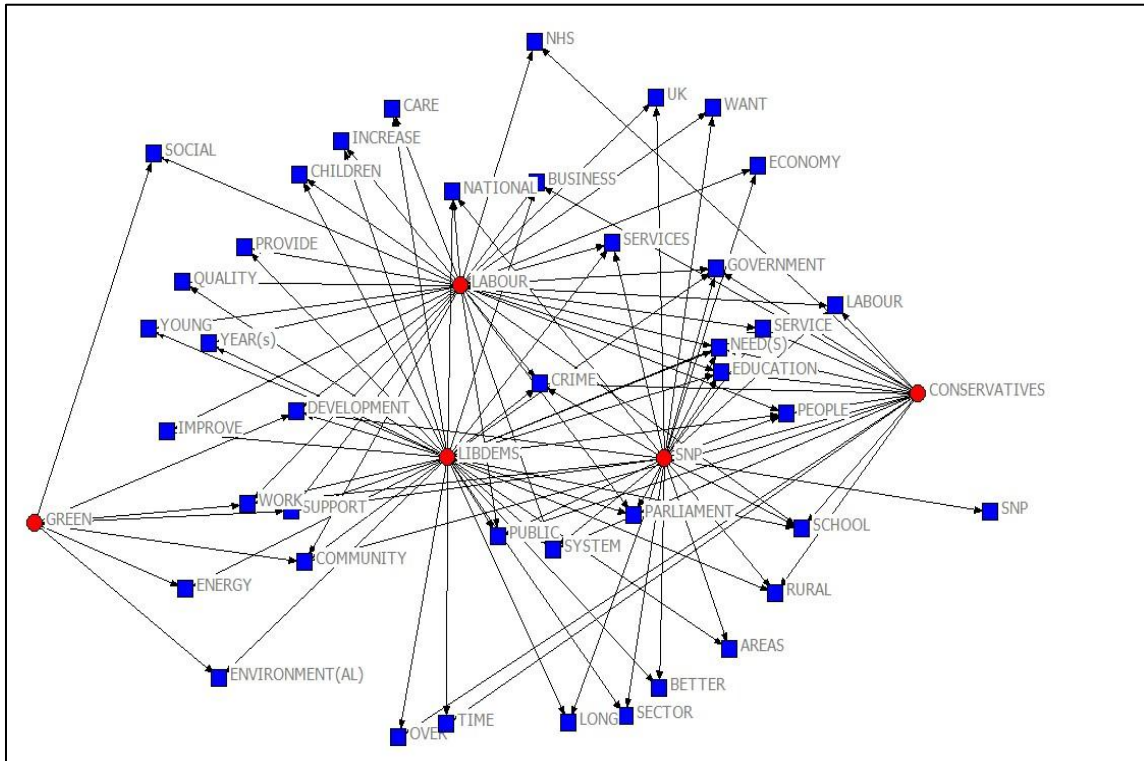
Consistent with the 1999 election the three parties that were considered the

strongest competitors and any potential coalition partners were once again in the center of

the network. This might indicate that the answer to the first research question is

affirmative. Semantic distances mirror parties commonalities, even if predicting

coalitions based solely on shared meanings proved so far not possible. The second

research question, as well as, the second hypothesis were not supported. In the 2003

elections, the coalition could not be predicted based on semantic similarities of party

manifestos. However, contradictory to the previous year (1999), centrality in 2003 was indicative of the number of obtained votes, pointing to the Labour Party as the most central. That gives support to the first hypothesis. It seems that semantic structure similarities do not indicate coalition partners, however they can be indicative of central and peripheral positions in power struggles, as well as importance of issues discussed in the manifesto. More implications of that conclusion will be provided in the discussion section.

2007 Election

The 2007 election brought a big change in Scottish politics. SNP regional level party that in past election seemed to have lost voters' support won the election and formed a minority government with the support of the Green Party. SNP won with a narrow margin (47 seats to Labour's 46) and with a small percentage difference (36.4% to Labour's 35.7% of available seats). However, in comparison to previous years, the number of seats SNP won nearly doubled (27 to 47 seats), while the number of seats maintained by Labour dropped by 4 (50 seats in 2003 to 46 in 2007). The Conservatives came in third with 13.2% available seats, which amounted to 17 MSP's, distancing Liberal Democrats one again by only one seat. The Liberal Democrats obtained 16 seats, which amounted to 12.4%. The Green Party dropped significantly in relation to previous year, maintaining only 1.6% available seats, compared to 5.4% in 2003.

