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PROPORTIONALITY AND PARTY SUCCESS IN EUROPE

by

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SUMMARY

This thesis consists of four articles and an introductory section. The main research questions in all the articles are about proportionality and party success in Europe, at European, national or district levels. Proportionality in this thesis denotes the proximity of seat shares parties receive compared to their respective vote shares, after the electoral system's allocation process. This proportionality can be measured through numerous indices that illustrate either the overall proportionality of an electoral system or a particular election. The correspondence of a single party's seat shares to its vote shares can also be measured. The overall proportionality is essential in three of the articles (1, 2 and 4), where the system's performance is studied by means of plots. In article 3, minority party success is measured by advantage-ratios that reveal single party's winnings or losses in the votes to seat allocation process.

The first article asks how proportional are the European parliamentary (EP) electoral systems, how do they compare with results gained from earlier studies and how do the EP electoral systems treat different sized parties. The reasons for different outcomes are looked for in explanations given by traditional electoral studies i.e. electoral system variables. The countries studied (EU15) apply electoral systems that vary in many important aspects, even though a certain amount of uniformity has been aspired to for decades. Since the electoral systems of the EP elections closely resemble the national elections, the same kinds of profiles emerge as in the national elections. The electoral systems indeed treat the parties differentially and six different profile types can be found. The counting method seems to somewhat determine the profile group, but the strongest variables determining the shape of a countries' profile appears to be the average district magnitude and number of seats allocated to each country.

The second article also focuses on overall proportionality performance of an electoral system, but here the focus is on the impact of electoral system changes. I have developed a new method of visualizing some previously used indices and some new indices for this purpose. The aim is to draw a comparable picture of these electoral systems' changes and their effects. The cases, which illustrate this method, are four elections systems, where a change has occurred in one of the system variables, while the rest remained unchanged. The studied cases include the French, Greek and British European parliamentary systems and the Swedish national parliamentary system. The changed variables are electoral type (plurality changed to PR in the UK), magnitude (France splitting the nationwide district into eight smaller districts), legal threshold (Greece introducing a three percent threshold) and counting method (d'Hondt was changed to modified Sainte-Laguë in Sweden). The radar plots from elections after and before the changes are drawn for all country cases. When quantifying the change, the change in the plots area that is created has also been calculated. Using these radar plots we can observe that the change in electoral system type, magnitude, and also to some extent legal threshold had an effect on overall proportionality and accessibility for

small parties, while the change between the two highest averages counting method had none.

The third article studies the success minority parties have had in nine electoral systems in European heterogeneous countries. This article aims to add more motivation as to why we should care how different sized parties are treated by the electoral systems. Since many of the parties that aspire to represent minorities in European countries are small, the possibilities for small parties are highlighted. The theory of consociational (or power-sharing) democracy suggests that, in heterogeneous societies, a proportional electoral system will provide the fairest treatment of minority parties. The OSCE Lund Recommendations propose a number of electoral system features, which would improve minority representation. In this article some party variables, namely the unity of the minority parties and the geographical concentration of the minorities were included among possible explanations. The conclusions are that the central points affecting minority success were indeed these non-electoral system variables rather than the electoral system itself. Moreover, the size of the party was a major factor governing success in all the systems investigated; large parties benefited in all the studied electoral systems.

In the fourth article the proportionality profiles are again applied, but this time to district level results in Finnish parliamentary elections. The level of proportionality distortion is also studied by way of indices. The average magnitudes during the studied period range from 7.5 to 26.2 in the Finnish electoral districts and this opens up unequal opportunities for parties in different districts and affects the shape of the profiles. The intra-country case allows the focus to be placed on the effect of district magnitude, since all other electoral systems are kept constant in an intra-country study. The time span in the study is from 1962 to 2007, i.e. the time that the districts have largely been the same geographically. The plots and indices tell the same story, district magnitude and electoral alliances matter. The district magnitude is connected to the overall proportionality of the electoral districts according to both indices, and the profiles are, as expected, also closer to perfect proportionality in large districts. Alliances have helped some small parties to gain a much higher seat share than their respective vote share and these successes affect some of the profiles. The profiles also show a consistent pattern of benefits for the small parties who ally with the larger parties.

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II Articles

1. Proportionality in the European Parliamentary Elections: Evidence Since 1979, *Representation*, 2006, 42 (2): 103-116.
2. Plotting the Consequences of Electoral Change: Causes, Outcomes and Visualisation, *Homo Oeconomicus*, 2007, 24 (1): 47-70.
3. Minority Party Success in Heterogeneous European Countries, *Finnish Journal of Ethnicity and Migration*, 2007/ 2.
4. Magnitude and Allies Matter - Proportionality in Finnish Electoral Districts 1962-2007.

I INTRODUCTION

1. Introduction

This thesis deals with the consequences electoral systems have on party success and electoral proportionality. Electoral system studies (subsequently referred to as electoral studies) are at the core of political science, dealing with concepts such as power, representation and proportionality. The key actors and elements are voters, parties, seats and votes. In this thesis, electoral systems are seen as the apparatus that determines how elections are run, more particularly, how votes are converted to seats. These systems are defined in electoral laws and set the rules of the elections including who can vote, how the votes are given as well as where and how the votes given are allocated. To follow the definition of Gallagher and Mitchell (2005, 3) electoral systems can be described as:

“The set of rules that structure how votes are cast at elections for a representative assembly and how these votes are then converted into seats in that assembly”

The thesis focuses on that section of the electoral system where the votes are converted to seats and examines the kind of effects this conversion process has on electoral proportionality and party success. The countries studied are all members of the European Union. This limitation has been necessary because European parliamentary (EP) elections are cases in some of the articles in this thesis. The cases include electoral systems at the national parliamentary and EP election level, but also at the district level in Finland.

The main research questions in all the articles are about proportionality and party success. Proportionality in this thesis means the proximity of the number of seats parties receive after the allocation process of the electoral systems respective to their share of votes. This proportionality can be measured through numerous indices that illustrate the overall proportionality of an electoral system, or a particular election. Also the level at which one party's seat allocation corresponds to its respective vote shares is often measured. The overall proportionality is essential in three of the articles (1,2, and 4) where the system's performances are studied through plots, while single party success is central in article three.

The first article asks how proportional are the European parliamentary (EP) systems and how do they compare with results gained from earlier studies? How do the EP electoral systems treat parties of diverse sizes? The reasons for different outcomes are investigated using the explanations given in the traditional electoral studies. The EU15 has electoral systems that differ in many important aspects, even though there have been aspirations towards a certain amount of uniformity for decades. Therefore, the various systems are expected to have a range of impacts on both the overall proportionality of the electoral results as well as the successes of different sized parties.

The second article also focuses on the overall proportionality performance of an electoral system, but here the focus is on what kind of impact electoral system changes have. I have also developed a new method of visualizing some old and a few

new indices to draw a comparable picture of these electoral systems' changes and their effects. So how does the overall proportionality and accessibility for small parties change when the electoral system type, electoral formula, district magnitude or legal threshold is changed? Can we see this change with the radar plots developed for this article and to which direction are the changes? Furthermore, how do the degrees of effects caused by these changes compare?

The third article studies the success minority parties have had in nine electoral systems in heterogeneous countries i.e. countries with considerable sized minority groups. Is the success of the European minority parties proportional to their votes in the nine national electoral systems? This article aims to bring more motivation as to why we should care how different sized parties are treated by the electoral systems. Since many of the parties that aspire to represent minorities in European countries are small, the possibilities for small parties are highlighted. However, consideration has to be given to the question of whether the impact of the electoral system factors are the only issues that prevent these minorities from succeeding in their pursuit of representation through minority parties, or if it is determinants outside the sphere of electoral systems that are at play here?

The fourth article moves the perspective of the examination of the electoral study effects from the national level to the district level in order to take a closer look at proportionality. The case of Finnish electoral districts is also able to focus on the effect of district magnitude, since all other electoral systems are kept constant in an intra-country study. What kinds of differences are there in proportionality in the varying sized electoral districts and how do parties succeed in these districts? The effects of electoral alliances in an open list PR are also studied, since such alliances are commonplace in Finnish districts. Do these alliances help parties and if so which ones and why? What are the effects alliances have on the overall proportionality at the district level? Does the district level study reveal something that a national level study would oversee?

Hence, all the articles independently ask if Rae's claim that electoral systems steal from the poor (i.e. small parties) and give to the rich (large parties) holds true. Alongside this question of party success, overall proportionality of the electoral results is also central in all articles. A considerable amount of the politics that surround elections is outside the scope of this thesis. Firstly, the arrangements that take place before the votes are given in elections and the candidate selection process and campaigning are not studied here. The parties are taken as players that exist to win seats in an election, even though the author acknowledges that parties evolve and work between elections as well. Secondly, the politics of government formation and duration are for the most part left out as well. If party alliances are considered in this thesis, they are electoral alliances only. The political culture and party ideologies are not considered either, even though the fact that electoral systems are a product of the political culture is acknowledged. One of the articles deals with parties that aim to represent minorities, but in other articles, parties are only seen as agents with different vote share sizes. The focus on the votes-to-seats transformation omits much from real life politics, but is necessary to keep the thesis coherent and to be able to focus on the multitude of effects electoral systems themselves have on proportionality and party success.

2. Cases and Data

The variables included as explanations in this study are the basic characteristics of electoral systems, and electoral results are seen as a produce of the combination of these characteristics. These include mostly variables of electoral systems, but occasionally also the various characteristics of the parties (in article three). The method is comparative comparing nations or member states, but also single country elections before and after a change in the electoral system. In article four districts within a single country work as the comparable cases. Country comparisons pose some problems, but because EU member countries are so similar in many areas, (cultural and historical factors etc.) one can talk about most similar systems design (MSSD) (see Lijphart 1971 also in Kestilä 2007, 56).

The main data for electoral studies are votes and seats (or their shares). Electoral laws form puzzles of variables, each of which may have a consequence on the electoral outcome and, which work together in countless different combinations. One may look into how the pre-existing or current electoral systems have influenced the electoral outcome, as in all the articles in this thesis. Simulations of electoral systems are possible and almost all combinations of electoral system variables are possible¹. Recently, simulations have gained more ground in the field with the help of Internet based applications and other computer aids (e.g. Bissey & al. 2004; Fragnelli & al. 2005).

In the first article, the body examined is the European parliament, which is a unique case since the members are chosen with the electoral systems that all differ. The number of members chosen and especially the electoral system variables in the systems used to choose them varies greatly between the member countries. The second article deals with the effects of electoral change within countries and cases where chosen accordingly among the electoral systems with changes in the studied variables. The article introduces a six-way radar plot to show some old and new indices in a fresh manner and compare electoral systems in four countries before and after a system change. In the third article, a comparison between national parliamentary systems is made and the key issue here for case selection was the share of minorities in these countries. The size, historical background and coherence of these minorities vary, as do the electoral systems that limit the possibilities of parties aiming to represent these minorities. This problem was solved partly by noting the size and the geographical concentration of the minorities in the study. Article four focuses on inter-country effects of electoral systems; this time the cases being districts within a single country. This also allowed a “look under the hood” since district level studies reveal things that may go unnoticed while keeping to the nation level comparisons. As mentioned before, when cases are from one country many problems of comparable cases can be avoided and one can focus on the variable that varies between the districts or elections.

