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Abstract			
<p>The public discussion on NATO has been ongoing in Finland since the 90's century. In 2018 Finland's president Sauli Niinistö said that if Finland applies for a full NATO membership there will be referendum. National security policies can feel quite distance for the general public, therefore there was a need to create alternative scenarios if such a referendum would take place. These scenarios could help possible voters to decide about this topic.</p> <p>For scenario purposes a normative approach was chosen. In normative scenarios the outcome is predetermined, which in this case resulted into four plausible scenarios. These scenarios are divided the following: Finland joins or does not join NATO and positive and negative outcomes based on these decisions. To find out the content of the scenarios a Google Alert's was exploited as a data source. During a one-year period the data was collected. The amount of data gives and argument that that research was using big data. The data was analysed in qualitative and quantitative methods. In qualitative analysis a content analysis was used to locate clusters. This has been done with Power Bi as a tool. In quantitative approach a Python script was ran to create a word cloud to find out the most frequent words in the articles.</p> <p>It was found out that big data is a great asset in scenario planning, but with the chosen methods it requires a lot of effort to be worthwhile. These data-driven scenarios were able to provide four plausible scenarios for the year 2030. The scenarios may be appreciated by the possible referendum voters. Futures studies drives people for change and therefore the ethical discussion under this topic has been discussed under this study as well. Implications that were found out, were the increasing need for media literacy and to re-consider the pros and cons of the referendum.</p>			
Key words	NATO, big data, normative scenarios		





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<p>Julkinen NATO keskustelu on jatkunut Suomessa 90-luvulta asti. Vuonna 2018 Suomen presidentti Sauli Niinistö sanoi, että jos Suomi hakisi NATO:n jäsenyyttä, niin siitä tulisi järjestää kansanäänestys. Kansallinen turvallisuuspolitiikka voi tuntua kaukaiselta suurelle yleisölle, sen vuoksi oli tarve luoda vaihtoehtoisia skenaarioita, jos kansanäänestys toteutuisi. Nämä skenaariot voisivat auttaa mahdollisia äänestäjiä päättämään tästä aiheesta.</p> <p>Skenaarioiden luomiseen valittiin normatiiviset skenaariot. Normatiivissa skenaarioissa lopputulema on ennalta päätetty, mikä johti siihen, että neljä mahdollisesti toteutuvaa skenaariota luotiin. Nämä skenaariot ovat jaettavissa seuraavasti: Suomi liittyy tai ei liity NATO:on ja näiden päätösten pohjalta lopputulema on joko positiivinen tai negatiivinen. Sisältö skenaarioihin löydettiin hyödyntämällä Google Alert:ia datalähteenä. Data kerättiin yhden vuoden aikana. Datan määrän vuoksi voidaan sanoa, että tutkimus hyödynsi big dataa. Data analysoitiin kvalitatiivisin ja kvantitatiivisen metodein. Kvalitatiivisessa analyysissä sisällönanalyysiä hyödynnettiin klustereiden paikantamiseen. Tähän työkaluna käytettiin Power Bi:tä. Kvantitatiivisessa lähestymistavassa käytettiin Python koodia, jolla tehtiin sanakartta millä löydettiin useimmiten toistuneet sanat artikkeleissa.</p> <p>Big data osoittautui suureksi hyödyksi skenaarioiden suunnittelussa, mutta valituilla metodeilla sen hyödyntäminen vaati suurta vaivaa. Data-käyttöiset skenaariot mahdollistivat neljä mahdollisesti toteutuvaa skenaariota vuoteen 2030. Mahdolliset kansanäänestyksen äänestäjät voivat arvostaa näitä skenaariota. Tulevaisuudentutkimus ajaa ihmisiä muutokseen ja sen vuoksi eettinen keskustelu tämän aiheen ympärillä on käsitelty myös tässä tutkimuksessa. Löydetyt seuraukset, olivat lisääntynyt medialukutaidon tarve ja kansanäänestyksen hyvien ja huonojen puolien uudelleen mietintä.</p>			
Avainsanat	NATO, big data, normatiiviset skenaariot		





**UNIVERSITY
OF TURKU**

Turku School of
Economics

FUTURE OF FINLAND'S PARTNERSHIP WITH NATO

Creating normative scenarios with big data

Master's Thesis
in in Futures Studies

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The originality of this thesis has been checked in accordance with the University of Turku quality assurance system using the Turnitin OriginalityCheck service.