The graphic representation of semantic distances in 2007 election year shows some very interesting changes in comparison to previous years. The SNP seems to have less in common in terms of shared words' use with Labour and Liberal Democrats, who

in turn appear much closer to each other than in previous years. Both the Conservative and Green parties maintained their peripheral position with the Green Party a little closer to the Liberal Democrats and Labour with the Conservatives further away.

Figure 6

2007 Election, Graphic Representation of Semantic Distances in Metric Multi Dimensional Scaling (MDS)
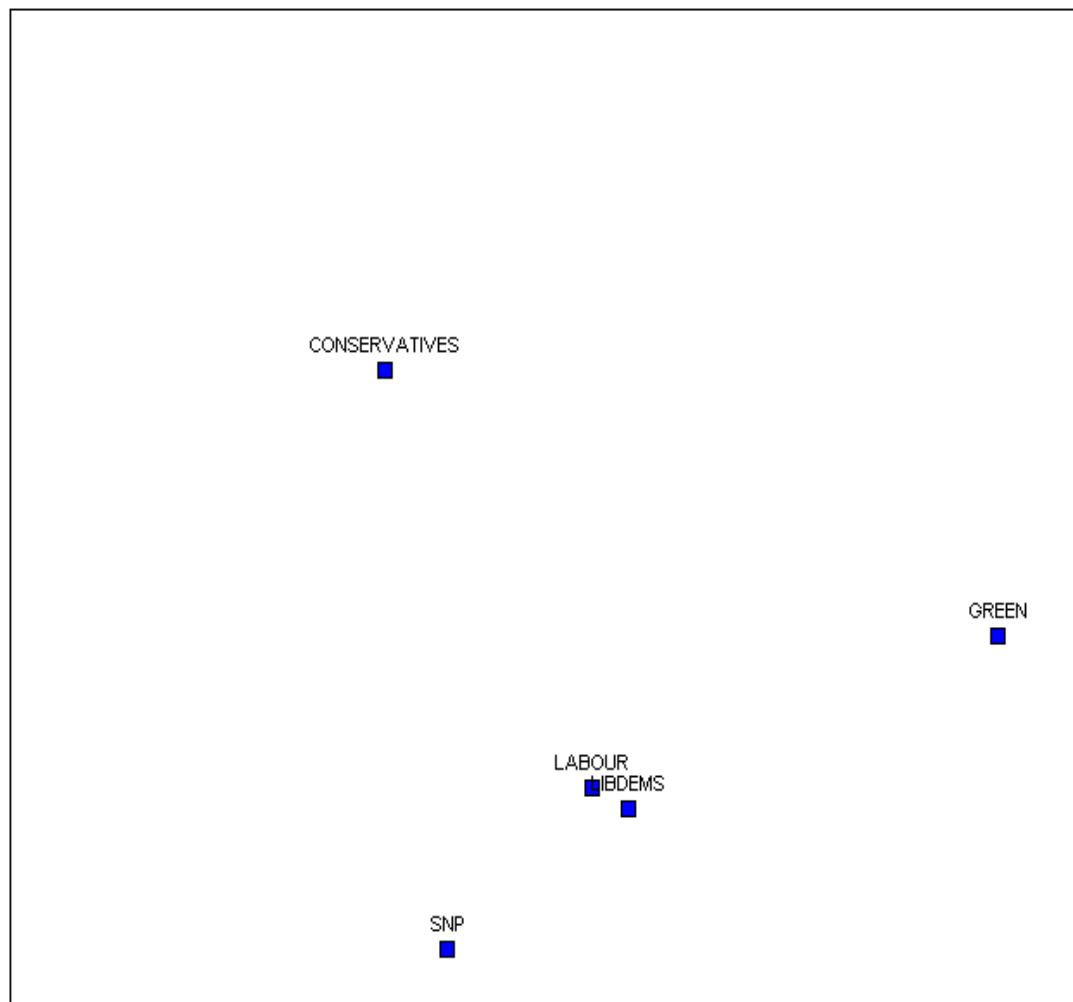
Calculating the distances confirms the visual observation. Of all the parties, Labour and the Liberal Democrats are the closest to each other (.055). The SNP is almost equally distanced from both of those (.279 from Labour and .293 from the Liberal Democrats). The Conservatives are .612 away from their closest competitor, which is Labour, and the Green Party is .512 away from the Liberal Democrats, the party to which they have the shortest distance. The stress value for the 2007 election semantic distances was 0.096. Calculated distances between all the parties can be found in Table 4.

