

# EXPERIMENTAL APPROACH IN POLITICAL SCIENCES

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# 1 Introduction

This article focuses to discuss the use of experimental methods in the area of political sciences. Our aim is to define experimental approach with the help of current research practice and discuss the main differences compared to empirical approach and theoretical approach. Before engaging this task, it is vital to discuss the initial definition of experimental approach and my motivations to write this article – and also motivate the reader of the importance of experimental approach.

Thus, in this work we define experimental methods as a test, where researcher influences part of the participants and then observes the possible differences in the outcomes of at least two different groups, the influenced and the control. In her analysis McGraw (1996) discusses several factors of experimental methods, which are

**control** of both internal and external variables, that may have effects on the outcome. The internal variables are considered here those, which are under investigation, i.e. independent and dependent. The control of external variables is done via

**random selection** of participants, which allows the elimination of factors, that can not be controlled.<sup>1</sup>

**validity** of the result. The internal validity is seen to come naturally from the experimental setup itself. Hower, McGraw (1996) notes, that it is not enough, as research should also focus on

**mediators** , by which she means explaining the result of experiment in more generalized manner, explaining the environment in which the experiment has been done – and trying to link the findings into more theoretical form. Also, it is important to discuss the

**external validity** in more detail. McGraw (1996) points out, that due to priorities and limitations, the empirical setups tend in special research context, and thus effect the result. This yealds the consideration of

**replication** of the test in different type of contextes and thus do comparative work to validate the hypothesis.

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<sup>1</sup>At the same time, it is not obvious, if this is critical in the area of political science. In political science literature, quasi-experiments or laboratory experiments may be used, where the role of random selection is not seen critical.

Thus, to summarize the above discussed: in experimental methods, researcher has control over the test environment and subjects participating the experiment. In practice this means, that the researcher may influence different factors, such as the brightness of the room or the message distributed via political advertising<sup>2</sup>. However, the experimental methods are not as simple as one could thought from that description. Experimental setups tend have validity questions in both internal and external area. Replication of the tests and stronger linkage to theoretical areas is seen as ways to solve these questions.

My motivation to write this article is important, is it will describe my approach to the problem. I am intressed in testing different kind of communication tools and their effects to political environment. Unfortunately, there is not much empirical research of using the ubiquitous communication tools, such as the mobile phone – as the technology is not yet mature. Thus, to research the ubiquitous media environment, the researcher needs to influence the local environment. In technology research, these environments may be called living labs, that we focus more later in this work.

It will be discussed below in more detail, but the concept of experimental approach is not novel in political sciences. In her article Herne (2007) (also in Herne & Setälä 2005) discusses this experimental approach before reporting real quasi-experiments related to deliberative practices (results are discussed in Setälä, Grönlund & Herne 2007, Grönlund, Strandberg & Himmelroos 2009).<sup>3</sup>

Above I have discussed the general idea of this article and explained, why I have selected this topic. Below I will demonstrate the use of experimental methods (sections 2 and 3) before engaging the theoretical discussion in section 4 and some methodological notes in section 5. After this, the focus moves to discuss the possibilities of experimental methods in political sciences, after which I will conclude this work in discussion.

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<sup>2</sup>Both of these are examples of early 20<sup>th</sup> century experiments – or quasi-experiments. The first one is related to Hawthorne-experiments – and actually noticing, that doing experimental approach is not trivial (Mayo 2003 (1933)). The latter is exemplified by Hartmann (1936) and Eldersveld (1956).

<sup>3</sup>As interesting side note here, the first published result is in law journal, not in political science journal.

## 2 Experimental methods

Above we have shortly defined what is an experiment and provided illustrive examples. In this section, author's aim is to examine the use of experimental methods in other sciences to narrow down the definition and demonstrated the possibilities of experimental approach. I will later focus more closely to political sciences (page 6). The narrowing down on the fields, that I examine here is not trivial choice, but I consider that at the same time author can discuss the development of political sciences<sup>4</sup>.

First we aim looking at history and law. They are actually two fields that have been seen different from political science (e.g. Jansson 1966, Brotherus 1924), thus comparing with them seems natural. We also discuss sosiology and economy in more detail, as they are close to political science.

### 2.1 History

The history is easy to handle, as by its nature interpretation of facts. Also, the focus is more on the past, constructed from the views of the present. Thus, history allows us to understand our environment via the intrepretations of the past (Carr 1975). Thus, as the focus is in the understanding of the past, experimental approach is hard to see as a valid method.

### 2.2 Law

Compared to history, law's nature is different. It can be seen as systemization and interprentation of legal rules. Hower, the field has proader the scope to include analyzing and evaluation of legal rules and the rule making processes (Aarnio 1978, 52–73). Thus, the wider scope, outside of the legal rules – especially in the legal policy, allows the use of the experimental approach. Especially this is seen in the area where law and economics connect. Hoffman & Spizer (1985) discuss this as the *experimental law and economy*. They find four different purposes for experimental methods: verifying existing theories, building new theories, testing their usefulness in practical policy work, and supporting the development of new institutions. The above mentioned Setälä, Grönlund & Herne (2007) can be seen to fullfil the last criteria.

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<sup>4</sup>Which doesn't belong to this work, but as this is a course work, should be demonstrated.