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1 INTRODUCTION

In 2018, I started to notice that there was a lot of ongoing discussion about NATO. At the time I had no knowledge about the NATO and why it was such a big topic for Finland. I read a newspaper where the president of Finland, Sauli Niinistö, said that if the Finland joins NATO there should be a referendum. This raised my interest to the topic. I saw an instant need to embed futures studies with this case and decided to do my master's thesis on the topic. From then on, I had a need to familiarize myself with the topic and therefore I started to read literature about the topic, set up Google Alerts to collect data and was using Twitter constantly to follow key people. At that point I had no clear researched question formed, but I had an urge to familiarize myself with the topic. Some of the literature that I read end up in this thesis and some did not. On Twitter it was enjoyable to notice that there was a lot of discussion around this matter, but it could not serve as research material. Google Alerts became a core data source for this research. My personal motivation was to increase my intelligence on something that I did not have any knowledge on and as an indirect result to serve the other possible future voters in case the referendum takes place.

1.1 Finland's NATO discussion

The discussion about NATO has resulted in a multiple studies and articles. In 2007 Sierla wrote a short research article on Finland's possible consequences if it joins NATO. The consequences that Sierla introduced were related to, foreign affairs, military and defense, security of supply and burden sharing. Finland has been able to participate in all EU related operations. However, NATO and the European Union are in close cooperation, which is why Finland does not have the access to all materials (Sierla 2007, 24). Sierla argues that NATO membership has a significant meaning for the European Union's collective defense. In the European Union's constitution article 27 part 7 there is a statement which mandates Union membership countries to aid in a situation where a member country is being targeted in an armed attack. There is a connection to NATO membership but it is written so that they are not excluding each other (ibid 24). Sierla (2007) discusses the relationship with the neighboring countries and Finland's image. It is said that Russia has

not been against Finland's membership plan, even though Russia has reacted quite negatively to NATO enlargement towards its territories. In the end the choice is Finland's as the Russia's representatives have declared (ibid 26). Regarding to military operations NATO membership would benefit Finland when it comes to protecting its own territories, for example, because of the NRF (NATO Response Force) troops and skills related to intelligence, as well as in terms of long-term benefits in the defense of air and sea (ibid, 29). It should be noted that compulsory military service and NATO membership do not exclude each other (ibid 33).

The National Defense University of Finland has published several research papers about NATO and the possible consequences of joining from Finland's perspective. "Starting points to find solutions for Finland's security policy" has been edited by Fred Blombergs in 2016. It is a collection of research papers written at the University. The following refers to the key concepts of NATO related research papers.

Kuusela (2016) discusses in his research paper about the transformation of NATO. He argues that the characteristics of war are changing and one needs to prepare for it. During the era of hybrid- and cyber threats NATO's greatest asset still is its conventional military force. It is said that in the future NATO will rely more on cooperation with civil authorities and the private sector (Kuusela 2016, 269). To upkeep the cohesion in the alliance it is mandatory to have the feeling among the members that there is a collective defense at place. The goal is to answer in rising to new security threats, no matter where they are rising (ibid 269). In the security environment where NATO functions it is necessary to highlight the significance of Transatlantic cooperation. Still one of the cornerstones of European defense is the fact that the United States are participating in the collective defense of Europe. Kuusela (2016) argues that NATO keeps on developing and there is no sign of obsolescence.

Blombergs (2016) studied the pros and cons of NATO membership through the perspective of realism. He argues that there is no other option for Finland than to join NATO (Blombergs 2016, 320). The reasons behind this is that the Russian offensive actions would continue even if Finland applied for a full membership of NATO, but if part of the alliance, Finland would have security guarantees (ibid 321).

Sirén (2016) discussed Finland's NATO membership from a liberalist point of view. The war in Georgia and the occupation of the Crimea in 2014 have changed the views of Finland's key politicians (ibid 351). Sirén (2016) argues that from a liberalist perspective the membership would be beneficial both economically and politically. Economically

wise it could increase the investments in Finland and politically it would increase the trust towards Finnish politicians. It has been estimated that the membership would decrease the Finnish people's willingness to defend their home country, but it is not self-evident (ibid 352-353). It is essential to remember that Finland is not nonaligned, since the Lisbon agreement mandates to give aid to the European Union's membership countries in case of an armed attack (ibid 355-256). The discussion around NATO has been divided in different cultures where it is often repeated that a small country like Finland should not anger Russia by joining NATO. To Russia this means that it has a legitimate mandate to affect on Finland's security policy. Also a myth based on the Winter war in which Finland would be able to defend itself against an attack is being reiterated as a reasoning behind the belief that Finland should not join NATO (ibid 357). Sirén concludes with a table which indicates the pros and cons of NATO membership. The strengths include economic benefits, the fact that it would strengthen Finland's Western identity, increase the trust in politics and protect by deterrence with nuclear weapons and article 5. In addition, it would strengthen the security of supply, as well as Finland's air defense and intelligence. However, the weaknesses are that Russia could get angry (even if it gets angry anyway from time to time), possible trade war with Russia and the possibility of Finland being left with the responsibility of defending of Estonia in an armed conflict. In addition to these three factors, Sirén argues that the Finnish people's will to defend their country could decrease, even its not self-evident (ibid 358). Sirén (2016) quire appropriately summarizes it well that the possible NATO membership is always culminates to Russia. He argues that in the research factors supporting NATO membership were more numerous than those resisting it (ibid 359).