Table4

Semantic Distances between Parties in 2007 Election

	Conservatives	Labour	SNP	LibDems	Green
Conservatives		.612	.775	.658	.839
Labour			.279	.055	.543
SNP				.293	.802
LibDems					.512

The stress value for Metric MDS for the 2007 election was .096. The amount of variance explained by the centrality measure was 91.6%. The measures of centrality are perhaps the most unexpected results in 2007 election analysis. The SNP, the party that obtained the largest margin of votes came third in terms of centrality within the network. The most central party was Labour with centrality measure of 90.1. The Liberal Democrats were second at 81.9, and SNP was 56.4. This might indicate a change in

voters' interest. The issues that were most talked about in the manifestos, might not have been issues that the Scottish people most cared about that year. Therefore, the party that obtained the most votes was the party that discussed issues potentially just emerging in the political discourse. Therefore, in 2007 election centrality was not indicative of voters' support.

Predicting a coalition based on semantic distances would not have been possible. SNP did not form a coalition that year, initially entering talks with Liberal Democrats, later, however, settling for a minority government with Green Party support. The Green Party that supported the SNP had a centrality of 33.4, which for the first and only time was not the least central. Their centrality was 33.4, which put the Greens ahead of the more peripheral Conservatives (26.8).

Looking at two mode network representing 2007 election data, one of the limitations of the study comes to mind. SNP, party which had obtained the highest number of votes, seems no to have related to many issues salient to the other parties. At tie strength set at 80, to flush out only the strongest, most often mentioned words, party that seems most connected were the Liberal Democrats. While sharing some words with both Labour and SNP Liberal Democrats maintained quite a few individual issues that they mentioned on their own. The same situation is found looking at Labour's network. SNP in that comparison seems connected only to few of the shared words and have no "independent" words. Yet SNP won the election and had therefore captured most pressing issues on voters mind. That might bring the conclusion that length of the manifestos distorts perception when looking at two mode network. The Liberal

Democrats have manifestos much longer in page length and therefore wordier that SNP.

Future studies should take that difference into account.

Figure 7

Two mode words by party network, tie strength 80
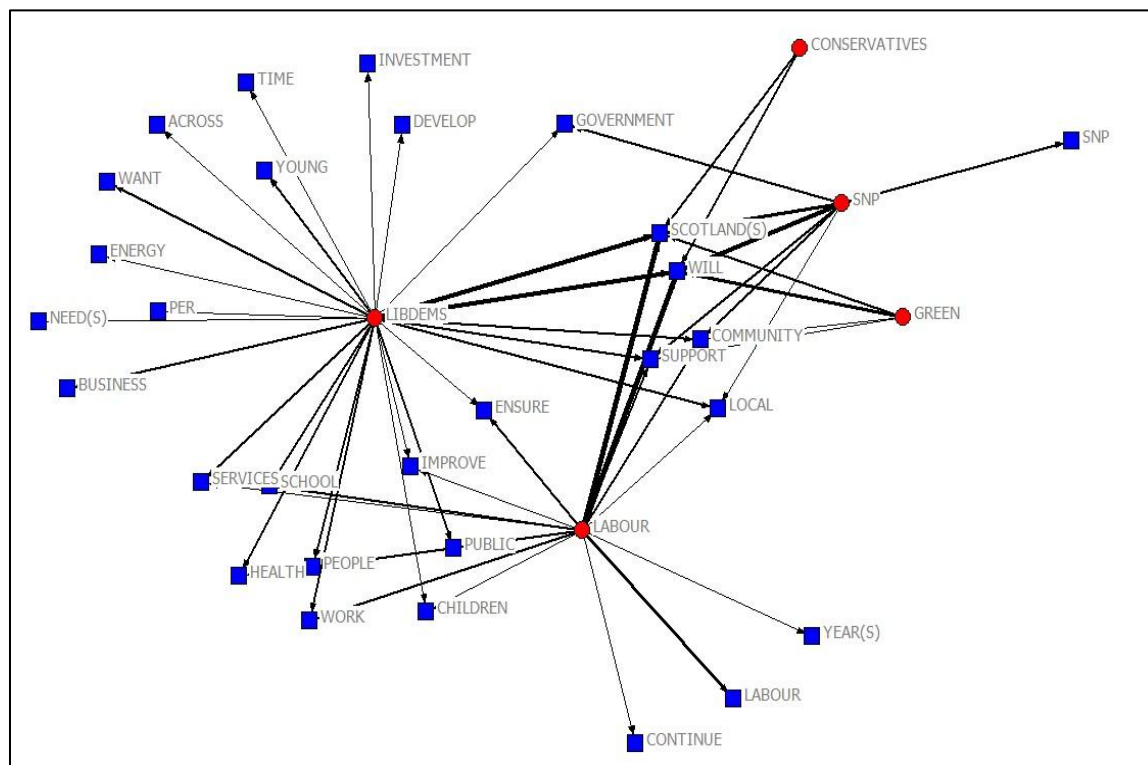
Election 2011