¹ Choosing a majoritarian system will limit the other choices considerably.

3. Electoral Systems and Electoral Studies

Elections are a defining part of a working democracy. Elections are administered around the world with a multitude of electoral systems and the study of these systems and their various consequences has been, for decades, at the heart of political science. The main focus for electoral system studies has been institutional with the focus mainly on the political consequences that electoral systems have for parties². It is important to note, that electoral systems do not arise from a vacuum. Geographical, cultural and historical factors also influence the choice of an electoral system (Lijphart 1991). According to Lipset and Rokkan (1967 also in Sundberg 1999, 221), three poles or four lines of social cleavages explain the party system in a given country. Electoral systems, at most, then modify these pre-existing social divisions. The choice of electoral system is then dependent on the interests of these party cleavages. Later, Colomer (2005) also argued that the size and form of the party field explained the choice of electoral system, not the other way around. Electoral systems can be seen as games planned by the players to maximize their own benefits.

An institutional approach focuses traditionally on explanations of the political outcomes and considers institutions, such as electoral systems, as explaining variables. Electoral systems do indeed play their part in dividing power and at times ensuring representation. They are said to be the Rosetta stone³ for political studies, since they use a fairly easily quantified measures of votes and seats. Votes and seats may indeed be as important a measure for political science as money is for economics. (Taagepera & Shugart 1989, 5-6). Electoral systems work in the core of these important measurements and in fact use the other to produce the other. The applications of electoral studies are numerous and for example new democracies that aim to create their own electoral systems often try to superimpose the benefits of some older electoral systems while avoiding the downsides of others. When a country makes changes to existing electoral systems it may also learn from the results electoral systems studies have produced and try to mould a suitable system accordingly, even though electoral systems do not always work according to expectations.

Most of the European national electoral systems are quite old and stable. The third wave of democratisation⁴ gave birth (or rebirth) to many new democracies that also required electoral systems among their institutions. They had a large pool of scholarly work to help them try to find the perfect fit amongst the possible choices. This also brought about some of the most complicated electoral systems that, in some cases, are still changing at every election. No matter which approach is used to an electoral systems, sociological or institutional, we must recognise the fact that electoral systems

² Setting aside the vast array of studies in voting behaviour.

³ The Rosetta stone is an idiom for a key that helps to decipher, solve or translate a difficult problem.

⁴ For more on the waves of democratisation see Huntington (1991): Third wave of democratisation, University of Oklahoma Press, also in Karvonen (1997): Demokratisering.

limit the playground of political actors in elections. They also treat parties differently depending on their size, geographical concentration or strategic choices.

Two institutional factors block the changes in electoral systems: how laws defining electoral systems can be changed and which agents can change them. The largest issue that blocks changes is the fact that the parties and people currently able to make the decision about changing the electoral system have themselves often been elected with that system (Katz 1980, 123; Cox 1997, 18). Katz also points out that even though minor changes in electoral systems are to be expected, major changes are unlikely and happen only in the most extreme circumstances. Many scholars (Rae 1967 136; Taagepera and Shugart 1989, 5) recognise the inertia in electoral systems caused by the powers of change being in the hands of the winners. Countries often remain with the system they applied at the time when universal suffrage was introduced.

Nevertheless, electoral systems are not unchangeable. They can be and have been changed in several countries. In even more countries, the reform of the electoral system is under discussion. Sartori (1986) points out, that electoral systems are actually the most easily manipulated parts of electoral systems. Even though they are hard to change, they are still easier than other elements such as the political culture or tradition. According to Cox (1997, 17-18) electoral systems and party systems have a symbiotic relationship. Even though the assumption of Duverger is often right and electoral systems indeed affect how parties survive and prosper in a certain electoral system, the parties also have an incentive to mould the electoral system or some of its parts to the benefit of themselves. Some countries' electoral systems, such as Greece and France, have been under continuous change even though the reasons behind such changes are not always clear. Carstairs calls France a conspicuous example of a country where possibilities for electoral engineering have been realised, especially by the parties in power (Carstairs 1980, 185).

There are at least three levels of elections in all European Union member countries, national, local, and European elections. The vast majority of electoral studies have concentrated on national level elections and often compared national electoral systems between countries (e.g. Rae 1967, Lijphart 1994). Conclusions have been drawn from the differences between these systems. Nowadays, the availability of long term electoral results make such studies easier by providing a large pool of electoral results in systems that work with very different components. Country comparisons do have some drawbacks that also limit electoral studies. For one, the number of cases is restricted, especially if a geographic limit is set for the country choices, as in this thesis. This will make the use of statistical analysis tools impossible and result in a comparative method (Lijphart 1971). Second, comparing electoral systems of different countries often ignores many details of the political culture, traditions and party fields in their comparisons. Studies also commonly concentrate on the national level results even though the elections may be conducted at the district level.

Tables one and two introduce the reader to the multitude of variations found in national and EP electoral systems⁵ in Europe. Table 1 introduces the EU25's national electoral systems, most of which have not been cases in the articles in this thesis, as the last column shows. The different variables of electoral systems in the tables will be more closely examined in chapter four. The table reveals only some of the most recent properties of these electoral systems as the systems have changed quite often and not all changes can be noted here. Table 2 below shows the same information for EP electoral systems for EU15.

Table 1. National parliamentary elections in EU member countries

Country	Electoral System	Average District Magnitude	Counting Method*	Legal Threshold**	Number of Constituencies	Case in Article no.
Austria	PR	20,3	Hare	4 %	9	N/A
Belgium	PR	13,6	d'Hondt	5 % (district)	11	3
Denmark	PR	7,9	Mod. Sainte-Laguë	no	17 + 40 comp. seats	N/A
Finland	PR	13,3	d'Hondt	no	14 + 1(Åland)	3 & 4
France***	Majoritarian	1	Majority	12,50 %	577	N/A
Germany	Mixed (MMS)	18,6/1	Hare/ Majority	5 %	16+299	N/A
Greece	PR	5,1	Hagenbach-Bischoff	3 %	56 + 12 state deputies	N/A
Ireland	STV	4	Droop	no	42	N/A
Italy	PR	23,7	Hare	2-20 %	26 + 4 geographical groups	N/A
Luxemburg	PR	15	d'Hondt	no	4	N/A
Netherlands	PR	150	Hare	no	1	N/A
Portugal	PR	10,5	d'Hondt	no	22	N/A
Spain	PR	6,7	d'Hondt	no	50 + 2 autonomous	3
Sweden	PR	10,7	Mod. Sainte-Laguë	4 %	29 + 39 comp. seats	2
UK	Plurality	1	Plurality	no	646	3
Cyprus	PR	9,3	Hare	1,80 %	6	N/A
Czech Republic	PR	14,3	Hagenbach-Bischoff	5 %	14	3
Estonia	PR	8,4	Hare	5 %	12	3
Hungary	Mixed (MMS)	7,3	Majority/Hare	5 %	176 + 20	N/A
Latvia	PR	20	Sainte-Laguë	5 %	5	3
Lithuania	Mixed (AMS)	70	Plurality / Hare	5 %	71+1	3
Malta	STV	5	Droop		13	N/A
Poland	PR	11,2	Mod. Sainte-Laguë	5 %	41	N/A
Slovakia	PR	150	Hagenbach-Bischoff	5 %	1	3
Slovenia	PR	9	Hare	4 %	8+2 minority seats	N/A

* The counting method for the first (or only) tier included only

** The legal threshold can be higher for coalitions and different in various electoral tiers if they exist

***Two rounds, threshold from registered voters

Source: IPU Parline database <http://www.ipu.org/parline-e/parlinesearch.asp> [online 13.2.2008]

⁵ The EP electoral systems of the newest member counties are not included since they have only been used for single elections hence the data is insufficient for most of the plots and indices applied.

Table 2. The EP Elections in the EU 15

Country	Electoral System	Average District Magnitude+	Counting Method	Legal Threshold	Number of Constituencies	Case Used in Article no.
Austria	PR	21 / 18	d'Hondt	4 %	1	1
Belgium	PR	8,3 / 8	d'Hondt	no	3	1
Denmark	PR	15 / 16 / 14	d'Hondt	no	1	1
Finland	PR	16 / 14	d'Hondt	no	1	1
France*	PR	81 / 87 / 9,8	d'Hondt	5%	1 / 8	1 & 2
Germany	PR	81 / 99	Hare	5 %	Länder (16) or 1	1
Greece	PR	24 / 25 / 24	Hare	3 %**	1	1 & 2
Ireland	STV	3,8 / 3,3	STV	no	4	1
Italy	PR	17,4 / 15,6	Hare	no	5 / 1 ***	1
Luxemburg	PR	6	d'Hondt	no	1	1
Netherlands	PR	25 / 31 / 27	d'Hondt	no	1	1
Portugal	PR	25 / 24	d'Hondt	no	1	1
Spain	PR	60 / 64 / 54	d'Hondt	no	1	1
Sweden	PR	22 / 19	Mod. Sainte-Laguë	4 %	1	1
UK****	plur / PR	1 / 8 / 6,8	Plurality / d'Hondt	no	78 / 87 / 11+1	1& 2

+ The changes in time marked

* Eight constituencies introduced for 2004 elections

** Threshold introduced in 1994

**** Compensation seats at the national level

***** Since 1999 PR elections. Northern Ireland as STV

Source: European Elections website www.europarl.europa.eu [online 13.2.2008]

Both tables show that the variation of electoral systems is extensive even I have limited my thesis to the members of the European Union. To shed to light into how these electoral systems and their consequences have been studied before, let us take a look into the history of the field of electoral studies.

4. History of electoral studies

The beginning of electoral studies can be said to have started in the 19th century when especially the British electoral system was largely debated by scholars such as Mill (1861) and Hoag and Hallet (1926). In 1941, Hermens concluded that PR systems lead to anarchy, basing his arguments on the Weimar Republic of inter-war Germany and the rise of Hitler. Lakeman and Lambert (1955) favoured STV and challenged the views of Hermens. The early works, perhaps more polemical than theoretical or empirical, form the base for the future electoral studies and can be called the 'first generation' in this field. This is not to say that such studies defending a particular system or advocating a certain type of system or change do not exist anymore. (Shugart 2005, 26.)

Many of the core questions still remain unanswered and not often, at least, debated. Although, to understand the current sphere of electoral studies one must look into some of the seminal works. A cohesive and empirical approach on electoral systems can be said to have started with Duverger, when he wrote on the consequences of electoral laws in 1954 in *Les Partis Politiques* (translation used here is from 1964). Douglas Rae set the next important step towards a more quantitative and comparative trend in 1967 with *The Political Consequences of Electoral Laws*. Let us first look into the seminal work of Duverger.