Forsberg (2016) studied Finland's NATO policy through constructivism. Forsberg writes that the debate about Finland's identity policy has been ongoing for over two decades. The debate relates to the factors regarding Russia's aggressive actions and Finland's need to stand out from neighbouring countries, namely Estonia and Sweden (Forsberg 2016, 375)

Anteroinen & Peltoniemi (2016) wrote about the impacts of the NATO membership on Finland's defense systems. They note that over 20-years of ongoing partnership striving for a peace program has resulted in a situation where Finland has been developing its military to be compatible with NATO's standards. Still NATO membership would transform Finland's defense system and its procedures on how to act militarily in many ways. Firstly, an update to the military's legal tasks would need to be done. The defense of

Finland would happen in cooperation with NATO and there would also be the new requirement of joining NATO operations abroad. Secondly, there would be additional intelligence information, situation awareness and material aid which would support the national defense. Even as a part of NATO Finland's defense could still be based on mandatory military service. As a member of NATO Finland would be mandated to join in the alliance's common training operations, which would have to be harmonized with the national training procedures. The costs of NATO membership are estimated to be between 30-45 million euros. In addition, there would be other costs related to training and operations. In the level of 2015, these additional costs would have been 13-15 million euros (Anteroinen & Peltoniemi 2016, 407-409).

Järvenpää (2016) writes arguments supporting the Finland's NATO membership. In sum, he argues that NATO membership would increase the security of Finland through security guarantees. Finland could join in on decision making related to the security environment of Europe and the world as a whole. Alongside its own national defense Finland could benefit from the alliance's rich economic and technological resources. People against the membership argues that the drawback would be that Finland would be mandated to join military operations abroad. Whereas others are afraid that Finland would need to take care of the security of the Baltics (Järvenpää 2016, 440). Lastly, it can be concluded that there will never a perfect time to join the alliance. It is therefore unwise to wait for a time when Russia would react positively to Finland's NATO membership plans (Anteroinen & Peltoniemi 2016, 442)

1.2 Scenarios

The term 'scenario' originates the dramatic arts and the theater. In a movie a scenarios is a set of directions for the sequence of action. It is a script for the film play (Glenn 2009, 1; Schwartz 1996, 3; Ralston & Wilson 2006, 15). Herman Kahn has been identified as the father of scenarios (Glenn 2009, 1; Van Der Heijden 2005, 16). Herman Kahn worked for the RAND Corporation for several years where he conducted security related research (Ghamari-Tabrizi 2005, 62-71). He further popularized the term 'scenarios' later on in the 1960's when working as the director of the Hudson Institute (Glenn 2009, 1; Van Der Heijden 2005, 16). Even though the usability of Kahn's scenario approach is somewhat being old-fashioned, his definitions and views regarding scenarios have stood the test of

time. According to Kahn (1967) scenarios are hypothetical sequences of events of focusing attention on causal processes and decision points. They answer to two kinds of questions; firstly, precisely how some hypothetical situation might come to be step by step, and secondly, what alternatives exist for each actor, at each of the steps, and what we can do to alter the situation for better or worse. Schwartz (1996) argues that scenario planning is about making choices today and understanding how they might turn out in the future (Schwartz 1996, 4). Jerome Glenn (2009) explains Herman Kahn's approach including three alternative scenarios: the surprise-free, worst-case and best-case scenario. Kahn's approach can therefore be seen as being too narrow. Schwartz advises one not to end up with just three scenarios (Schwartz, 1991, 247). Corporations started to develop scenarios for strategic purposes. Perhaps the best-known case was Shell International Petroleum Company, which used the scenarios before the 1973 oil shock. Shell's approach was all about preparedness. How to prepare for an oil crisis if the price of the oil gets higher (Schwartz, 1991, 7-9). The purpose of scenarios is to systematically explore, create and test alternative future environments that might unfold in the future (Glenn 2009, 3).