In 2011, the Scottish National Party was the first party since 1999 to win the

election by a large enough margin and form a majority government without the need to

seek coalition partner to secure majority in parliament. In many ways, the 2011 election

changed the existing dynamic for almost all of the actors involved. The SNP won the

election securing 53.5% of all seats, amounting to 69 MSP's. Labour came in second, but unlike the previous election when the difference between winners and the runner up were few seats, this year Labour party received about half the number of MSP's that SNP won, securing only 37 seats, which amounted to 28.7% of all seats, and 32 seats less than SNP. The third party in the vote count was the Conservatives with 15 seats (11.6%). Scottish Liberal Democrats found themselves in a drastically weakened position securing only 5 seats, which amounted to 3.9% of all seats available and represented two thirds drop in comparison to the previous election, when the Liberal Democrats secured 16 seats. The Green Party once again got only 1.6% of votes and secured 2 seats, which remained unchanged from the previous election.

In terms of semantic distances, Labour shares the most words with the winning SNP, the Liberal Democrats seem more distant than in previous years and even though they are a little closer to SNP then to Labour they are removed and are no longer close to the Liberal Democrat, Labour, SNP trio, that could be observed in the years 1999 and 2003. The coalition could not be predicted based on distances, because the SNP secured majority and did not form a coalition government. The stress value for the two-dimensional multidimensional scaling was below required .2 at .122.

Figure 8

20011 Election, Graphic Representation of Semantic Distances in Metric Multi

Dimensional Scaling (MDS)
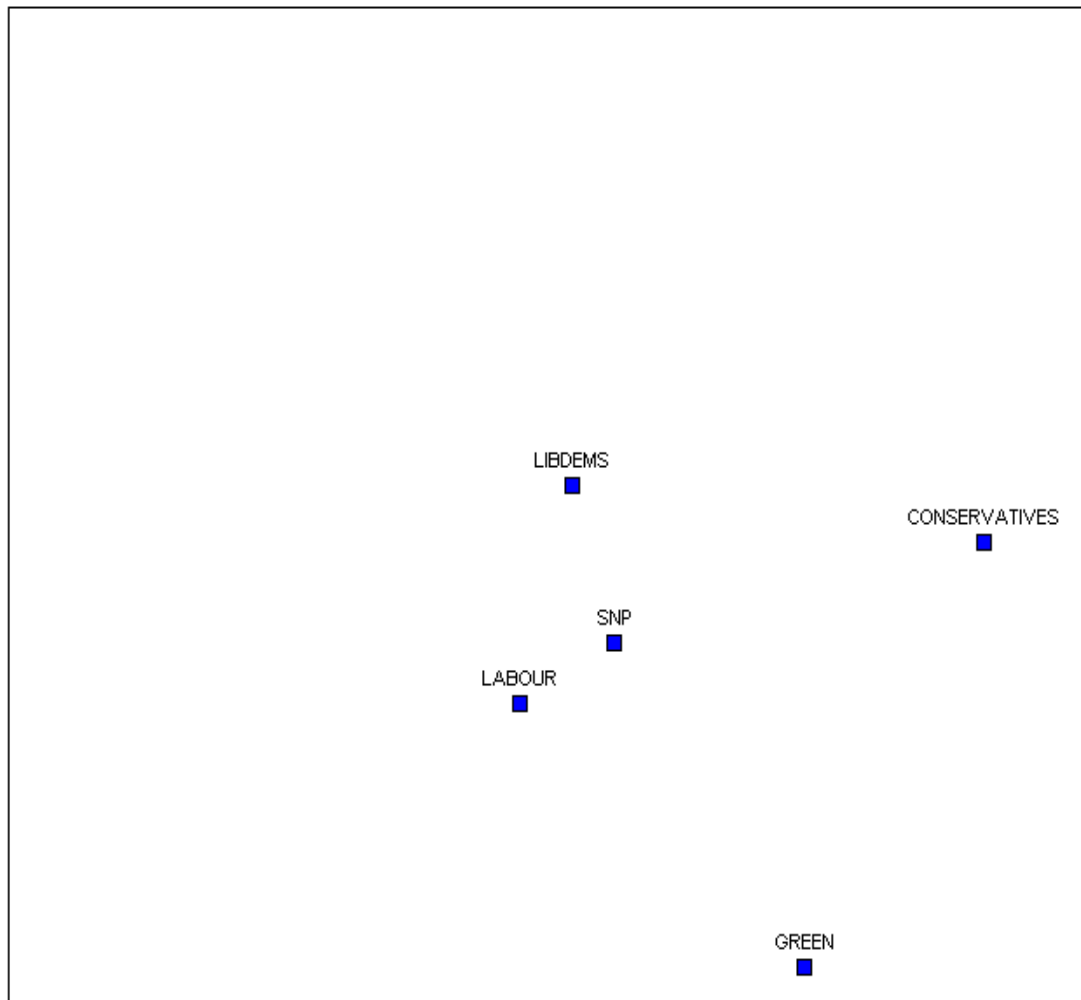
Calculated distances show that even though Labour and SNP are sharing most words out of all the parties, their overlap wasn't as great as was Labour and the Liberal Democrats the previous year (.055 versus this year's .167 between SNP and Labour). No parties were particularly close to each other in 2011, and that seems to be mirrored in the fact that the SNP distanced competition by a large margin, and didn't form a coalition. All distances are provided in Table 5.