4.1 Duverger: A True Sociological Law

Duverger's book *Political Parties* (1964) started evolution of the disciplines to what it is now, since it prompted some of the questions still debated. (Taagepera and Shugart 1989, 50.) Maurice Duverger was the first to use a large amount of data to look into the logic that the electoral systems have on parties and other agents in the political field. His main focus was on the differences that the two main electoral system types have, i.e. the proportional and the majoritarian system. The most important result from his book has been Duverger's law, which states the following:

"...Its [electoral system's] effects can be expressed in the following formula: *The simple-majority single-ballot system favours the two-party system*. Of all the hypotheses that have been defined in this book, this approaches the most nearly perhaps to a true sociological law" (Duverger 1964, 217) (Italics in the original)

What Duverger pointed out was the strong liaisons between majoritarian systems and two-party systems. He explained this through two factors, the mechanical and the psychological. The mechanical factor takes place when the third party is under-represented compared to its vote shares. This consistent underrepresentation of the third party makes the two strongest parties even stronger. This has lately been the fate of the Liberal Democrats in the UK, which is often used as a model country for illustrating the effects of a pure majoritarian electoral system. It is possible for the underdog third party to rise and actually benefit from the electoral system, if it manages

to outstrip one of its forerunners. This has happened in the UK to the Labour party, which has now long been one of the benefactors of the electoral system, but used to be the third party that was discriminated against by the system until the 1920s'. (Duverger 1964, 224-226.)

The other factor hindering the success of the third party is the psychological factor. According to Duverger (1964, 226), electors quickly realise that their votes are wasted on parties smaller than the two largest, and electors will learn to give their vote to the better of the two main rivals. This may take some time to happen but with the underrepresentation working towards the same direction, these factors accelerate each other. Only locally strong or nationally powerful parties may break this cycle in majoritarian systems. The mechanical factor will be seen if disproportionality is measured, while the psychological effect will not, since only people's votes are counted, not their underlying preferences.

In Britain, the majoritarian electoral system still persists, even though the EP elections have been run with a multi-member PR system since 1999. The change from FPTP to a PR is clearly evident from article two, where the British EP electoral system has been studied before and after the change. All the indices used in the radar plots, but the empirical threshold moved towards a more proportional and accessible system. More parties came close to perfect proportionality of vote and seat shares, more small-sized parties gained seats, less effective parties were lost and the overall deviation from proportionality was lowered as well. These results can be seen as verification of Duvergers points.

Duverger's law has been re-evaluated and rephrased in later decades. Riker (1986, 30) has found some counter evidence for the law in India and Canada. He also points out the voters are not always sophisticated⁶ and may indeed keep voting for a party that is unlikely to succeed (Riker 1986, 39). Duverger did note, that for new parties a strong local backing or powerful national organisation is necessary (Duverger 1964, 226). Douglas Rae (1967, 95) added that plurality formulae are not altogether sufficient conditions for two-party systems.

“ Plurality formulae are always associated with two-party competition except where strong local minority parties exist...”

This can also be seen from article three, in which the success of locally strong (minority) parties is evident from two very different cases of majoritarian electoral systems. In the UK, the Welsh minority parties, even though small in size nationally, have succeeded well on average in the majoritarian election environment. In Lithuania, where a mixed electoral system is also used, the Polish minority has in fact done overwhelmingly better in the plurality run districts than in the PR districts. Both of these groups and parties are locally strong and benefit, therefore, from the small plurality districts.

Duverger also formulated an often-called Duverger's hypothesis in the same book, where he says that *“the simple-majority system with second ballot and proportional*

⁶ Sophisticated here means a voting behaviour, which is based on strategies, not actual preferences.

representation favour multi-partism" (1964, 239). The simple-majority system with second ballot is not widely used anymore⁷, but the point he made about proportional representation systems has endured, spread and have also been widely studied. In Duverger's work, multi-partism means anything more than two-partism. Duverger admits that PR systems with two party systems are possible, but also in his data, PR systems coincide with multipartism and no PR system has given rise or kept in existence a two-party system (Duverger 1964, 245). He argues that the reasons for the connection between PR and multipartism lie in the lack of "brakes" on the electoral system, since both mechanical and psychological factors are absent. There are no such drastic cases of underrepresentation as there are in majority systems and the voters will also learn that their options (parties / policies) are more diverse as well (ibid, 248). He also points out that other parts of the electoral system, such as the counting method, may hinder the success of some parties, but all in all PR systems have a tendency to give rise to new parties. Splits within the party field and the emergence of totally new parties are much more feasible in a PR system than in majoritarian system. (Ibid, 255.) Again, parties that are locally strong may deviate from this hypothesis (Norris 2004, Suojanen 2007b).

The relationship between choices of electoral system type and party field size has raised some doubts but has also proved very powerful. The claims of Duverger have later been revised (Sartori 1986), generalised (Taagepera and Shugart 1989) and turned around (Colomer 2005) but still they remain central to the discipline of electoral systems. Later Duverger himself wanted to remind the reader that:

".. the relationships between electoral rules and party systems is not mechanical and automatic: A particular electoral regime does not necessary produce a particular party system; it merely exerts pressure in the direction of this system; it is a force which acts among other forces, some of which tend in the opposite direction." (Duverger 1986, 71).

The relationship between size of the country and political institutions, including electoral systems has also been studied by many scholars (e.g. Anckar 1997 & 1998; Anckar D. 2004, Hadenius 1992). This point was first pointed out by Rokkan (1970), when he stressed the crucial importance of the differences of small and larger units. According to Rokkan the small democracies have been more prone to accept the principle of proportionality.

4.2 Rae: Broadening the Sphere of Electoral Studies

Rae wanted to find relationships between electoral systems and party systems in a cross-national comparison. He asked the question, how did electoral laws shape nations' political party systems? He saw the study thus far to be very general and not very reliable and sought to broaden the field to empirical and data based direction. In his work, Rae formulates different electoral system variables and classifications of electoral laws, which are then studied in the light of twenty countries' electoral data.

⁷ In Europe, the simple-majority system is only used in France for parliamentary elections.

Rae also made the distinction between electoral laws and other laws regulating the election process by defining electoral law as:

"..those which govern the processes by which electoral preferences are articulated as votes and by which these votes are translated into distributions of governmental authority (typically parliamentary seats) among the competing political parties. (Rae 1967, 14).

Rae goes through electoral system variables, which are crucial for interparty competition and looks for generally shared effects in his data. This type of an approach is still very much used in electoral studies even though data availability makes case comparisons and lengthy time spans more facile. The complete electoral systems through many elections are now also more used as cases than the single elections, which Rae used (Lijphart 1994, 7). Rae focuses on both short run (proximal) and long run (distal) consequences that electoral laws have on party competition. He also notes that the links between votes and seats can be analysed in short term cases i.e. single elections with great confidence, since there are no intervening variables between the vote and seat distributions and only the electoral system connects the two. (Rae 1967, 134.) However, in long term cases between elections there are many intervening variables that have an effect alongside the electoral system. In this thesis, the long run electoral systems are more often cases, even though in article two single elections before and after electoral system changes are compared. A longer time span of an electoral system provides us with more data, which is crucial for some of the methods applied, but a focused comparison of two single elections gives a more focused view of the ephemeral occasion of change in a particular system.

Rae also notes an important point that has later been proved by many (e.g. Laakso 1980, Lijphart 1994) that all the electoral systems, including PR systems are prejudiced against the weak (i.e. small in vote shares) parties and favour the strong (i.e. large in vote shares) ones. This then leads to simplicity of the party fields and on average stronger parties in seats than in votes, when the weakest ones are denied representation. Therefore, all the legislative (counted from seats) party systems are less fractionalised than their elective (counted from votes) counterparts since all electoral systems have a de-fractionalising effect. The extreme cases are the ones where legislative majorities are manufactured. This finding makes the possibility of perfect proportionality electoral outcomes almost impossible and leaves us with only the possibility of comparing the degree of disproportionality of each electoral system. (Rae 1967, 136-138.) From article one (Suojanen 2006), which compares the electoral systems of EU15, we can see, that all the profiles depict how different systems treat different sized parties. This means that when their advantages in the vote-seat conversion are calculated, on average small parties have suffered because of the electoral system in all countries while large parties on average thrive. The same applies to the districts in Finland, where, even though the variance of magnitude has an influence, on the whole, small parties are less well off than large parties in all districts⁸ (Maunula 2007).

⁸ Even though there were some exceptions due to electoral alliances.

The work of Rae was and still is recognised as a breakthrough in the field of electoral system studies and has served as starting point for many later discussions and studies such as the one at hand. Lijphart criticised Rae's work by remarking that many of the relationships found by Rae were in fact a lot stronger. For example, with a large dataset Lijphart found that the links between district magnitude, electoral formula and proportionality are much stronger than Rae claimed, but the links to multipartism are weaker. (Lijphart 1990, 482.)

4.3 Electoral Studies Evolve, Unify and Fractionalise

Since and partly because of Rae's work electoral studies took a step into a more comparative and systematic direction. Rokkan (1970, 166) questioned the quality of electoral studies thus far as did Arend Lijphart 15 years later (1985, 3). They were both worried about underdeveloped stage of electoral system studies. Twenty years later in a foreword for *The Politics of Electoral Systems* (Gallagher & Mitchell (eds.) 2005), Lijphart notes that the field has caught up with the rest of political science and reached maturity, even though some gaps remain understudied.

After Rae, several new scholars joined the field and electoral studies had one of its high points in the seventies and the eighties. Authors such as Lijphart, Grofman and Powell made many of the most quoted and replicated studies in those decades. There was a vibrant academic debate over the different effects the system elements have on party systems, proportionality and the other output variables electoral systems may have and how these effects ought to be measured. Loosemore and Hanby (1971) introduced their much-applied measure for proportionality deviation. Riker (1986) re-examined the famous Duverger's law and Duverger (1986) revised it.

Some scholars set out to understand what effects electoral systems have on individual candidates (Katz 1980; Hix 2004), and some want to improve the existing measurements and other tools used in this field (Taagepera and Laakso 1980, Taagepera and Shugart 1989, Gallagher 1991). Lijphart puts electoral systems into a wider perspective in his book *Democracies* where he examines the relationships between electoral institutions and political outcomes, such as government durability and sovereignty issues. He introduces two models of democracy, majoritarian and consensus, that are both rational and prescriptive and to some extent also empirical. (Lijphart 1984, 207-212.) Many scholars also aim to combine the theoretical with the practical and offer guidelines to those responsible for developing electoral systems (e.g. Norris 2004, Shugart and Wattenberg 2001 and Colomer 2004).

Many books have concentrated on the possibility of electoral reform in the UK (e.g. Bognador 1984, Dummett 1997 and Reeve & Ware 1992). Edited books on electoral systems are often compilations of country studies written by scholars within the given countries or other country experts with a wide knowledge of the countries electoral (and party) system (e.g. Gallagher & Mitchell 2005, Shugart & Wattenberg 2001 and Rule & Zimmermann 1994). Country case comparisons and chapters are also common in single author books, where the cases are usually justified and compared according a

geographical area (Rose & Munro 2004, Siaroff 2000, and Carstairs 1980), and some works extend their comparisons to a wider array of country cases (Lijphart 1994, Lundell 2005). In general, countries are the most common units of comparison for electoral system studies.