## 2.3 Economy

Roth (1995) notes, that the early development of experimental methods begun in the 1930's in relation to topics of individual choice and applications of game theory. Nowadays, according to him the experiments are used in six main areas, which are public goods research, coordination and cooperation, bargaining, auctions, market behavior, and individual choice. It seems that the methodologies of experimental are thus accepted and well used in economics, and as we later see – similar topics rise also when we discuss experiments in political science.

## 2.4 Sociology

Walker & Willer (2007) discuss how experimental methods have been used in sociology. They note, that the experimental method is used, but the scholars are "*disproportionately located in the research subfields of (small) group processes and social psychology*". However, it is shown, how experimental methods can be used – for example in studying of survey methods. Laboratory experiments allow better control of variables, which is beneficial for the group process study. However, the author needs to note, that Walker & Willer's (2007) work uses experimental also in context, where empirical would seem more fit – for example, observation studies. But, based on the evidence provided, we may conclude that experiments are used by – a certain group – sociologists.

# 3 Examples of experimental methods in political science

In the section above, we have discussed the role of experimental methods in related fields. What we can conclude from there is, firstly, that the strict classification of sciences may not be wise, as many fields interact with each others (e.g. does legal policy belong to the law or to the political sciences). Secondly, we also see, that variety of sciences has adapted some aspects of experimental methodology. Next, in this section, we focus on the political sciences.

To engage this task, it would first require us to define what is political science. However, this task is too broad to be done in the scope of this work, thus author will just discuss the some of the tendencies ongoing in the dialogue. The key thread to political science is seen to arrive from the

fragmentation and broad scope of the field (e.g. Berndtson 2008, van Deth 2001, Stoker & Marsh 2002). Thus, it is not easy to provide a definition, that would be accepted by all scholars. The author argues, that the key in political science is power relations between actors (or structure). However this definition is too broad to allow us narrow down the political sciences. One way of looking at the definition is to look at the professional organizations of the field. The list of groups in these organizations is presented in table 1, and from those we may summarize, that there are

- regional groups (e.g. Canadian Politics, Latin American Politics)
- topical groups (e.g. International Relations, Information Technology and Politics)
- methodology groups (e.g. Concepts and Methods, Social Network Analysis)
- interdisciplinary groups (e.g. Organised Crime, Geopolitics)

and hope, that the reader sees the magnitude of topics researched under the name of political science. Thus, the definition, as noted, is hard to do. The examples of political sciences are selected so, that they may be seen to belong to one of the groups presented in table 1.

Thus, next the author presents some work done in these fields and the results published. Kinder & Palfrey's (1993) work collects works in decision making<sup>5</sup>. Palfrey (2009) has similar kind of setup in personal decision making, i.e. voting preferences and rationality of voting. Also Bhavnani (2009) uses elections as the context of experiment. Huddy (2002, 273–274) notes, that experimental methods are valuable for political psychology too, where interest is often around decision making process. McDermott's (2002, 50–56) review of experimental studies confirms this tendency: the work carried in experimental setup is often related to topics such as voting, decision making and cooperation. As shown, it seems that experimental methods are often used in certain kind of topical groups, such as work around electoral systems research. However, it can be said that these are not the limits of experimental setup. In the introduction we mentioned the quasi-experiments of Hartmann (1936) and Eldersveld (1956), which were related to political communication. Also, we noted the work of Mayo (2003 (1933)) around administration and

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<sup>5</sup>Some of the works are actually testing of game-theoretical models, which we have discussed above and shall look in more detail later.

IPSA Research Comittees	ECPR Standing Groups	APSA Organized Sections
<p>Concepts and Methods, Political Elites, European Unification, Public Bureaucracies in Developing Societies, Comparative Studies on Local Government and Politics, Political Sociology, Women, Politics and Developing Nations, Legislative Specialists, Comparative Judicial Studies, Electronic Democracy, Science and Politics, Biology and Politics, Democratization in Comparative Perspective, Politics and Ethnicity, Political and Cultural Geography, Socio-Political Pluralism, Globalization and Governance, Asian and Pacific Studies, Gender Politics and Policy, Political Finance and Political Corruption, Political Socialization and Education, Political Communication, Armed Forces and Society, Comparative Health Policy, Human Rights, Structure and Organization of Government, Comparative Federalism and Federation, Psycho-Politics, Political Philosophy, Public Policy and Administration, The Study of Political Science as a Discipline, Comparative Representation and Electoral Systems, Technology and Development, Political Power, Rethinking Political Development, Politics and Business, Welfare States and Developing Societies, New World Orders?, Geopolitics, System Integration of Divided Nations, Religion and Politics, Military's Role in Democratization, Quantitative International Politics, Global Environmental Change, Local-Global Relations, Administrative Culture, Socialism, Capitalism and Democracy, Language and Politics, Political Studies on Contemporary North Africa, and Gender, Globalization &amp; Democracy</p>	<p>Analytical Politics and Public Choice, Central and East European Politics, Comparative Political Institutions, European Union, Extremism and Democracy, Federalism and Regionalism, Forms of Participation, Gender and Politics, Green Politics, Intelligence Governance, Interest Groups, International Political Theory, International Relations, Internet and Politics, Kantian Political Thought, Latin American Politics, Local Government and Politics, Organised Crime, Parliaments Political Economy, Political Geography, Political Methodology, Political Parties, Political Psychology, Political Theory, Politics and Technology, Politics and the Arts, Public Opinion and Voting Behaviour in a Comparative Perspective, Regulatory Governance, Religion and Politics, Security Issues, Social Network Analysis, Southern European Politics, Theoretical Perspectives in Policy Analysis, Third World Politics, Young ecpr Network on Europeanisation</p>	<p>Federalism and Intergovernmental Relations, Law and Courts, Legislative Studies, Public Policy, Political Organizations and Parties, Public Administration, Conflict Processes, Representation and Electoral Systems, Presidency Research, Political Methodology, Religion and Politics, Urban Politics, Science, Technology and Environmental Politics, Women and Politics Research, Foundations of Political Theory, Information Technology and Politics, International Security and Arms Control, Comparative Politics, European Politics and Society, State Politics and Policy, Political Communication, Politics and History, Political Economy, New Political Science, Political Psychology, Political Science Education, Politics, Literature, and Film, Foreign Policy, Elections, Public Opinion, and Voting Behavior, Race, Ethnicity and Politics, International History and Politics, Comparative Democratization, Human Rights, Qualitative and Multi-method Research, Sexuality and Politics, Health Politics and Policy, Canadian Politics, Political Networks</p>