Table 5

Semantic Distances between Parties in 2011 Election

|	Conservatives	Labour	SNP	LibDems	Green
Conservatives		.745	.581	.626	.721
Labour			.167	.362	.604
SNP				.26	.6
LibDems					.857

In 2011, the order of centrality corresponded with proportion of obtained votes with the SNP in the most central position at 103.11, Labour second at 70.02, the Liberal Democrats at 57.24, the Conservatives at 26.46 and the Green Party 22.09. The variance explained by this measure was 93.4%. Therefore, the 2011 election year data supports first hypothesis. The second research question and second hypothesis are not applicable to 2011 data, since SNP formed a majority government and did not form a coalition.

Looking at the two mode words by party network representing 2011 election year, it is clear that SNP has a lot of words in its manifesto that it does not share with any other party. Labour and Liberal Democrats seem interconnected with other parties, while maintaining some issues they talk about individually. Conservatives seem to lack "independent" words, and share most words visible in the network with at least one other party. The fact that SNP had very high centrality despite sharing less words with others then Labour and Liberal Democrats, might indicate their strong position in establishing

issues central to all parties, as well as high salience of issues they do share. At the same time, while sharing interest in crucial issues with other parties, SNP has been effectively pursuing issues specific to their party's national character therefore making words they do not share also salient for voters, and for 2011 election. In a way it might mean they have strengthen their position enough to make their issues most central, even though other parties don't mention those issues as much.

Figure 8

Two mode words by party network, with tie strength set at 25
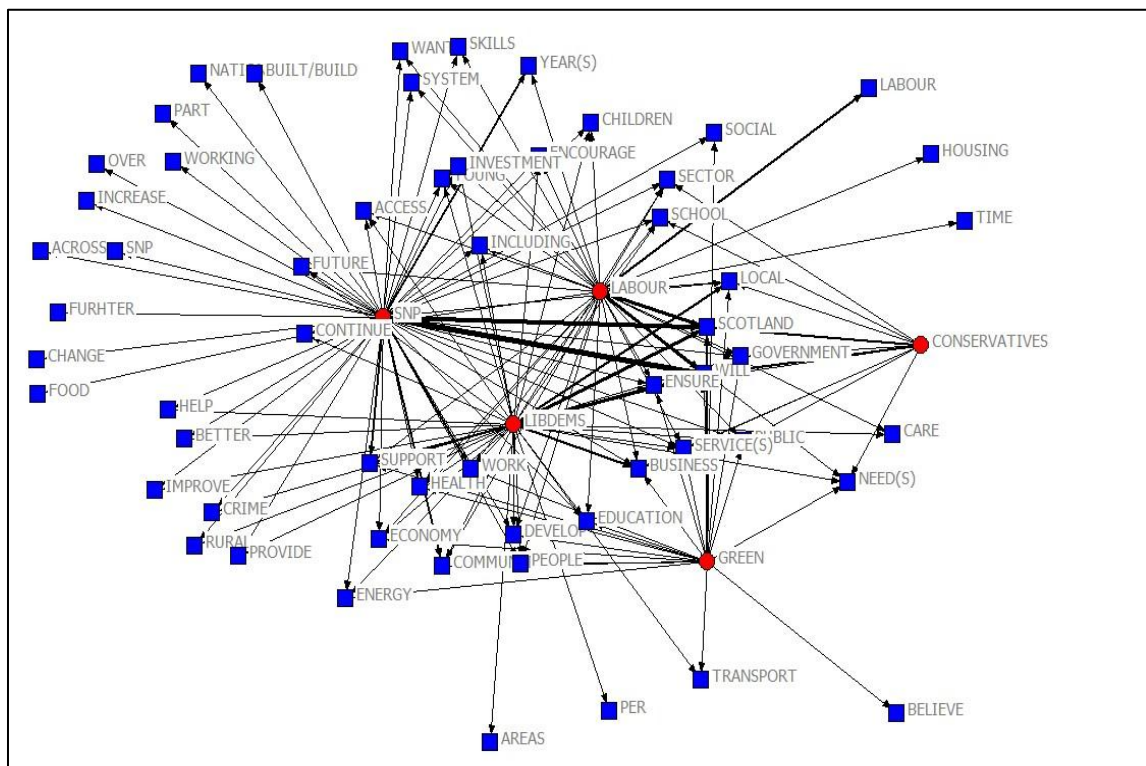
Discussion