In the 20th century electoral studies benefited from the availability of cross-national data, new methods and possibilities as well as growing interdisciplinary work the discipline is still evolving. Key journals such as *Electoral Studies* (since 1982), *Journal of Democracy* (since 1990) *Representation* (since 1995) and *Party Politics* (since 1995) have become important arenas for publishing the latest developments in the field, and electoral systems studies have also been published in the mainstream journals of political science.

Knowledge on electoral systems has accumulated since the first generation of 19th century and methods of electoral studies have moulded and become more refined. Many issues are still not agreed upon among the leading scholars even though all the central features of electoral systems have been studied thoroughly. There are multiple studies concerning the variables electoral systems in electoral systems that are used, or have been used but also on theoretical systems that have not yet been applied.

Some scholars have focused more on the apportionment of seats to districts (Balinski and Young 1975 and 2001; Carter 1982). Carter (1982, 575) notes that mathematically the division on seats to districts or seats to parties are equal and the methods for doing both are largely the same. Balinski and Young note that the method used for seat allocation should fulfil two basic properties i.e. the method should be house monotone and must satisfy quota. The first property means that the state or party should not lose seats if the assembly (house) size is increased and the second states that the seats divided should stay close to the quotas of the states or parties (Balinski & Young 1975). Unfortunately, there are no methods that satisfy both properties (Balinski & Young 2001, 81).

One of the latest developments in the field is application of simulations that allows the creation of large manufactured datasets. Both Benoit (2000) and Bissey & al. (2004) apply simulations to compare electoral systems. Simulations also help solve the case limitation problem, when simulations can create an infinite number of artificial cases by calculating results from actual electoral vote results with alternative systems or creating made-up cases altogether.

Electoral systems and their political consequences still seem to intrigue scholars and Shugart (2005) notes that over 400 citations were found when browsing the *Current Contents* database for articles with electoral system(s) in their titles or abstracts in journals between 1990-2003. The Representation and Electoral Systems newsletter published biannually by the American Political Science Association lists hundreds of books and articles in each issue (APSA online). Since the political consequences of electoral systems have often been explained through electoral systems' features the next chapter will deal with some of the findings on these different features found in the disciplines literature.

5. Electoral Systems Variables

Electoral systems are complicated packages made of many components with their distinct effects as well as interaction effects. Determinants that affect electoral proportionality are election type, assembly size, district magnitude, counting method, possible compensation seats, legal thresholds, geographical concentration and coalition forming possibilities. The following variables of electoral systems cover the variables that according to the vast literature on elections have been seen to have an impact on the overall proportionality or party success in the votes-to-seats transfer. Some of these variables determine the overall aim of the electoral systems, while others are more minor aspects, which may, nonetheless, have an impact on proportionality and party success.

5.1 Election type

The main two electoral system types are proportional representation (PR) and majoritarian systems. By PR systems, we mean all systems using some form of multimember districts to allocate their seats and by majoritarian systems; we mean systems such as First-past-the-post (also known as the Westminster model) or two round majority run-off systems. These elections types are based on some contradictory assumptions on how democracy and representative elections ought to work. John Stuart Mill and Walter Bagehot had already had a fierce debate on whether a form of majoritarian or proportional system was the right choice for England in the 19th century (Mill 1861, Bagehot 1867; also in Laakso 1978). The main choice between these systems is indeed a fundamental one for numerous reasons⁹. In addition, choosing one or the other limits much of the latter choices on other variables of electoral systems. For example, the district magnitudes are very different in PR elections since in the majoritarian system the districts are usually one-seat districts¹⁰. I must note, that the basic aims and assumptions of proportional and majoritarian systems are not identical and sometimes comparisons can be unillustrative between the two. This point will be stressed in chapter five.

Proportional representation system are used in most modern democracies (Lijphart 1994, 21 ; Johansson & Raunio 2004, 93) In the beginning of the 20th century proportional systems had a breakthrough and several countries adopted some form of PR system. After the Second World War, the move towards PR systems accelerated (Laakso 1978, 6). The basic idea behind a PR is to have the seats divided proportionally according to parties' votes, i.e. to all parties the same share of seats as their votes shares would predict¹¹. This is usually done through party lists that may be

⁹ This point is stressed in many parts of chapter "Proportionality revisited".

¹⁰ Some majoritarian systems have included also districts with two seats (for example some districts in the 19th century in Britain).

¹¹ Perfect proportionality is rarely reached or even pursued, but the underlying pursuit for some level of proportionality stays in PR systems.

either open or closed¹². In closed list PR, the votes go for a predetermined party list and in open lists, the party list order is determined by the candidates' personal votes. Assembly seats divided into multimember districts is common for PR systems, although some countries (e.g. The Netherlands and Slovakia) use a single countrywide multimember district.

Another form of PR system is the single transferable vote (STV) that is used in Europe in Ireland and Malta¹³. In this system, voters are allowed to rank order all the candidates within a district, which cannot be too large in size for the electors to be able to rank all the candidates. After the first quota (usually Droop quota) is calculated, the candidates who reach that quota are elected. Then the votes are moved by two means: The extra votes that were not needed for the quota and the votes given to the candidates with the least support are given to the voters' second preferences. The candidates with the least support are eliminated from the following recalculation. The quotas are calculated again and the candidates who are now successful with their new second preference votes are elected. This is done as long as there are seats to be filled. (Taagepera and Shugart 1989, 26-27.) STV minimises the loss of votes and the incentives for strategic voting, since the system is hard to manipulate.

A majoritarian system, on the other hand, aims to achieve a winner for the elections and the winner will be whichever party or candidate has the most votes. The method might be either a simple majority or an absolute majority system. A simple majority (also known as plurality) chooses the party or the candidate with the largest share of votes. If an absolute majority (over 50% of votes) is required, a second round with the two candidates with the most votes or some sort of ordinal ballot may be used (Taagepera & Shugart 1989, 21-22). A plurality election does not aim to maximise proportionality or form a mirror image parliament of the voters. The two largest parties benefit from the system and the party with an even popularity through the districts may win a majority of seats with the minority of votes (Rae 1967, 27). The third party and other smaller parties will diminish in such a system and often a two party system is formed (Bognador 1984, 18; Duverger 1964, 217). Plurality systems are used in Britain and many of the former British colonies. There are many benefits in the plurality systems; for example the connection between the representatives and represented, government effectiveness due to one party governments and the defragmentation of the party system (Riker 1986, 25 ; Johansson & Raunio 2004, 94). The districts are small and the voters can easily follow the actions of their own representative (Crewe, 1985, 45). The strong one party governments are challenged with forceful oppositions and the elections often result in a clear winner amongst the competing parties.

Mixed systems are electoral systems that are designed to have the benefits of both PR and plurality systems. Such systems give the voter two votes – one for a single member district and plurality vote and the other for a larger district applying PR

¹² The issue is widely handled in Karvonen, Lauri (2004): *Preferential Voting: Incidence and Effects*, *International Political Science Review* 25,(2), 203-226.

¹³ The other application of PR, namely SNTV is not used in Europe. For more information, see Reed 2005.

systems. The best-known example of a mixed system is Germany, but also some of the newer democracies (for example in Lithuania) apply a form of mixed-member electoral systems. Moreover, in mixed systems, these tiers are run with both PR and plurality rules to benefit from the (contradictory) gains of the two systems. For example, in Germany, half of the MPs are elected from single-member districts and half from nationwide party lists with PR. The seats are allocated so that the total seats received by each party are proportional to the list seat shares. (Gallagher & Mitchell 2005, 12-13.)

5.2 Magnitude and Assembly Size

District magnitude is the most commonly acknowledged and accepted factor affecting electoral proportionality among scholars (e.g. Rae 1967, & Laakso 1980, Taagepera & Shugart 1989, Lijphart 1990, and Gallagher 1991). The larger the district the more proportional the outcome is. A large district magnitude lowers the threshold a party has to cross to get that first seat and therefore there will be more parties gaining representation and large parties will not be favoured as much. Assembly size has effect through enforcing limits on districting or if a nationwide district is in use then assembly size is equal to the district size.

Magnitude of an electoral system is usually simplified as the average district magnitude (M) of all districts, for example, when comparing countries with each other.

$$M = S / N$$

N = number of districts in a given election

S = All seats in a given election

This may sometimes be misleading since in some elections the electoral districts vary quite considerably. The problem can be illustrated by the following examples:

Example 1.		Example 2.	
D_1	6	C_1	2
D_2	8	C_2	4
D_3	7	C_3	15
DM	7	CM	7

Even though they both amount to the same average magnitude, the consequences the magnitudes have on the success of parties and overall proportionality are quite different. In the first case all district are almost equal and have almost the same

inclusion thresholds¹⁴. In the second example on the other hand, parties will be treated quite differently in the districts. The threshold for gaining the first seat is considerably higher in C_1 as it is in C_3 .

It is easy (even though not always informative) to calculate the average magnitude for single tier systems and in many countries, there is in fact only one level of seat allocation, but in several electoral systems there are more than one. Electoral tiers are different levels on which votes are transferred to seats. Lower tiers typically represent geographical areas within a country while the higher tier may represent the nation as a whole (Golder 2005). The reasons behind these tiers or allocation levels are complex, but they often act as a corrective method to improve on small district disproportionality problems or, as mentioned before, try to combine benefits of two or more election types.

5.3 Thresholds and Alliances

Legal thresholds are commonplace in modern electoral systems. In Europe, they are usually from three to five percent. Legal thresholds are applied to lower the party field fragmentation linked with high level of proportionality. Both national and district level thresholds can be applied and these thresholds set a limit as to how high a proportion of the national (or district) vote share a party has to have in order to gain any seats. If the limit is not exceeded the party will be disregarded in the seat allocation. When the legal threshold rises, proportionality decreases. Parties that fall short of legal thresholds are not considered at all while dividing the seats and their votes are essentially wasted. The aim of these thresholds is to lessen party field fragmentation by dropping the smallest parties all together. Large parties in order to block out any of the smaller rivals may naturally also use such thresholds politically. A high threshold may also have a psychological effect on the voters who stop voting for the small parties when they that a party may have difficulties in crossing the threshold. Legal thresholds should not be confused with other thresholds used in electoral studies, such as empirical thresholds (counted from electoral data) or theoretical thresholds (predictions formed from the electoral system characteristics).