Table 1: The areas of political sciences as seen by three political science organizations

Sources: International Political Science Association Research Committees (<http://www.ipsa.org/site/content/category/6/25/57/lang,en/>), European Consortium for Political Research Standing Groups ([http://www.ecprnet.eu/standing\\_groups\\_and\\_networks/groups\\_list.asp](http://www.ecprnet.eu/standing_groups_and_networks/groups_list.asp)) and American Political Science Association Organized Sections ([http://www.apsanet.org/content\\_4596.cfm?navID=172](http://www.apsanet.org/content_4596.cfm?navID=172))



organizations. However, as we will in section 5 note, it seems that the experimental approach prefers to use certain kind of methodologies only, and thus has a limit to its fields of study<sup>6</sup>.

But, experimental setup is not especially known in Finland (however, see Herne & Setälä 2005). We need to understand its position in the more global dialogue of political science. Druckman, Green, Kuklinski & Lupia's (2006) review discusses both the past and the present of experimental approach. First, they note that the world experimental has been used wrongly in the past, e.g. to reference an empirical study. However, they also note that the number of experimental articles in the *American Political Science Review* (APSR) has grown since 1970's and had a bigger jump in 1990's. In their work, they conclude that this is due to both behavioralism, in the 1970's and 80's, and developed methodologies and techniques in 1990's. They also claim, that at least in the APSR the impact of experimental articles is higher than the non-experimental articles. However, this work is highly American – a note that we shall elaborate in the conclusions more.

Thus, we may conclude that, there seems to be a rising interest to experimental methods in political sciences. At the same time, one can argue that the experimental methods have already been accepted into the field. If we look at the more earlier development of political science, we can see that development of institutions and medium are built when identifying and strengthening the field (as seen previously in the development of political science, see e.g. Berndtson 2008, Klingemann 2008). We may observe, that some of the institutions, such as conferences<sup>7</sup>, publication channels and facilities are already present in the United States. Moreover in some universities the curriculum includes experimental methodologies, which may indicate that the next generation of political scientist might consider it as a basic tool of science making.

## 4 Theory notes

In this section, the focus will move to discuss the theory building of experimental methods. Before engaging this task, it is important to understand the

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<sup>6</sup>The author argues strongly later that this should not be the case. I will discuss my own research interest in section 6 more detailed.

<sup>7</sup>E.g. the CESS-NYU Annual Experimental Political Science Conference held first time in 2008 at the New York University (<http://cess.nyu.edu/conf-2008-02-07/index.html>)

general development of theoretical, especially epistemological, background in political sciences. We discuss them here with terms the classical approach and the empirical approach<sup>8</sup>. After this discussion, we can engage the dialogue of the role of theory in experimental methods.

## 4.1 Comparison to classical approach

With the classical approach we mean the study of political philosophy. The philosophical study of politics was used even in ancient Greece, via authors such as Platon and Socrates, and developed further for example by 17<sup>th</sup> century authors like Thomas Hobbes and John Locke. Strauss (1957) explains, that in political philosophy, the research explicitly brings towards the values, that guide his work<sup>9</sup>. This is also visible in the works of Weber, where it is highlighted that *science* has also elements of choices, which means that it is not objective, but more subjective understanding (e.g. Pekonen 1989).

The second core contribution of political theory is work done in concepts and terminology. A good example here may be the understanding of power. For example, Dahl (1958) developed certain concepts and hypothesis and after that proposed an empirical setup that would allow testing this. This understanding is then developed more in Bachrach & Baratz's (1962) work. Thus, the development of understanding what is power begun. Of course, empirical research can develop their own concepts, but these may be unnatural<sup>10</sup> and sometimes concepts developed lack the empirical evidence<sup>11</sup>. Nevertheless, in Gunnell's (2004) work it is stated, that the revolution in political science was development of pluralism as a concept<sup>12</sup>.

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<sup>8</sup>This distinction is elaborated more closely in Gunnell (2006, 779–781). There a three categorisation on historical, empirical and normative theory is presented, which is then further elaborated as traditional and scientific. Niiniluoto (2002, 219–228) explains, based on Campbell's and Hembel's concepts, how the language of science is separated between theory and empirical observations, which have their own concepts, that then need to be linked together. Here the author nevertheless uses different terminology, classical and empirical approach to emphasize the historical development.

<sup>9</sup>This work can be seen especially as an dialogue against the behavioralism approach, which we discuss in the next session.