	1999	2003	2007	2011
RQ1	*Supported*	*Supported*	*Supported*	*Supported*
RQ2	*Not Supported*	*Not Supported*	*Not Supported*	*Not Supported*
H1	*Not Supported*	*Supported*	*Not Supported*	*Supported*
H2	*Not Supported*	*Not Supported*	*Not Supported*	*Not Supported*

The election results from 1999 through 2011 show that the SNP and Scottish

Labour Parties are the central actors on the political scene. One of the differences

between the two parties that should be emphasized is that the SNP is the only central

actor with no ties to the central British political scene. Therefore, all political decisions

made by the SNP and all consequences of their political actions apply only to the Scottish

politics and Scottish electorate. Labour is in a different situation. While trying to win

over the Scottish electorate, and to portray themselves as representing interests of the

Scottish people in their parliament, Labour has to consider that their political movements

will be always interpreted within the larger context of the United Kingdom. Consider for

example, the party closest to Labour in the Scottish political scene in terms of electorate

and overall political outlook is the SNP. One important difference in these parties'

postulates is SNP's declared support for Scottish independence. In some circumstances

this difference could be seen as simply as one of the issues on which the parties differ,

and if other issues make them as close allies, a coalition could be possible. In the Scottish

situation the fact that SNP seeks independence from the very system of which Labour is a

part eliminates any coalition potential, regardless of other ideological similarities.

Therefore, the first research question can be considered supported, since regardless of coalition potential ideological similarities indeed suggest Labour and SNP as close allies. In every year with the exception of 2011, Labour and SNP were represented as closest in terms of semantic distances. And in every election the two were the most important contenders fighting for Scottish votes representing similar agendas. The only time when Labour's closest partner in terms of semantic distances was not the SNP, but the Liberal Democrats, can also be seen as support for the first research question. Since in 2011 Labour and the Liberal Democrats have been effectively ruling Scotland for eight years, with the same coalition government, it could be expected that this degree of closeness and cooperation will be mirrored in mutual influence and change the language of the party manifestos to a closer match with each other.

The answer to the second research question can be interpreted in more than one way. Taking into consideration just the semantic distances between parties, the assumption that the parties with the smallest semantic distances would form a coalition was not met, therefore the answer to the question would be negative – it is not possible to predict coalition formation based on semantic distances between parties based on analysis of their manifestos. However, considering the above mentioned characteristics of the Scottish political system, and the fact that parties closest to each other had virtually no chance to ever enter a coalition, the answer becomes more complicated. Consider the fact that the parties with the most commonalities would not enter a coalition, it is possible that the winner of the election would look towards other central actors, and pick a potential coalition partner from among them. That is what happened with the Labour party picking the Liberal Democrats as their coalition partner both times. The vote count would

indicate the Liberal Democrats or the Conservatives as equally capable since the vote difference was minimal between the two. However, the Liberal Democrats were both more central, and closer in terms of semantic commonalities, therefore making a more probable coalition match. Even though there is not direct correlation between the semantic distances and coalition formation, the nature of this relationship seems to be curvilinear. If parties are too close they will not enter a coalition because they represent competition. If they are too far away, they will not consider each other as potential partners because they are ideologically too dissimilar. That can also be related to another characteristics of European multi-party systems – if the potential rival is too ideologically close that party might not be a desirable coalition partner because of existing danger that after forming a government together, if issues prompted during election are too closely tied together, the electorate will sway and start either confusing parties with each other, or changing votes easily not seeing the distinctive difference between the two. To avoid that danger, parties might be reluctant to seek coalition partners among parties that are too ideologically similar. They have too many semantic commonalities in their manifestos.