Electoral alliances (also known as *apparantement*) are allowed in some electoral systems to eliminate the inbuilt discrimination against small parties. In such an alliance, two or more parties form an alliance and their votes are counted as if they were one party. The idea behind allowing such alliances is often the hope of minimising the waste of small party votes (Anckar 2002, Maunula 2007). These alliances are prepared sometimes year before the elections (Pesonen & Borg 2005, 35). The reason for small parties to take part in such an alliance is to overcome some legal or hidden thresholds. On the other hand, large parties also look for benefits wishing to gain the last seat or keep out their rivals. Such alliances may cause quite

¹⁴ Threshold of inclusion (also known as threshold of representation) is the minimum vote share needed for a party to gain its first seat, when the most favourable conditions apply (Lijphart 1994, 25).

large distortions in proportionality when parties, which would otherwise have no seats, win seats due to beneficial alliances and seats are so “moved” from the parties that would win them otherwise. This is clear from article four (Maunula 2007), which shows how well the alliances have benefited some of the small parties in Finnish districts. In fact, one might wish to study alliances as single parties to avoid the exaggeration of disproportionality caused by alliance vote shifts, but the author finds this unnecessary since parties that ally for electoral purposes often share no further interests after the elections. The viewpoint here is that the permission to form alliances is one of the electoral system variables, not a property of the parties.

5.4 Counting Methods

A counting method (or electoral formula) is the rule used to divide the votes into seats i.e. a method of translating vote totals into allocations of seats among the competing parties and candidates. What matters is the locus of vote accumulation and the specific technique used to translate the vote sets into numbers of seats. Votes can be given, as mentioned before, to either a closed list of parties or individual candidates. Thereafter the total share of votes for each party determines its vote shares (if there are no thresholds or alliances).

The two main groups of counting methods are largest remainders (LR) and highest averages (HA) methods, which divide the seats in a somewhat different manner. Largest remainders include counting methods such as Hare and Droop quota. In these methods the votes given (V) in a district are divided by the number of seats (M) to get a single seat quota (Hare). A quota is the number of votes that is calculated by sharing the number of all votes in a district by the number of seats allocated (M) within a district. The remainders are the rest of the votes that are left after all the quota seats have been distributed and, as the name reveals, this is done by awarding the next (non-quota) seat to the list with the largest remainders. In other cases, such as Droop, Imperiali and reinforced Imperiali the number of seats divided ($M+1$, $M+2$, $M+3$) is added to some seats to decrease the quota in order to produce smaller remainders. If the quota is so low that no remainders are left to be divided, the Hare quota approaches the d’Hondt method, which is one of the highest averages counting methods. Lower quotas and less to share in remainders usually work against small parties, even though they might make the access to the first seat easier. Lower quotas also increase disproportionality while benefiting the large parties (Lijphart 1994, 23). The remainders may cause results disproportional to the party sizes, but large districts may improve proportionality (Taagepera & Shugart 1989, 23).

The highest averages methods include counting methods such as d’Hondt and Sainte-Laguë or its modified version. In these counting methods, a particular set of divisors is used to divide the seats. The candidate that has the most personal votes (open lists), or was first on the closed list will have the total amount of seats for the party divided with the first divisor, the second candidate with the second divisor etc. The most common divisors in Europe are d’Hondt and Modified Sainte-Laguë and their divisors are the following:

(m equals the amount of seats in a district)

D'Hondt	1,2,4,..., m
Mod. Sainte-Laguë	1.4, 3, 5,..., 2m-1

These counting methods have been widely studied both empirically and theoretically and the order concerning proportionality has also changed with time. The counting method is a highly debated issue in electoral system research and even though variance in the level of proportionality produced by different methods is acknowledged the order in their proportionality outcomes has not entirely been agreed upon.

Both theoretical (e.g. Loosemoore and Hanby 1971, Laakso 1980, Lijphart 1986, Gallagher 1992) and empirical (e.g. Blondel 1969, Gallagher 1991, Benoit 2000) studies have been conducted to classify counting methods according to their proportionality levels. Lijphart (1990, 1994) concluded that LR-Hare was the most proportional method followed by the Droop quota. The d'Hondt counting method is often considered to favour large parties (Laakso 1978, Schuster & al. 2003 ; Sundberg 1996, 226) whereas Modified Sainte-Laguë is regarded fairer for all parties and a recent simulation study positions it before the LR methods in proportionality (Benoit 2000). According to Laakso (1979), modified Sainte-Laguë does give some benefits to middle sized parties, while penalizing small ones with a relatively high first divisor. The empirical findings of Schuster & al (2003, 652) point out that both the Hare quota and Sainte-Laguë are practically unbiased in their seat allocations for all parties. According to the large empirical data of Benoit (2000), the most proportional is the Sainte-Laguë highest average counting method and the least is plurality. He also claims the counting method as important a factor as district magnitude.

In article one (Suojanen 2006) of this thesis some counting methods were shown to have an effect on EP electoral results while working together with the district magnitudes. The d'Hondt method helped the large parties and made the overall results less proportional, while Hare quota increased proportionality and small party success. Results on modified Sainte-Laguë were contradictory to earlier studies. Article three (Suojanen 2007b) on the other hand shows that a change between to highest averages methods (from d'Hondt to modified Sainte-Laguë) had no effect on the overall accessibility and proportionality when the Swedish national electoral system was studied.

5.5 Other Variables of Electoral Systems

Some electoral systems have additional *compensation seats* that are distributed at another level than the district seats and are aimed at increasing the overall proportionality of the outcome. These are also referred to as *tiers*. Multiple tiers are also used in the mixed systems mentioned earlier. The tiers can be parallel or one can be a compensatory tier to the first one. These systems can also be called additional member system (AMS) or mixed member proportionality (MMP). This separation

underlines the connection or separation in the case of AMS of the tiers. In a parallel (or AMS) system, the tiers are separate and neither is higher than the other. In a compensatory mixed system (or MMP), the second tier aims to correct the disproportionality of the first tiers results. (Shugart 2005; Gallagher and Mitchell 2005.) Compensation seats are used to compensate for parties that are underrepresented at the district level and they make the electoral outcome more proportional nationally. These seats are allocated usually across the country to compensate for the low level of seats in a district to a party that has a higher vote share from the nationwide vote pool. More tiers than the district tier and the compensatory tier might also be used, when for example party lists and candidates are run on separate tiers as in Estonia.

In PR systems *list form* can be open (often referred as personalised) or closed, so that in the first the vote goes to a candidate on the list and on the other to the whole list pre-organised by the party elite. The form of lists has an effect on both voting and how candidates are chosen. It has also been proved to have an effect on parliament member behaviour (Hix 2004, 219). The closed lists give more power to the party elite and make the candidate selection more centralised. A personalised vote on the other hand focuses much of the attention to the personal characteristics of the candidates. Some countries, for example Sweden, use a closed list system with the possibility of also giving a personalised vote that may affect the order of the candidates on the party list.

An election cannot be conducted without an *electoral ballot*. The ballot form may be *categorical* or *ordinal*. In a categorical ballot, the voter gives her vote to a single candidate or party list, marking this her first preference over others. In an ordinal ballot, the voter may put the candidates in a preference ranking order and the votes may be transferred to other candidates if the first candidate does not succeed in gaining seats. In an ordinal ballot, the preferences may be allocated to a single party list (cumulative party-list ballot) or divided to more than one party list (Panachage party-list ballot). (Rae 1967, 17-18.) Categorical ballots are commonly used in the Nordic countries and ordinal ballots, for example, in countries using single transferable vote (STV). A third possibility for the ballot form can be the so-called approval vote, where a voter may cast votes to all the candidates she approves (Taagepera and Shugart 1989, 13). If the ballot form is anything else than categorical, many of the concepts of proportionality and its measurements become vague and unclear. This due to the fact that proportionality indices only measure the first votes and do not take into account the fact that the voter may be allowed to give more preferences to other candidates, as with STV.

6. Electoral Proportionality Revisited

Placing the electoral proportionality as a leading criterion for electoral systems gave rise to PR systems in mid-nineteenth century (Laakso 1980, 249), Proportionality has been central to electoral studies for centuries and it has been quantified, measured and argued about on numerous occasions. When electoral systems or their variables have been compared they have often been compared and ranked on their level of proportionality and somewhere between, or even on the lines, the message of superiority of the more proportional has been quite easy to find.

Is more proportional really always better? If it is – the question is to whom and why? To pinpoint the complex nature of this question one must first define the actors or possible winners and losers in the electoral process. However, before going into the actors and the impact the electoral system has on them, a short definition of proportionality in electoral studies is necessary. Therefore, the concept of electoral proportionality is introduced and its use in different types of elections is briefly dealt with. I shall also consider what has been said about the benefits of proportionality in earlier studies and how they effect of proportionality for the agents involved. Thereafter I shall describe some system effects. Lastly, I attempt to answer the question as to whether more proportional is always better.

6.1 Proportionality defined

Proportionality basically means the proximity of seat shares to vote shares. Proportionality can be measured for any party or the system as a whole. When a party gains seats according to its vote share then perfect proportionality was reached for that particular party. When the whole election or numerous elections are studied, proportionality is also often mentioned and measured. An election or an electoral system is said to be proportional if all parties have seat shares close to their vote shares. Perfect proportionality would be reached if all parties' vote shares V_i would be equal to their corresponding seat share S_i . In terms of Taagepera and Laakso parties' advantage ratios (A) would be equal to one (since $A = S/V$). Electoral results can rarely be perfectly proportional, since seat shares cannot be distributed exactly on the lines of the vote shares, since only whole seats are distributed.

Proportionality is not the only aim of electoral systems and sometimes other areas of the electoral process are stressed. Arend Lijphart (1999) describes in his classification of political institutions that there are majoritarian and consensus democracies and these represent quite different visions of what elections should aim for and who indeed should be represented. Majoritarian democracies commonly use a Westminster model also known as First-past-the-post (FPTP) or majoritarian electoral system, while the consensus democracies rely on some form of proportional representation.

The majoritarian systems concentrate the power in the hands of the largest party to form effective governments that do not need to compromise and can make hard decisions when in office. In elections, the voters can evaluate the government's performance and decide whether or not they want to replace them with the competing party or not. In consensus democracies, multiple parties usually form governments together and bargaining and compromise is essential to the governments work. The aim is broad representation and widespread agreement in the society and proportional representation electoral systems work to enforce this viewpoint and create such a political environment. (Norris 2001, 878-879.)

So where do we find extreme proportionality where seats and votes are shared as close as to be almost identical? Such a system would have a very large district magnitude, no legal threshold, and no possibility for party coalitions and would use one of the most proportional counting methods. For our purposes, we imagine a country with such a system and study how different parts and agents in the electoral field and politics are affected by this very proportional system.

To compare and evaluate the extreme PR system in areas related to proportionality I shall look at which agents its main rival, the FPTP system, benefits and how. In this system all the representatives are elected from single-member districts with plurality (simple majority) of the votes. A real extreme example would have a multimember district using a plurality rule since relationship between magnitude and proportionality is reversed under plurality. High M and plurality lead to extreme disproportionality. (Taagepera and Shugart 1989, 23.) The British system has been considered the opposite of PR for decades and it is also used among studied cases in this thesis. I do acknowledge that there are plenty of systems in between these extremes and PR systems especially come in many forms, but for purposes of comparing extreme proportionality and non-proportionality these will provide the extreme real life examples also found among our cases. This comparison of the extreme PR case and FPTP runs through the whole chapter.