<sup>10</sup>For example, by looking at Lijphart's (1999) work on comparing democracies, we can see, that the development of the indicators is rather thin, and no explanation is given why indicators are scaled 1–5.

<sup>11</sup>For example, see Newton's (2001) work, where the empirical link between social capital and political capital has been compromised – this link is often assumed by authors.

<sup>12</sup>However, this is dependable, how we define *revolution*. In his work, Gunnell (2004) uses definition based on Kuhn's thinking, which is related to changes of frameworks and approaches. He then argues, that the development of new terms, such as the pluralist

So, we may conclude the core difference between classical and experimental approach is the focus on research. The classical approach, as shown above, is related to concepts and definitions, where as in experimental and empirical approach, discussed in next section, focus more on understanding the structures and actors, that can be observed *in real life*. As we later argue – and which we have tried to elaborate above too – the focus on concept development is important also for experimental and empirical understanding, as the terminology we use also limits the understanding which we have of the phenomenon.

## 4.2 Comparison to empirical approach

Above we have discussed the classical approach to political sciences, which can be seen as normative or conceptual. This approach has been criticized by the Chicago school, which noted, that the political theory is not capable of solving problems and questions of the modern era. Thus, they highlighted the importance of empirical support and more scientific approach. The more focused consideration on generalization, techniques systemization and verifiability naturally demanded more empirical approach (Easton 1965). Thus, the research focus on that time was to understand human behaviour especially from system and modeling approach.

However as the behavioralism growth, the criticism on it also got stronger. The key argument against them is related to the methodology they use and assumptions they make. As Easton (1969) (also in more recent Sartori 2004) explains it, there must be connection with the reality, and focus must be in topics with societal relevance. Moreover, he also discusses the methodological background, the unsound neutrality of the science and excessive focus on methods instead of the focus in subject matter.

The author would still want to focus, that even the critical approach does not deny the empirical nature of political science. The critical approach has several different kind of areas, such as feminist studies or marxism, i.e. certain normative position<sup>13</sup>. A good example of this could be Celis, Child,

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viewpoints, is in the core, compared to methodological innovations, and focus change in the research – i.e. behavioral and post-behavioral movements.

<sup>13</sup>However, a critic of behavioralism could state, that the normative position in there is that of a white middle aged male. For further discussion of the political science scholars, especially from gender and race matters, refer e.g. to Masuoka, Grofman & Feld (2007) and Kantola (2008).

Kantola & Krook's (2008) work<sup>14</sup>, where they discuss women's representation and provide empirical evidence to support their view. However, we need to understand, that the empirical evidence is different in nature compared to the behavioralism – but, the conclusions and dialogue rise from the issues of existing world. Second example to highlight this is Pateman (1980) discussion around the nature of consent. This work still draws some of the discussion of the existing world, existing actors and existing structures and not merely work in normative and concept level.

Secondly, what author sees interesting is the fact, that older political science texts (e.g. Brotherton 1924, Merriam 1926) focus on the issue of practical research. They claim, that the role of political science is to be a normative science, meaning, that political scientist would support the development of civic society. Thus, it may be wrong to argue that the change of behavioralism would be a radical change in the research focus. What behavioralism developed was more a new kind of approach via measurements and statistical analysis, as focused above. Also, what can be considered as one of the contributions was the addressing of methodology, which we can see still present in qualitative research too, not just on quantitative.

### 4.3 The role of theory

From the above mentioned, we have distinguished two different schools or approaches to political science. The first one, called classical school, focuses on the research of terms and concepts, sometimes from normative perspective. The second approach, empirical, begins from the real world and the study of real people (vs. study of possible motivations of people) – sometimes, from more objective and sometimes from more normative view. However, these two schools are both vital in the study of politics, as the conceptualization work that is done in the political theory is then used to structure the empirical world.

We shortly mentioned above the work of Hoffman & Spitzer (1985) (also in Druckman et al. 2006, 630–632), who discussed the experimental law and economy. The distinction for different genres of that work

- verifying existing theories

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<sup>14</sup>This work can be seen still as an continuation to the power dialogue, and as should be thus presented in the classical approach section above, as the work is concept development. This issue highlights how naive the distinction between empirical and classical is, which we have already mentioned above and shall discuss more closely below.

- building new theories
- testing the usefulness of theories in practical policy work
- use the experimental methods to support development of new institutions.

Of course, also empirical and classical approach allow this kind of work, empirical especially in the first three and classical in the last one. However, what difference is, that in experimental approach, as discussed in the beginning, the researcher controls the environment. This means, that via experimenting some distracting factors, the white noise, can be managed out. Especially experimental methods may be useful when building new institutions, as the experimentation allows to test before the institution is developed, but still use real data as the key argument point, compared to the classical approach, which does not have this advance.

We also see, that according to Hoffman & Spizer (1985), experimental approach allow different kind of relations to theory. In classical philosophy, theory<sup>15</sup> is defined as a generalization, or linkage between concepts and terms. Thus, there may be two different kind of ways to generate these linkages, induction and deduction. In induction the argumentation is built from special cases to general, deduction works from general rule to an estimate in special case. From these two, it seems that induction is more fit in experimental methods when building new theories, but it may also be that deduction is needed, especially if one falsifies existing theory (Niiniluoto 2002).