The first hypothesis was partially supported. In 2003, the Labour party was most central with the largest percentage of votes, and in 2011 SNP was in the same situation. In both years, the party that was most central and at the same times the election winner, was the party with the greatest amount of votes a second year in a row. That might suggest that after forming a government and dominating political scene for four years, parties tend to dictate to a certain degree what the most important issues are in that and in previous years. Therefore, the next election issues that the governing party considers

central become central to the political scene further strengthening the party's position, and being mirrored in proportion of votes.

In support of that interpretation Agenda Setting Theory might be appropriate to consider (Nabi & Oliver, 2010; McCombs & Shaw, 1972). Agenda setting theory claims that the media influences our perception of issue importance. Agenda setting theory's main postulate is salience transfer, which means the media have the ability to transfer their agenda to public agenda creating an impression of importance.

Maxwell McCombs and Donald Shaw (1972) first investigated agenda setting capacities of the media in their famous study of 1968 presidential campaign in Chapel Hill, North Carolina. Investigating the agenda-setting function of the mass media, they attempted to assess the relationship between what voters in one community claimed were important issues and the content of media messages used during the campaign. McCombs and Shaw concluded that the mass media exerted a significant influence on what voters considered to be the major issues of the campaign. They discovered a correlation between the issues that were covered media and those that respondents indicated were most important during the campaign. (McCombs & Shaw, 1972). Similarly, if one coalition is dominating political scene for four years or, like in case of the Labour – Liberal Democrat coalition for eight years, issues emphasized by those two parties will understandably be covered by media a lot during those four or eight years. That in turn will lead to issue salience being skewed towards issues favored as important by governing parties. The result of that situation might be voters' perception of those issues are more central to the country's political situation than issues favored by opposition, which might not have been receiving equal media attention. To fully examine

potential relationship between party manifestos, news sources and voters' perception of issue importance more data would have to be examined. Looking at party manifestos and analyzing the content of Scottish news sources in a time sequence might shed some light on establishing relationship between parties' agenda mirrored in issues central to their manifestos and public agenda with issues central to particular election year. Examining both paper and online archives of publications such as *Herald, Scotsman* and Sunday *Mail* might enable a closer look at potential agenda setting effects.

Finally, the second hypothesis was not supported. Parties which demonstrated the greatest similarity in terms of semantic structure did not enter a coalition in election years when no one party won the absolute majority. That observation might support the previous interpretation of the curvilinear nature of semantic distances and coalition potential relationship.

Even though the majority of the research questions and hypotheses were not supported, semantic network analysis seems to be a viable method for the analysis of political party manifestos. Issue centrality and semantic distances between parties seem to indicate that the words used in party manifestos mirror the power structure of the political systems, and even though coalitions could not be predicted based on semantic distances, certain patterns were easy to spot in terms of coalition potential.

Even though parties sharing the most commonalities in terms of semantic structure of their manifestos do not form a coalition there are still many valuable observation which semantic network analysis made possible. First, the existing power structure was very well mirrored in semantic distances. The SNP, Labour and Liberal Democrats, continued to maintain the most central position with the Conservatives and

the Green Party as peripheral players. Even though the Conservatives had obtained a similar number of votes as the Liberal Democrats, they would not the be considered a coalition partner in the reality of Scottish politics. Historically, the Conservatives have had very low support in Scotland, and tend to take stands unpopular with Scottish voters. In all of election for Scottish parliament, Conservatives had never achieved higher then third position, and had never been considered a coalition partner, for any of the winners. Also in Westminster election low support for Conservatives demonstrates itself even sharper. In 2010 out of 306 seats they won in the House of Commons and House of Lords one of those came from Scottish lists (BBC News report, 2010). In 2005 the Conservatives won 198 seats, in 2000 they won 165 and in 1997, 165. In 2000 and 2005 only one of those seats came from Scottish list, and in 1997 none of Conservatives' seats were from Scotland (Mellows-Facer, 2006). Second, in the elections that the Labour Party won even though their closest competitor in terms of semantic distances was the SNP and not the Liberal Democrats, it was expected that Labour would choose a different coalition partner than SNP. Both Labour and the Liberal Democrats are national parties and are therefore obligated to balance their interests on both regional and national levels. The Labour Party associating itself with SNP, a strong nationalistic party with independence postulates might hurt Labour's image in national politics. However, the fact that Labour's manifesto shares most semantic commonalities with SNP - a regional level, national party might shed some light on their strong position in Scottish politics. Labour's manifesto promoting a lot of the same issues as a regional level party might mean that at their regional representation level Labour is successfully tailoring their message to Scottish specifically electorate, instead of maintaining the same political

profile regardless of weather they enter national, or regional level election. That might explain their electoral victory in 1999 and 2003.