6.2 Key players and system effects

Players here are parties and voters, both quite essential to modern elections. Parties and candidates are key players in elections and they are also among the most studied agents of the electoral process. I acknowledge that what is good for the party is not necessary good for the individual candidate in all parts of the electoral system¹⁵, but when proportionality is concerned, the candidates' interests lie with the party's interests. Both the party and its candidates have an incentive to maximize the advantage gained from the electoral system for their particular party. Parties are also not of equal size and strength and many benefits of the big parties are detrimental for the small and vice versa. Different sized parties must therefore be treated separately.

¹⁵ For example, closed lists benefit the party elite, while open list give the candidates more room for maneuver.

In some systems, parties also differ in their level of local concentration. In many cases, not all the competing parties in a particular election run in all districts. In those cases, different mechanisms of electoral systems benefit or hinder nationally large and locally strong parties.

Locally concentrated and successful parties distort the proportionality of the overall system, since they sometimes gain a much higher seat share than other (nationally spread) parties their size. This is evident from article three (Suojanen 2007b), as to some of the locally strong minority parties. This seat gain will influence the overall proportionality; since one's disproportional success will be the other's loss. This can also be true if party coalitions are allowed, since such coalitions sometimes benefit some of its members disproportionally. This effect is evident from some of the Finnish districts as seen in article four (Maunula 2007).

The other key actors are the voters. How are they affected by high or low proportionality? What types of wishes do the voters have when it comes to the outcomes of the elections? Do they wish for a mirror-like group of representatives resembling themselves - or a less representative but more effective parliament and a strong opposition?

The third factor affected by the proportionality of the elections I will call system effects. This includes how proportionality influences government stability and effectiveness. Also some views on keeping peace through institutional choices, including electoral system choice are introduced. The variety of views represented and expressed in the society may also be affected by the electoral system, through the party system and policy choices. These effects are of course linked to the voters' and parties' interests as well, but I will deliberate on these effects separately.

6.3 How parties are affected?

Parties are known to aspire for power through seats in parliaments or other places of representation. The power of a party depends on its voting power and importance in votes and coalitions within the parliament. Larger parties usually have more power and smaller parties have less¹⁶. Parties aim to win more votes in order to win more seats in order to become more important in the political arena. Usually the strongest party (in seats) will be in government either alone or with smaller parties if their strength is not sufficient to form a majority government. Overall, majoritarian systems form single party governments and PR systems multi-party governments. The role of the governmental parties and opposition are very different in such systems.

Parties are not a heterogeneous group of actors even within a country. The effect an electoral system has on a particular party largely depends on two factors, namely party

¹⁶ There is a whole area of study concerning power and power indices, which we will not be covered in this thesis. For an overview see Felsenthal D. & M. Machover (2005): Voting power measurement: a story of misreinvention, *Social Choice and Welfare*, Springer, vol. 25(2), 485-506.

size and geographical vote concentration. Small parties are quite commonly known as losers in the electoral system game. The first classics of Duverger (1964, 206) and later Rae (1967, 70) both acknowledge that electoral systems work as a kind of a brake limiting the number parties and this elimination usually happens in the case of small parties. They also say that this is a feature common to all electoral system, but note that how much the party field is narrowed depends on the electoral system. If the level of proportionality is down, usually some of the competing parties have been blocked from gaining any seats. This can be done through explicit methods such as a legal threshold, but even more commonly the cut off point, if not determined by the actual threshold, is affected by such variables as district magnitude and counting method. If small parties fall under this threshold, they will obtain no seats and eventually their support diminishes because of strategic voting (e.g. Powell 2000, 23; Cox 1997, 31). If party coalitions are allowed, small parties can benefit from their larger partners and surpass the legal or empirical threshold. This will then cause distortion in the overall proportionality.

In PR systems, large parties are also quite often at a better advantage than the small parties. The weakest parties are quite often eliminated in PR systems as well, even though - in contrast to majoritarian systems - the parties are eliminated by the electoral system during the seats-to-votes transfer. Proportional systems offer easier access to small parties and ethnical minorities for representation (Anckar & Lundell 2004, 110) In majoritarian systems, the smallest parties do not even run in the elections, since they know that their chances are minimal. (Rae 1967, 78-79.) The overall distortion from proportionality also only tells just a part of the story, since both upward and downward distortions are calculated. Whether proportionality is beneficial for a certain party depends on the size of party in question and whether the disproportionality concerns over- or underrepresentation. For a party, the direction of the distortion is at least as important as the extent of it. Therefore, to gain the overall picture of proportionality we should calculate (or plot) both the overall proportionality of the system as well as proportionality averages for different parties. For this reasons proportionality plots are used in article one (Suojanen 2006) and four (Maunula 2007) to gain a more comprehensive view on party success in the studied cases.

6.4 How are voters affected?

Next, we will examine some of the ways that voters are affected by the choice of an electoral system. These effects include voter satisfaction, turnout, contact between voters and representatives, level of choice, closeness to the median citizen, and vote equality to preferences.

Proportionality is among the main components affecting satisfaction in democracy among voters. According to many studies, the more disproportional the elections are the less fair they are considered amongst voters (Anderson & Guillory 1997; Farrell & McAllister 2006). Farrell and McAllister also point out that candidate-centeredness (open lists) promotes satisfaction among the voters in PR systems. Other variables promoting satisfaction were large assembly size and somewhat contradictorily, small

districts (Farrell & McAllister 2006). Some findings by Norris contrast these findings; she points out that some forms of majoritarian institutions produce greater confidence in institutions (Norris 1999, 223). The voter satisfaction problem still seems partly unsolved, but most of the studies do find a positive link between proportionality and voter satisfaction.

Declining turnout (which is closely connected to voter satisfaction) has been a consideration in many of the western democracies. PR systems have frequently been suggested to promote higher turnout than majoritarian (Powell 1980). According to the findings of Blais & Carty's (1990), electoral systems also matter on the level of voter turnout in a given country and PR systems are often said to contribute to higher levels of turnout. The reasons behind PR promoting turnout are three-fold. First, the low distortion (a.k.a. high proportionality) of the result makes the system feel more efficacious and less alienated from the voters' preferences. This then makes voters more inclined to turn up to vote. Moreover, in PR the districts are less often non-competitive and parties have more incentives to campaign, which then increases turnout. Grönlund points that local political structure i.e. the local political dualism or homogeneity influences the voters, when they make their decision about voting. This influence is stronger where a plurality system is used. (1999, 204.) Thirdly, PR increases the number of parties and thereby the variety of options available to voters. Some counter arguments focus on decisiveness and simplicity, i.e. proportional representation brings about less decisive and simple outcomes than plurality systems. According to Powell (1980), a simpler rule brings about more participation.

The smaller the district the easier it is for the voters to identify their "own" representatives. There is definitely a very important trade-off between proportionality and voter-representative closeness, since district size is a key factor of proportionality. FPTP systems identify the representative quite clearly and in order to get re-elected the politicians know whom to please. On the other hand, this can lead to solo projects within the parties and localised politics even at the national level. The party elite on the other hand has an opportunity to decide which seat a certain politician contests and less competitive seats are assigned to obedient politicians as compensation. In large district PR systems that might perform well when it comes to proportionality the contact with the representatives is often vague.

The level of choice for a voter is affected by both the number of competing parties and their policy positions (Brockington 2004, 471-472). Plurality elections limit the choices quite strictly by limiting the party field to two important competitors. Both voters and party elites contribute to this issue. While courting the average voter the competitors have quite similar views on issue positions, which makes the elections insignificant, as the choices the voters make do not affect the policy outcomes (Downs, 1957). So, while plurality elections reduce proportionality and the number of parties it also lowers the number of choices and makes the choices available fruitless for electors.

Powell (2000) stresses the difference of majoritarian and proportional visions of democracy. In the majoritarian vision, the citizens use the elections as an instrument to choose between two competing teams and concentrate the power on one of them. In a

proportional vision, the electors use the elections to choose political agents that represent the diversity of the people and these people will run the country through bargaining (p.233). There are some trade-offs in concentrating the power on one party, since if the country is not very homogenous many voters' views will be overlooked. One of the claimed advantages of the majoritarian system is that it is said to bring the government closer to the median citizen. In Powell's findings (2000; also in Powell and Vanberg 2000) the proportional system is actually better at forming governments close to the median citizen.

6.5 System effects

By system effects, we mean the ways in which choices between PR and FPTP influence the political system and its stability. The system effects listed here are, power sharing versus centripetalism, width of the political alternative field, and success of new ideologies.

Some countries have different ethnic and or religious compositions and many theorists have tried to find out what kind of an electoral system would suit such heterogeneous countries. The theory of consociational (or power-sharing) democracy (Lijphart 1977; Lijphart 2004) stresses power-sharing and group autonomy as key elements when planning institutions for a heterogeneous society. The aim of power sharing is to include rather than exclude minorities, although one should also try to maximise the size of the ruling majority. This can be accomplished by a set of rules covering points such as the electoral system, government formation and executive power sharing (for a complete list, see Lijphart, 2004, 99-106). Consociationalism has been challenged by centripetalism (e.g. Horowitz 1985) which encourages ethnically divided societies to choose electoral systems that give rise to cooperation rather than division in the legislature. Therefore, the often-promoted electoral system by the centripetalists is some form of preferential voting (similar to STV). Although Horowitz does also agree, that if there is a choice between PR and FPTP, then proportional systems are preferred (1985, 171, 173). Also Hermens (1941) was suspicious about the benefits of PR systems, since he thought they gave opportunities to small and often extreme parties (Karvonen 2003, 94 ; 117).

Lardeyret (1993) and Quade (1993) both see proportional representation as a problem for good governance. According to them, PR brings societal cleavages into governmental institutions causing insoluble differences in them. Powell (2000) has also found that government durability is lower in PR systems than in those employing plurality or majority rules. According to Bohrer, new democracies have different reasons to consider carefully the benefits and drawbacks of different types of electoral systems than established democracies. He concludes that less proportional electoral laws are more successful at maintaining democracy, be it a plurality system or a PR system. The choice of electoral system can be encapsulated as a choice between inclusion and stability. (Bohrer 1997, 223-225.)

The effective threshold and disproportionality are very closely correlated and the more difficult gaining representation for parties is, the further the results are from perfect proportionality, on average. In Powell and Vanberg (2000) findings, the extreme left and right drop out first when the effective threshold rises, so while the disproportionality rises the variance of represented preferences declines as well. The results are still close to the median voter but small party views are discarded. Consequently, if another criterion for good representation, i.e. close median correspondence is applied, then proportionality cannot be the measure used for the good quality of the system performance. Powell and Vanberg question whether votes really imply preferences. If they do not, vote-seat proportionality is no longer the key question; it becomes the correspondence between the chosen majority, and what people really want. (Powell & Vanberg 2000, 410.) Such a view would indeed make the question about how proportionality should be accomplished quite vain.