We also noted that there are two items that highlight applied research agenda. However, the practicality of this approach may be seen as an issue. The question whether political science is a craft or a science is not trivial. In the above discussion we noted, that the political science has an internal demand to study topics, that have a societal relevance. The role of political scientists thus can be seen, not just as pure scientist, who researcher, but as an active citizen advocate, as Easton (1969, 1055–6 & 1059–61) discusses. For example policy research, that aims to understand how public administration works and why it works in that way, can often be seen as evaluative research. Similar kind of dialogue can be considered in other fields, such as participation studies and feminist works. If we take the position of Max

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<sup>15</sup>However, in social science it seems that the definition of theory is radically different, or in more pluralist view, as argued in Stoker & Marsh (2002). For example, abduction – a linkage based on 'general understanding' is a mean that may be needed in political science.

Weber, and his distinction between political and scientific ethos, we need to understand, that scientists should not participate in political dialogue. But, we may at the same time argue that this is the only function of political scientist, to participate in the dialogue in the public. Actually, this is what Harold D. Lasswell considered as "science of democracy" (e.g. Farr, Hacker & Kazee 2006). It seems, that political science is often more a craft than a science, especially if we approach science from views of practical applications.

The author discusses here about the focus of the political science, as the focus is relevant in the research question setting and the research question setting, which then reflects on the relation on theory and what kind of theories should be used. If the research is approached from practical point, the relationship to theory may not be relevant at all, but the question is more on what implications we may concluded from the results. However, if the research is approached from the more from the point of understanding how society and actors there work, but not trying to apply the results, then the target of the work is different. Thus, this discussion may be concluded that before engaging a research task, one should consider the aim of the research task. This way, the researcher is aware of the his/her position can identify the possible issues in the position and researcher's own agenda setting (see for example the argumentation in Heiskanen 1986).

## **5 Methodology notes**

Above we have discussed the role theory and the nature of science, in more formal way epistemology. In this part, however, the aim is to look, how knowledge can gathered, i.e. the methods. In this work, we approach this from classical divide between quantitative and qualitative approaches. Author does not mean, that this division would be sound, but highlights the possibility to use mixed methods (see page 18 onwards). Before engaging this task, a short mention on comparative and formal approach presented.

### **5.1 Quantitative methodology**

With quantitative methods the author means use of statistical and numerical methods to gain knowledge. The basic principle is, that there is data which is then analyzed and describe using different techniques, such as  $\chi$ -tests or multi-variable analysis. The usual aim is to generalize the results to the population from a sample. But, there is no such wide discussion on different methodological approaches and the difference in them, the discussion is more

on techniques and tools of gaining knowledge, the practical on hands on work (see e.g. John 2002).

The critics related to the use of quantitative methods can be discussed via behavioralism. We already above have discussed several things, that are relevant. We discussed the linkage between theory and practice, and the author mentioned Lijphart (1999) as a case example of over-operationalization – for the author it seems that Lijphart tries to quantify and measure items that can not be quantified<sup>16</sup>. Secondly, with quantitative methods we only see what we measure, but the decision of what can be measured is critical. Thus, with quantitative methods, it appears that the operationalization of variables have a strong impact on the results and thus the interpretation we conclude from those.

We have previously discussed the experimental methods in general. What can be observed from those, is that quantitative analysis is used much in the experimental domain. This is not a surprise, as the prototype of experiment, ideal type, is from natural science – where everything is quantified. Secondly, if we consider experimental method – the process (simplified) is randomizing the input, expose part of the input into modification and controlling the changes the modification had in the output. Thus, the controlling part may be easier with the quantitative methods. Thirdly, one possible tendency to explain the quantitative nature of experiments is that the experiment setup as such could be seen as mimicking of natural science, and the concepts that validate scientific thought there.

## 5.2 Qualitative methodology

Actually, compared to quantitative methods, it seems that the work on qualitative methodology is more well defined. There are several different types of qualitative methods. For example, Tesch (1990) distinguishes four main types of qualitative methods: focus on language and characteristics of it, focus on regularities and patterns in the language, comparison of action and text and reflection of the text. These different focuses then use special methods, such as content analysis and discourse analysis. Ragin, Berg-Schlusser & de Meur (1996)<sup>17</sup> define the function of qualitative methods as two-fold way of un-

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<sup>16</sup>For example, the use on one to five scale in all items, but adding extra slots such as  $3\frac{1}{2}$  demonstrate for me that the quantification has not been successful.

<sup>17</sup>However, the author does not agree that the qualitative analysis should be "*systematic comparison of multiple cases*" (Ragin, Berg-Schlusser & de Meur 1996, 749). They nevertheless do notice, that this kind of definition for qualitative methods is close to the

derstanding the world. First, when the theoretical and conceptual development is vague, the use of qualitative methods is beneficial to construct the theoretical background and allow strong empirical support to be built. Secondly, they just certain cases where qualitative methods is needed, such as cultural and historical phenomena or cases where large  $n$  is unfeasible or unthinkable.

Howevr, the qualitative methods are also criticised. For example, topics such as reliability, objectivity and generalibility need to be focused. For example, the selection of empirical evidence is vital, as demonstrated in Lustick's (1996) work<sup>18</sup>. Thirdly, the question of interpretation: how much researchers own assumptions and beliefs affect the results<sup>19</sup>. There are some methods, which allow researcher to overcome these issues, such as using several interpreters or having ongoing dialogue between the interviewer and interviewee. Secondly, the author would voice up, that in similar way the quantitative methods are interpretation of the data. This is of course supported by previous theories and assumptions, which is the case also in qualitative methods (e.g. Devine 2002).