Another phenomena explained by semantic analyses might be that Labour and the Liberal Democrats over time have moved closer towards each other in terms of semantic distances. In the 1999 election, the distance between Labour and the Liberal Democrats was .28. In 2007, it measured merely .055.This shows that over the years of maintaining coalition government those two parties have merged their policies and gotten closer to each other, which is mirrored in their manifestos.

Another observation can be made when interpreting a shift in centrality between the 2007 and 2011 elections. Up until 2003 Labour and the Liberal Democrats were the ruling coalition partners, and Labour was the winning party in both the 1999 and 2003 election. However, in the 2007 election, SNP came into power by bringing up new issues and changing the direction of political emphasis. That change is mirrored in the fact that in 2007 even though they won the election, SNP shows low centrality, with Labour and the Liberal Democrats still dictating which issues were most salient. The people of Scotland however, have clearly decided that even though the most talked about issues promoted by Labour and the Liberal Democrats were no longer most important to them, and turned to SNP instead. By 2011 that change is visible in high centrality of the SNP, clearly maintaining its position of power and making its issues more central.

Limitations

One of the limitations of this study is not accounting for length of the manifestos. The parties with longer manifestos might become more central position because of the number of words in their manifestos. However, the Liberal Democrats, the party with the

consistently longest manifestos had never achieved high levels of centrality, which might suggest that while influencing two-mode network comparisons, manifesto length can be accounted for by centrality, since the latter considers importance of issues (interconnectedness) as well as simply the word count. In future research considering proportion of words used in particular manifestos instead of count might help solve that problem.

Another limitation that needs to be mentioned is that the words shared by all the political parties have not been accounted for in all the analysis. If all parties share certain amount of words, then they don't change the nature of connections between parties, but add to the number of ties, and this influences the centrality measures. A valuable addition to future research would be to compare results with and without the common words.

Finally, the capability to generalize the results to multi-party democracies is limited with only one country used as an example. The Scottish political situation had most likely influenced coalition outcomes, and it would be useful for future analyses to compare Scottish findings with those of a country with only one level of government. In situation when parties are considering their potential coalition alliances only on one political scene, the choices they are making are influenced only be conditions of one political landscape. When parties are searching for coalition partners on regional level, but at the same time have to be aware of potential consequences of their decisions on national level, extra factors come into play. An example is the Labour Party in Scotland. Entering a coalition with SNP would be a political suicide for the party who has both Scottish and central Westminster representation. For Labour that would mean associating

themselves with a party that supports Scottish independence from the United Kingdom. While it might have been seen as a good move in Scotland, in England that would most likely mean losing voter's support in large numbers.

Future research

It might be valuable to test the assumptions of this project under different conditions. In democracies that do not function under regional versus national divisions, the factors included in considering potential coalition partners might be different, and maybe more directly tied to semantic structure of party manifestos. Also, to test how semantic network analysis and issue centrality factors into gaining voters' support it might be valuable to analyze candidates in the American primaries and compare the proposals and political communication materials they put forward with later outcomes of their popularity and electoral potential.

Finally to strengthen the applicability of the results, it might prove useful to combine semantic network analysis with more traditional content analysis used in political text analysis. Analyzing text using semantic network software provides valuable first glance into power structure and potential overlap in parties' ideological outlook as indicated by their manifestos. However traditional content analysis can provide necessary depth to interpretation of those findings, by analyzing broader context of political statements, as well as various sources of political communication at once.

Conclusion

Despite the fact that most of the hypotheses remaining unsupported, this project adds to the discussion about how political texts can be analyzed. There are three things that one can take away from this project. First, there are more factors in choosing a coalition

partner than semantic similarities. Second, that even though it was impossible to predict coalition formation from semantic analysis of party manifestos that method of analyzing the political landscape provides an accurate outlook on division of power and centrality of issues for any given election. Analyzing party manifestos using semantic networks software opens a fairly unexplored branch of political communication which focuses on how accurate in expressing political meanings are tools used to communicate with voters during campaign. There is a lot of undiscovered potential in researching political communication with focus on tools of political communication, as well as looking specifically at party manifestos. It can be a very revealing source of information about country's political reality that can be an opening step before content analysis, making it possible to obtain information without previous knowledge of country's political reality, and therefore without a bias.

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