Majoritarian electoral systems prevent quite efficiently the success of new parties. This may be a benefit or a disadvantage of the system depending on the point of view. Radical opinions will be suppressed, but on the other hand the choice between new influences either for the good or for bad is difficult to make and one should ask, who should make it? Should it be the legislators engineering the electoral system or voters during elections? Should the voters actually have more choices – be they something new and even radical if they choose to? The lack of new movements in the political field also makes the arena not only stabile but also boring and cliquish, which lowers interest in politics and turnout. Such factors as low turnout and voter satisfaction, which are mentioned as effects on voters, affect the level of legitimacy of the government, parliament and all the policy decisions and laws they implement. A low legitimacy of the political system can lead to unrest or even a revolution.

In article two (Suojanen 2007a), the accessibility of the electoral system is studied in changed electoral systems. In the case of the European parliament, the electoral system for the UK was changed in 1999 from a single member plurality system to a multimember PR. This does indeed make the system more permissive for small parties according to all used indices. On the other hand, the minorities in the national elections of the UK that still uses FPTP were studied in article three (Suojanen 2007b) and the successes the small minority parties had were not congruent, since the Welsh minority party succeeded better than the minority parties in Scotland, even though the system is same for both. In Lithuania, where a parallel mixed-member system is used the Polish minority performs a lot better in the single seat plurality elections than in the PR elections. The conclusions of article three are that the unity of the minority and geographical concentration of a party's electorate count more than the electoral system.

6.6 Contradictory Implications of Electoral Proportionality

Not surprisingly, the effects of choices made between proportional or majoritarian visions of democracy, have a multitude of consequences for all agents involved. Parties are not affected equally and what is the best for one party is the worst for

another. The parties in power have a very low incentive to change the electoral system that gained them success and this will remain one of the main blocks for electoral reform. If party leaders were to look further into the future, they would ask themselves: If we were to lose, do we want to lose totally or maybe still be able to share some of the power, though not all. If small parties aim for seats in the government, then PR is the obvious choice, since small parties usually sit only in coalition governments.

Some electoral systems seem to be more satisfactory for voters and inspire more turnout than others. The evidence in earlier studies is somewhat contradictory on this, but on the whole, PR remains the choice of many scholars as what will lead to increase turnout and make the elections more popular. One would imagine that the voters are quite different and a voter who prefers a large party prefers a different electoral system than a small party voter. Coalition governments that usually form after PR elections are preferable to small party supporters, since they never form a single party government on their own. The strong point of majoritarian system, contact between voters and representatives is hard to deny, even though it is possible that the representative of a particular district has only less than half of the electorate's votes. The claim that majoritarian systems form a government closer to the median citizen has been found false. The low number of choices and centralized policies that limit the choices in majoritarian systems and proportional representation, through allowing more parties to acquire seats, could also widen the party field and options. Naturally, this would bring about more information costs for the voter and some might prefer only having two real options.

Keeping peace in a country can sometimes only be achieved through inclusion of as many minorities and opinions as possible. This is why Lijphart and many others after him praise the PR systems and recommend them in a straightforward manner to heterogeneous societies. Along the same lines, the elimination of the radical parties when proportionality decreases would also deny views of the few and stress the views of the many. New parties and ideas are also easily depressed in highly disproportional majoritarian systems and the large established parties would be the only possibilities. So if many voices should be heard, be it for reasons of stability or respect for all opinions, no matter how radical or minor, proportionality is definitely an issue. We could even say that for diversity being more proportional is always better.

Setting aside the diversity issue, is more proportional always better? I must conclude that the benefits or drawbacks of proportionality would depend on who you are as well as what your aims are. Candidates, representatives or voters of different parties are affected by proportionality in different ways. Some personal or group interests may often collide with the interests of a wider public or the whole country. Issues like peace and equality have their defenders, but so do issues like government effectiveness and ties between the representatives and the represented. Should the elections offer maximal choice for the voters or guarantee one winning party? Important issues like the transparency and simplicity of the system or regional and minority representation also lead to different guidelines for the best electoral system. There is definitely no universal truth about proportionality and choices made between proportional and majoritarian systems can both be wrong or right, depending on whom one wants to govern and who should be represented.

7. Methods of Electoral Studies

Electoral system methods are vast but at the same time limited. The data and the number of cases often rule out sophisticated statistical models. Electoral systems themselves work in countries and areas, which are usually at most numbers in tens or hundreds. Often a more in-depth look is also necessary into the countries or areas, which keeps the number of comparable cases low. Traditionally electoral systems and their effects have been measured by indices that have been especially developed for this purpose. These indices measure mainly two things – the amount of proportionality (or disproportionality in many cases) of the electoral outcome or the size of the party field. The other, perhaps less common tool of studying the outcomes of electoral systems are plots or figures.

We will next look briefly into some of the most common indices used for measuring proportionality and party field form focusing on the ones that have been used in this thesis. Numerous indices in both disproportionality and party field measurement have been proposed in the past decades, but here the review is limited to the commonly excepted ones with some notes and references to other indices.

7.1 Indices of Proportionality

Many of the most well known indices measure how much a system is distorted from perfect proportionality. Each party may distort from proportionality by gaining more or less seats than the votes would yield. The system disproportionality on the other hand measures usually the over all distortion, both up and down. When in electoral studies the concept of measuring proportionality is under study one must note two things. Firstly, the indices measure deviation from proportionality rather than the level of proportionality. Secondly, when the level of disproportionality is raised we move away from an absolute standard to a relative one (Gallagher 1991, 33). An index of proportionality is simply a mathematical function aiming to translate the distribution of each party's votes and seats into a single number (Borisjuk & al. 2004). There can be a strong correlation between the indices (Lijphart 1994, Gallagher 1991), and each index can capture a different side to the measured phenomenon (Fry and McLean 1991). Many of the indices were already created in the sixties and seventies and they are often based in some rules of natural sciences. The data needed for these calculations include vote and seat shares of the parties and sometimes the number of competing parties.

In this thesis two of the most used and commonly recognised as the most solid ones according to several criteria (Taagepera and Grofman 2003) have been used, namely the Loosemoore- Hanby index from 1971 and Gallagher least square index from 1991. Taagepera and Grofman introduced criteria inspired from theory and some practical criteria to compare indices that have been used or recommended by some authors¹⁷.

¹⁷ For a complete set of criteria, see Taagepera and Grofman 2003, 665-669.

They conclude that indeed Loosemoore-Hanby and Gallagher's least squares satisfy more criteria than any other. According to these criteria, both indices should be used to measure proportionality deviation, but also for volatility of votes or seats, malapportionment and ticket splitting (Taagepera and Grofman 2003, 673).

The Loosemoore-Hanby index measures the extend seat shares won by a party deviate from the party's vote shares and sum up these numbers to give a value for the whole election's deviation from proportionality for all parties (Loosemoore and Hanby 1971, 468). The index will note both under- and overrepresentation for each party and may have values between zero and hundred so that 0 means perfect proportionality and 100 that a party with no votes would receive all the seats (Taagepera and Shugart 1989, 105).

The Loosemoore-Hanby index (D) is calculated as follows:

V_i and S_i are vote and seat shares for each party i

$$D = \frac{1}{2} \sum |V_i - S_i|$$

Gallagher's critique of the commonly used Loosemoore-Hanby index was the fact that the index did not pay attention to the number of parties involved in the election and he aimed to minimize this problem along with other problems troubling the earlier indices. He pointed out that the number of parties and their relevant sizes were to be taken into account so we know how the index is reached. The index uses a least squares method to avoid the problem earlier indices had. This index also gives a proportionality deviation value for each election but registers large deviations in party success more strongly than many small ones (Gallagher 1991, 40). It also runs from zero to hundred - zero representing perfect match between votes and seats and hundred the most extreme deviation from it. The Gallagher least squares (G) index is calculated as follows:

$$G = \sqrt{\frac{\sum (V_i - S_i)^2}{2}}$$

These two indices above have been used for the articles in this thesis but a large number of others exist. For an extensive list of indices measuring proportionality (or rather disproportionality) and their properties see Aleskerov and Platonov (2004) or Borisyuk & al. (2004).

7.2 Indices of Party Field and Single Party Success

Measuring the party field and single party success has also inspired many scholars to develop various indices. One could always count the absolute number of parties competing or winning seats but since parties are usually not equal in size – be it votes or seats – other indices have been proved useful. The *Herfindahl-Hirshman* (HH) index

was one of the first indices developed to describe the party field concentration. This index has worked as a base for many newer indices. This index is calculated as follows:

Where p can be vote or seat share of party i .

$$HH = \sum_i p^2$$

The squaring of the vote or seat shares gives weight to large parties. If this index approaches zero the party field is very fractionalised and if it approaches its maximum, one, the party field is very unified¹⁸ (Rae 1967, 56). Douglas Rae made a minor development to this index; his own *Fractionalisation index* (F) whereof the HH is a complement.

$$F = 1 - (\sum_i p^2)$$

This index also runs from 0...1 and where zero means a perfect one party system with no fractionalisation and one complete fractionalisation, which is an event that in reality never occurs, since in such a system each voter would choose her own party (Rae 1967, 57).

Laakso and Taagepera (1979) developed the *effective number of parties* (N), which is also based on the Herfindahl-Hirschman concentration index. Their aim was to develop an index that would straightforwardly show the number of relevant parties rather than the number of all parties. The effective number of parties may be calculated from both vote (N_v) and seat (N_s) shares in the following way.

$$N = 1 / \sum_i p^2$$

The large parties are thus weighted to obtain a number that would intuitively show the number of relevant parties. This number is often close to the number of parties exceeding ten percent in their vote shares, but since fractions are possible, it is more informative than the mere number of parties with vote shares higher than ten percent (Taagepera & Shugart 1989, 80). The values of this index will resemble more intuitively the number of relevant parties. When $N=2,2$ we have a two party system with some weak parties and when $N=4,8$ we would have almost a five party system. Sometimes, instead of effective parties, the loss of effective parties ($N_v - N_s$) is calculated to estimate the effect of the electoral system on the party field. The index depicting the loss of effective parties was used in article two (Suojanen 2007a) when the effect of electoral systems and their changes were in the focus.

¹⁸ Rae calls this the Probability of Diadic Agreement

Advantage ratios have been used for the proportionality profiles (Laakso and Taagepera 1978, Taagepera and Laakso 1980, Taagepera and Shugart 1989) as well as later in studies looking into single party successes (Taagepera 1994; Elklit 2007; Suojanen 2007b)). This is an index that is simply calculated by dividing a party's seat share with its vote share ($A = V / S$). The index will give a value of exactly one when the vote and seat shares are exactly the same. A value over one implies overrepresentation and value under 1 underrepresentation. This ratio may reveal the party's success in a particular election or district or one can calculate an average over time or between districts to gain an overall picture of degree of success of a party.