Thus, in certain cases qualitative methods may be relevant in experimental setup. As elaborated, qualitative methods allow development of theoretical background and secondly would allow building better understanding on issues, that can not be approached using quantitative methods. Thus, this can also be the case where they need to be used in experiments. For example, Sherman & Strang (2004) develop a concept of using experimental methods and ethnography, a qualitative method, together to gain better knowledge, not only in what-questions but also focus in the why-questions. Anyhow, the author is not familiar with any experimental setup that would use qualitative approach, but rather use only quantitative methods in their study.

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definition of quantitative methods, and later explicitly discuss that they focus in that work on different kind of comparative qualitative methods. The author will discuss comparative methods more closely in the next section. It also should be highlighted that the view of qualitative methods they have does not disturb the definition they have given, i.e. the functional scope of qualitative methods.

<sup>18</sup>In this work, the perspective is in the use of historical data – but the claim and this approach may be used in other areas too.

<sup>19</sup>Above we already discussed Strauss's (1957) work, which basically discusses the same topic.



### 5.3 Comparative approach

Comparative approach means, that we conclude results from comparing certain variable sets. There are several methods of choosing the cases that are compared, including as similar cases as possible, excluding the dependent variables, or as different cases as possible, excluding the dependent variables. Especially, it is vital to see that the method of comparing may be both quantitative and qualitative (Hopkin 2002, Lijphart 1971).

However, the defects of comparative approach are also important to be discussed. It may be, that there are too few cases and too many dependent variables (small N, many variables), or the data set may be limited<sup>20</sup>. It may also be, that the researcher is not familiar with the subject matter, which they compare – which as such is an issue (Hopkin 2002, Lijphart 1971).

Further more, what is especially interesting, is that Lijphart (1971) also discuss the difference of experimental and comparative approach. He concludes, that as the experimental methods uses the same approach of comparing. However, the experimental methods includes the context, which is build by researcher, where as in empirical comparing uses the context that naturally occurs. But, the note made by Lijphart is valid – the experimental method can be seen as a specific variation of the usual comparative methods.

### 5.4 Formal approach

The formal approach as it self does not belong to the usual approaches in Finnish political science. The reason I have included the approach in this work is more due to my own interest in that. At the same time, some of the concepts of formal theory, especially game theory, may be interesting also for experimental approach, as we have already hinted above.

According to Mitchell (1988), formal methodology had three different schools, which have special focus areas in their research. These were political-economical orientated electoral studies, public choice theorists and policy orientated approach. Now days the extend of formal theories is of course much wider, including topics such as decision making (e.g. Landa & Meirowitz 2009, Mattila & Lane 2001, Nurmi 1997), leadership (e.g. Dewan & Myatt 2007) – and naturally election studies (e.g. Riker & Ordeshook 1968, Gordon, Huber & Landa 2007, Canes-Wrone & Shotts 2007). One should

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<sup>20</sup>This is already in Lustick (1996), which basically notes that there may be a bias when selecting cases, maybe not due to the researcher but due to data access.

keep in mind, that this approach has certain premisses, such as rational behaviour.

If we more closely focus Nurmi's (1997) work<sup>21</sup>, the reader needs to focus on the assumptions made in the article. Firstly, it is assumed that there is a right preference – but discussion on how these preferences are set is not present. Thus, the main critics from authors part might be similar to what Easton (1969) quickly noted in his paper: is the technique, in this case formal approach, becoming more important compared to the subject matter, i.e. usefulness of the results – or as William Riker (Shepsle 2003) discusses it, the political system is in state of flux and, for example, the political process may be around topics such as what kind of decision making apparatus is used in this case, which can not be formalized. To even more extend, the manifesto of Perestroika (2005)<sup>22</sup> provokes discussion around the formal methods, claiming that the mathematical skills (of APSA and APSR contributors at during that time) are vague.

Thus, there are certain methodological questions, that are criticized. But, the question from the perspective of this work is, how could experimental setup benefit from formal methodology. Already now the linkage between formal methods and empirical observations have been developed, for example Mattila & Lane's (2001) work builds the understanding of phenomena via formal approach and then tests the developed model via empirical evidence. In experimental setup, instead of empirical data the researcher would have used data from 'lab experiments', where they could have controlled all variables<sup>23</sup>.

## 5.5 Methodology in experimental methods

We already above presented the work of Sherman & Strang (2004) (see also Read & Marsh 2002), where they claim that using more than one method, i.e. method triangulation, is beneficial to gain understanding. We also saw this

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<sup>21</sup>Nurmi (1997) shows, that as long as every voter knows her preferences over the likelihood of  $\frac{1}{2}$ , the cumulative likelihood of choosing the best preference grows while new voters are added.

<sup>22</sup>Which we, of course need to contextualize in a proper manner. This is a manifesto of unnamed author and uses provokative language.

<sup>23</sup>However, at the same time certain important elements could have been missed, as in this work: instead of acting as the model predicts, there are certain additional elements, which may not be present in a laboratory setup. Secondly, the author has no knowledge, how to represent the European union in a correct way – so, can this even be tested in a laboratory kind setup.

in our short discussion of comparative methods, the comparative method (of which, experimental method is a special case) can use both methods. Hower, during the short investigation to qualitative methods, the author did notice, that he is not familiar with qualitative based experimental research – which can be investigated trough the fact that the prototype of experimental methods is based around natural sciences, which uses quantitative methods and explicit measurements.