There are numerous other indices developed to measure issues related to electoral systems such as power in elected bodies i.e. power indices such as Shapley-Shubik and Penrose-Banzhaf indices that *measure a priori voting weight and possibilities parties have in parliaments or other coalitions*¹⁹. Since seats and therefore power measured by these indices are derived from votes Laakso introduced an electoral justice criterion linking votes to power via the Shapley-Shubik index and discovered that electoral justice index exceed values measured by a disproportionality index (Loosemoore-Hanby in this case). This indicates that even more than seats, power is concentrated in the hands of the large parties. (Laakso 1980.)

7.3 Plots

Plots (often also called graphics or graphs) and are an additional instrument for electoral studies. Some very specific ways of plotting electoral system outcomes have been developed. In his book *Visual Display of Quantitative Information* Edward R. Tufte demonstrates that graphics reveal the data. He also points out that graphs present many numbers in a small space and make large data sets coherent. (Tufte 1983, 13.) From plots, we can also often see connections between variables and we can use them to classify or compare cases. In addition, compared to indices that compress a lot of information in one number, plots may show more of the data. On the other hand, plots have their limits, as comparisons remain dependent on chosen groups and measurements are much more vague, since they are not necessarily numbers but areas or forms we compare. When using plots to compare cases or clarify a single phenomenon one has to be sure that the plots bring some added value to the study. They may be helpful to illustrate a difficult and multidimensional problem or to make it easier to grasp for people not so familiar with the field of electoral studies. The electoral studies have included plots for both empirical and theoretical studies. In this thesis the plots I have applied are proportionality profiles developed by Laakso and Taagepera (1978) and a radar plot that developed to clarify the comparisons between changed electoral systems.

¹⁹ For a complete list and applications see Pajala Antti (2002): *Voting Power and Power Index Website: a Voting Power WWW-Resource Including Powerslave Voting Body Analyser*. [online]. Published 22.4.2002. University of Turku. Turku. <URL:<http://powerslave.val.utu.fi/>>.

The aim of the proportionality profiles is to reveal the overall picture of an electoral system at work and be able to classify these results according to the plot findings. These profiles were developed to observe from electoral data of parties' vote and seat shares how proportional the electoral results had been and how different sized parties were treated. Usually, data from more elections than one is required for valid results. Other graphical methods applied to electoral studies have been the Nagayama diagrams and Simplex presentations (Grofman & al. 2004). Triangles developed by Saari (1995, 33-34) may be used to present outcomes that may result when positional voting is used (e.g. Nurmi and Suojanen 2004). In article two, a six-way radar plot is introduced to illustrate impact of change in electoral systems and merge several indices in an intuitive plot (Suojanen 2007a).

Some studies of electoral systems may aim to explain other outcomes than proportionality or party field size. For example, studies on the electoral systems effect on government formation and especially durability are numerous (e.g. Blais 1991; Norris 1997). Even though electoral systems are often studied with the help of indices and /or plots some statistical analysis have been applied (e.g. Lijphart 1994, Benoit 2000, Anckar 2002). Taagepera and Shugart (1989, appendix B) also argue that plots studied by experts reveal much more than formal statistics and stress the importance of visualisation, simplicity and reasoning through models. As stated before, the number of natural cases (countries, districts) is often limited and not sufficient for statistical purposes.

Summaries of the articles

In this chapter, the articles included in this thesis are summarised and their main problems and findings are briefly outlined. All the articles included seek to find out what happens when votes are turned to seats through electoral systems. How proportional or accessible is a given electoral system? The focus of the articles may differ, but the main point remains – electoral systems matter. They matter to all sizes of parties in national and EP elections and at the district level, they matter to minority parties and if an electoral system is changed, this will indeed have consequences on the overall proportionality and accessibility of the system for small parties. As the reader will realise, the author is quite keen on presenting electoral system consequences in plots. Even though most of the vast literature that is written on this matter uses indices and other numerical data for presenting their point, a picture can sometimes tell so much more. Even if indices are used, they do not clearly signify much to the reader, before she is familiarised with the index and its qualities.

In the first article (Suojanen 2006) “Proportionality in the European Parliamentary Elections: Evidence since 1979” the proportionality profiles developed by Taagepera and Laakso in 1980 are applied to the European parliamentary elections. Proportionality profiles have earlier been used for describing and comparing effects of national electoral systems. In this article, I apply these profiles to European parliamentary (EP) elections in the countries of EU15 from 1979 to 2004 (or since a particular country has joined the union). Since the electoral systems of the EP elections closely resemble the national elections in the respective countries, same kind of profiles emerge as in the national elections²⁰. Therefore, the members of the European parliament are chosen by many different electoral systems with different effects on the outcome. The electoral systems indeed treat the parties differentially and six different profile types can be found. The counting method seems to determine the profile group somewhat, but the strongest variables determining the shape of a country's profile appears to be the average district magnitude and number of seats allocated to the country.

In the second article (Suojanen 2007a) “Plotting the Consequences of Electoral Change –Causes, Outcomes and Visualisation of System Change” I aim to present the often unintuitive indices in a more visual way through radar plots. Some past and some new indices are plotted in a six-way radar plot. The cases used to illustrate this method are four elections, which have changed in one aspect of the electoral system only. This is to pinpoint the effect of these particular elements if an electoral system is otherwise unchanged. The studied cases include French, Greek and British European parliamentary systems and Swedish national parliamentary system. To illustrate the

²⁰ We must note, that in the EP elections national parties do most of the campaigning and field the candidates, even though at the European parliament transnational party groups play an important role (see e.g. Raunio, Tapio (1997): *The European perspective : transnational party groups in the 1989-1994 European Parliament*, Aldershot, Ashgate).

usefulness of the radar plot also some different sized Finnish districts are plotted to see the impact of electoral magnitude. The changed variables are electoral system (Plurality changed to PR in the UK), magnitude (French splitting their single district to eight), legal threshold (the Greek introduce a three percent threshold) and counting method (d'Hondt is changed to modified Sainte-Laguë in Sweden). The radar plots with the indices from the election's results from the two elections after and before the changes are then depicted for all country cases. For quantifying the change, also the change in the area that is formed in the plot is calculated. Using these radar plots we can detect that the change in the electoral system type, magnitude and legal threshold have an impact on overall proportionality and accessibility while the change between the two highest averages counting method had close to none.

In the third article (Suojanen 2007b) "Minority Party Success in Heterogeneous European Countries", the minorities' success in nine national parliamentary elections is examined with advantage ratios. The theory of consociational (or power-sharing) democracy suggests that, in heterogeneous societies, a proportional electoral system will treat minority parties most fairly. The OSCE Lund Recommendations on the Effective Participation of National Minorities in Public Life proposes a number of electoral system features, which would improve minority representation. In this article some party variables, namely the unity of the minority parties and the geographical concentration of the minorities had to be included among possible explanations. Bearing these points in mind, I investigate the difference between various parties' votes and seats, as measured by an Advantage-ratio of votes and seats. In order to monitor the size of the party, non-minority parties are divided into small and large parties. I conclude that the main points affecting minority success were factors such as the geographical concentration and political unity of the minority rather than the electoral system itself. Moreover, the size of the party was a major factor governing success in all the systems investigated; large parties benefited in all the elections studied.

In the fourth article (Maunula 2007) "Magnitude and Allies Matter - Proportionality in Finnish Electoral Districts 1962- 2007" the proportionality profiles are again applied, but this time to district level results in Finnish parliamentary elections at the district level. The time span in the study is 1962 to 2007, i.e. the time that the districts have largely been the same geographically. Gallagher Least Square indices are also calculated for the districts and nationally. The plots and the index both reveal that district magnitude and electoral alliances matter in Finnish districts. Alliances have helped some small parties to gain a seat share much above their vote share and these successes affect some of the profiles as well. The district magnitude is connected to the overall proportionality of the electoral districts according the profile groups mostly follow the expected results that large district magnitude produces more proportional results.

Conclusions

All the articles in this thesis focus on what has happened when votes are transferred to seats and why. The articles look into different cases at different levels of elections. These include the European parliament, which is a unique body with members from numerous countries using several different electoral systems to choose those members. A district level analysis is also conducted concentrating on Finnish parliamentary elections. The other two articles use both national and EP electoral levels to illustrate a new method or to see how particular minority parties have performed in countries with sizeable minorities. All of the studies aspire to explain empirically from post-election data how the seats are distributed in relation to the votes. Key elements are party success and proportionality. Through indices and plots all the articles aim to see how different parties have succeeded in elections and how proportional the overall outcomes have been. Some of our findings follow the earlier works in the discipline and some reveal new information on electoral areas but also apply a new visualisation method.

Many of the cases in this thesis have never before been studied with the methods of electoral studies. Also some of the methods used in this thesis have been neglected in the field. For example, the EP elections previously understudied, but yet fascinating due to the multitude of electoral systems used in member countries, showed similar outcomes to those of national parliaments. These systems produce very different results even though the members are chosen for the same body. A small party in country A could be left outside the parliament in one member country when in another country it would have easier access due to a more accessible electoral system. The number of MEPs in each member country limits the possibilities of unification quite strongly, but nonetheless other electoral system variables also play a role here. The method of proportionality profiles was quite suitable for this comparison of member countries.

The question of the impact of electoral system change was dealt with in the radar plot article. The new method shows that the magnitude of the impact depends on which part of the system is changed. For example, a change from a plurality system to a PR system has a large impact on all the used scales, while changing the counting method has none. The overall proportionality and system accessibility improved when PR was introduced but deteriorated with the introduction of smaller districts or a legal threshold. The radar plot also proved to be a helpful tool when comparing changes in an electoral system.

The case of minority parties in heterogeneous European countries proved to be a complex one, since the success of a minority party is not only dependent on the vote share size, but also issues such as geographical concentration and inner coherence of the minority group politically. Large parties did well in all studied countries but a small minority party could gain the most from an electoral system by using strategic tools such as electoral alliances. The local concentration along the district lines benefited the small minority parties as well. Generally speaking, one must conclude that on average

minority parties gained less than their proportion of seats partly due to mechanisms that work against all small parties.

The Finnish districts prove, yet again, the impact district magnitude has for electoral results. The variation between how large and small parties are treated in different sized districts was clear. The large parties gained when small parties had trouble crossing the threshold of exclusion. The only exceptions, which in many cases determined the shape of the profiles used in the study as well, were the alliances that are allowed in Finland. Often through such an alliance, a small party gained seat share disproportional to the respective vote share, which were clear cases of overrepresentation for these parties. In smaller districts, such alliances have been vital to many parties to gain their only seat.

The main issues of proportionality and party success are closely interconnected, since higher proportionality usually means a more equal change of success to parties of all sizes. Some level of disproportionality is (almost) unavoidable when it comes to electoral systems, and this disproportionality can be measured in numerous ways at all levels of elections. The consequences of electoral systems are very similar at all the levels studied in this thesis. To summarise, the claim of Rae still holds true, the electoral systems do give to the rich (large parties) and take from the poor (small parties). This holds true at the EP, national and district level. There are many mechanisms behind this; nonetheless, it remains the over all rule.

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