We also should examine the nature of experimental methods more closely. In the introduction we have shortly explained that experimental methods are a methodological approach, where the researcher has a level of control over the system. Above we marked, that the experimental method is related to comparing. Hower, after discussing of the formal approach we need to understand that the experimental methods are a bit more than comparing – or more clearly see, that the 'expected behaviour' may rise from theoretical standing point too<sup>24</sup>. But what are the reasons why experimental methods should be used, especially compared to usual empricial observation?

McDermott's (2002) article discusses the benefits and disadvanges of experimental methods. From the benefits, she lists the control of the situation, which allows more precise measrutements. Also, this allows the breaking down relationships and processes, which all lead better ability to derive causal relationships. The casual relationship is even more supported by the fact that the randomization of subjects create a non-biased sample. Lastly, she notes, intrestingly, that the experiments are rather cheap to arrange.

But, it is vital to understand that there are also problems in the experimental approach. Firstly, the research enviroment is in pure experiments artificial, which of course has an affect to the results<sup>25</sup>. Thirdly, the validity needs to be questioned. Can the real world be replicated correctly – can all the power relations, norms, institutions etc. be replicated? Lastly, the experiment may even cause certain kind of behaviour, as Mayo (2003 (1933)) noted. To elaborate and extend this, it may be that the experiment sample does not represent the population in a proper manner. For example, if the subjects are volunteers, there is already a bias of those who participate, which may even growth if incentives are given ti participants. Also, proble-

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<sup>24</sup>As an example, we have refered to Palfrey's (2009) work above.

<sup>25</sup>Hower, in more relaxed form of quasi-experiments, this is not true. But, the quasi-experiments at the same time do not allow same level of control, which is listed as a benefit above.

mastic area may be the ethics of experimental methods<sup>26</sup>. McDermott (2002) guides, that the subjects consent must be required and a change to discuss about the experience (debriefing) need to be arranged.

Lastly, we should make one certain aspect clear. Experimentation is just a method of gaining knowledge. Thus, the research position and subject matter are also relevant, as in political science always, and those can not be controlled via this method. For example, author with critical viewpoint, such as feminism, may interrepresent the results in different way compared to policy-analysist. Also, these researcher will have different subject matter that they reflect on this topic. The author had tried to explain this in section 4, mainly by noticing the difference between empirical and classical approach. In the same section we dismantled the empirical approach to conclude both critical studies and behavioralism and discussed the function of political science, where we brought up the dialogue of more practice orientaited work, which for example policy analysis is. Thus, it is vital for the researcher to position herself first against hers background, and after this work focus on choosing the methods that fits in the special case. I try to do so in the next section, where I discuss more on the possibilities and changes of experimental methods for me.

## 6 Possible trends

In this last part of this work, author provides possible new areas on experimental methods and discuss, firstly, how these settings are experimental and secondly, why these areas could be beneficial for the field. Author acknowledges, that the list provided here is not complete, but point out at the same time the intrresses of the author. Thus, it worth of describing the background of the author in proper manner to allow readers to consider the validity of my approach.

The author is intressed in participation of citizens in the decision making processes. The main intress is in the different kind of means that can fooster participation, especially use of new media. My background is in natural sciences, especially in computer technology and mathematics, which means I have a strict meaning of science. Hower, I appriate the work done in political sciences generally, but would not call it a scientific work due to its limita-

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<sup>26</sup>For example, Lijphart (1971) claimed that the ethical issues are one of the reasons, why experimental methods have not been especially popular (during that time).

tions<sup>27</sup> – but more like analysis or investigation. Thus, the experimental approach, topic choice of this essay, may be interpreted as a way to make political science just a bit more scientific.

However, this is not the case: I see that with experimental methods I can frame the work I do with new media and participation to be accepted by the scientific community. Thus, as we above discussed the nature of political science, it needs to be noted that I identify myself with the practical side. This is of course a limitation I need to accept, and the practical approach can be seen in the research presented in the next section. However, the section 6.2 there is no such normative standing point of mine, but more focus on how could we understand, interpret and explain the world in better manner.

## 6.1 Living Lab-environments

Living lab is a term used in the technology research. It means an environment where certain concepts are examined with users. As the concepts are often novel ones, the living lab environment may include e.g. loaning of certain enabling technologies. Also, instead of specific usecase, the living lab environment may provide a certain kind of platforms, and examine what possible usecases users invent based on this platform.

Nevertheless, one issue in living lab environments is the lack of control group. As we defined in the introduction, an experiment is a test, where we can distinct at least two groups, one being the control group. Thus, we may conclude that instead of an experiment this method may be said to be quasi-experiment.

The author is currently working in one living lab experiment (see Nelimarkka 2009). In that work, I developed concept of using mobile phones (and other virtual means) to allow better civic participation. The main questions include, who are participating using these new means of participation, and what kind of quality the participation has. Later on, the aim is that this research would allow guidance for others, including administration, working in the ubiquitous computing and civic participation.

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<sup>27</sup>This claim is valid for behavioralism and more statistical approaches too.

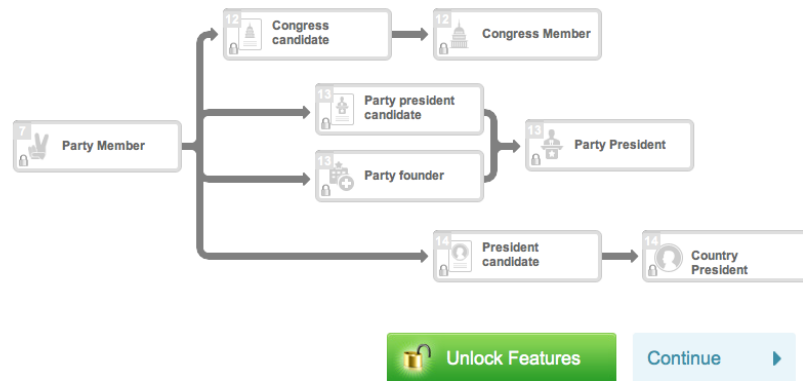


Figure 1: eRepublik, an online social strategy game  
 The user interfaces in eRepublik (<http://www.erepublik.com/>), a social strategy game. This view demonstrates user’s progress in the political module, other modules being war, economy and media.

## 6.2 Virtual environments

With virtual environments we mean a computer enabled environment which usually allows interaction between persons using the system – or interaction with the computer system logic. For example, in figure 1, we can see a screenshot of a game world. This game, eRepublik, can be seen as a small scale simulation of different societies (countries), which could have different kind of strategies in international relations and also strategies and behaviour of individuals in their own society. The author is not aware, if the development team of this game tries to use behavioral data as suggested – and try to find patterns in it.

However, the idea is not novel. Willer, Rutstrom, Karr, Corra & Girard (1999) have developed a system called Web-Lab, where they experimented e.g. topics of economics. Also, Leitzel’s (2008), aimed towards general audience, discusses the possibility of virtual worlds in general. However, it is not yet clear, if virtual environment is a valid environment. One of the core questions is, if people behave in these environments in the similar way that they behave in physical environments. The advance of virtual environments is exact measurements possibilities and full control of the environment, but the disadvantage is the need to use computer mediated communication, which means that the environment may not work, as people behave differently there.

## 7 Discussion and conclusions

This work was set off by defining experimental methods. We used the work of McGraw (1996) to see different kind of aspects of experiments. The definition of experimental approach thus was random selection of participants and control of the context where the experiment is arranged. However, it needs to be understood, that the experimental setup has pitfalls, especially in terms of internal and external validity. These require researchers attention, as we later discussed in section 5.5. We highlighted the work of McDermott (2002), where external and internal validity were discussed in more detail, such as the artificial environment, and thus possible lack of e.g. certain kind of power relations, and the selection of participants, which may include biases.

After this, we engaged to discuss the role of experimental methods in complementary disciplines and in the fields of political science. What can be highlighted from that discussion, is that experimental methods is not a novel approach, but instead it has been used for a longer time period, not only in political sciences, but also topics of economy, law and sociology. Based on the Druckman et al.'s (2006) review, we concluded that in the American Political Science Review number of experimental articles has growth and that the interest in them is high. We also noted, that the topics of experimental research in political science are around topics, like voting, decision making and cooperation. We can also note, that most of the scholars using experimental methods are based in the North America. Thus, a valid point could be, if the use of experimental methods is an American project. This may be so, but as the American political science has a hegemony position (noted and criticized e.g. in Hirst 2003, Sartori 2004), it is most likely that this kind of approach will become more valid in other countries too. What is vital, is to learn from the behavioralism and the criticism of it, and incorporate those learnings in the experimental methodologies. One, highly emphasized topic is the societal relevance of our research, which I have discussed in sections 4.3 and 6.1. The author especially highlighted, that the use of experimental methods may be used to allow testing new institutions, which should be relevant for the society.

We engage this discussion more closely after understanding the position of experimental methods in political science. First, we discussed traditions of political science, or the epistemology – understanding of what is good science. The author used terms classical and empirical approach, but this kind of distinction is present also in more broader scientific dialogue. The main development trend, as author sees it was change of the focus from classi-

cal, normative and conceptual research to more empirical research. In the empirical research section we discussed behavioralism and the criticism of it. Second major note was, that experimental method can be used both in classical and in empirical research. This was based on Hoffman & Spizer's (1985) and Druckman et al.'s (2006, 630–632) work, where experiments were seen both a way to test existing theories and concepts and build new theories and concepts<sup>28</sup>. We tried to provide evidence, that empirical and conceptual work are highly related and need each others, and that empirical research can be used to justify conceptual development.

Lastly, we discussed the different methodologies to be used in the experimental setup. We found out, that for some reason, the qualitative method is not often used in the experimental setup. The author believes, just like Sherman & Strang (2004), that the qualitative side could allow us to understand the behaviour and results of the participants in more detail. Thus, we made a short note about the method triangulation, and took a position that supported this kind of approach. We also noted in chapter 5.5, that instead of using a control group, the experimental method is also used to support or falsify the formal methods. Even more important, we discussed of the problems of experimental methods, which we already noted in the beginning of this section. The validity questions remain, as do also the ethical questions of participation. From these, the author points out to the fact that experiments are arranged in artificial environment, which means, not only that certain aspects may be absent from the situation, but that the participants know they are being observed, which may lead to biased results. Secondly, from the ethical standing point, what McDermott (2002) notes, is the need to inform the participants and debrief their experiences. Thus, the experimental methodology is not a trivial way of gaining knowledge, but needs certain attention from the scholars, and more research towards the method and the limits of it<sup>29</sup> is needed.

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<sup>28</sup>The authors also highlighted third aspect, the practical policy work, which we highlighted in the previous paragraph.

<sup>29</sup>For example, the use of virtual environments as an experimental laboratory, as discussed in section 6.2.



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