Scenarios can represent a qualitative or quantitative approach on researching the future. Qualitative scenarios are descriptive and written narratives of the future. When the scenarios are descriptive and written narratives, they are exploring the future. Therefore, they are called "explorative scenarios". These scenarios explain how a trend could evolve starting from the past and present leading to probable futures (Glenn 2009, 2-3; Godet 2000, 11). Good scenarios discuss the cause and effects linkages, they include projections on the futures and they describe events and trends in the manner in which they could unfold. They are plausible, internally consistent, and sufficiently interesting and exciting, (Glenn 2009, 2-3).

Schwartz (1996) declares that scenarios are not predictions. It is impossible to predict the future with certainty. In everyday language, scenarios are referred to as a chain of events that turn into an imagined outcome (Ralston & Wilson 2006, 15). Ralston & Wilson (2006) explain that scenarios are simply just stories of possible futures. Scenarios should be designed so that they have a plot and a storyline, which are tracing trends and developments, cause and effect, and interrelationships among events (Ralston & Wilson 2006, 15). Scenarios work well in assessing the changes in a security environment. Ralston and Wilson (2006) agree that scenarios are well suited for political risk assessment (Ralston & Wilson 2006, 52).

A futures table was used as a tool to create the scenarios. Yrjö Seppälä (1984) defines the futures table in the following manner: a futures table is a collection of sectors divided by future states, which often represents one perspective. A future state represents the dominant view which can come to true in 5-50 years. For each sector there can be only one state at a time. The states of the futures work as a basic data which are being used to collect the future images and development paths (Seppälä 1984). Ritchey (2009) uses the definition ‘morphological’ to essentially describe the same thing as a futures table. The definition of the method is the same. Where Seppälä speaks of sectors, Ritchey defines them as parameters. In both, the idea is to construct a table in order to see interconnections within the trends indicated.

1.3 Normative scenario

Objective scenarios are evaluating the future external environment, including trends, uncertainties and the break point, and then seek through the analyses to make decision propositions to consider the impacts on environment (Ralston & Wilson 2006, 22). Normative scenarios have an opposite view; they ask questions about alternative futures based on visions; they are goal oriented. The questions related to normative forecasting are “How would we like the future to evolve?” and “How should we act?” (Ralston & Wilson 2006, 22; Glenn 2009). Essentially normative scenarios contain the idea that there is a possibility to influence the external environment through actions (Ralston & Wilson 2006, 22).

Glenn (2009) identifies that there are two central features in normative scenarios. The first one is to understand the current world and its objectives. The second step is to identify the states from the present day towards the objectives. Normative scenarios jump ahead towards the objective. When the target is identified, the forecaster reverts his focus from the future towards the present day while identifying the steps for reaching the goal. Glenn terms this approach as “backcasting” (Glenn 2009).

Glenn (2009) claims that the most common weakness of normative scenarios is that not enough necessary data is being gathered to identify the current environment. In addition, its weakness is that it brings too narrow a range of goals and not enough people are included in the planning process. While normative scenarios suit complex matters well, the end presentation can be too complex to present, as well.

1.4 Big data

Marr (2016) suggest that ‘big data’ means that we can collect and analyse data in such a way that was impossible previously. Big data gets its power from increasing amount of data on from anything and the improved methods to store and analyse data. Field (2017) says that statisticians are unable to handle big data due to the software engineering skills that it requires. Marr (2016) argues that by the year 2020 it is predicted that a total of 1.7 megabytes of data will travel second via email, Whatsapp, Facebook, Twitter etc. (Field 2017).

What is big data? Emrouznejad and Charles (2019) say that there are multiple definitions for big data and a unique definition has not been reached. They argue that it is customary to define big data in terms of data characteristics or dimensions. It is possible to indicate these under the so-called four V’s which are volume, velocity, variety and veracity (Emrouznejad & Charles 2019, 6). ‘Volume’ stands for the rapid increase in the amount of data created daily. ‘Velocity’ refers to the speed at which data is being generated. ‘Variety’ refers to the fact that the data is being created in various formats such as web, video, audio, GPS signals, social media etc. Some of the biggest challenges lie within the variety of unstructured data (ibid 2019, 6). Lastly, ‘veracity’ refers to the trustworthiness of the data. When making decision with data, it is essential that the data can be trusted.

In this research a Google Alerts provided open data is being used. Google Alerts is a service provided by Google. It collects data from the internet based on the preferences the user has set. It is problematic to identify how the algorithm functions. The functionalities are protected under tight wraps (Simon 2015, 17-18) There are no sources found that clarify it transparently. Lanier (2018) says that the algorithms are well-protected and that there is nothing to be found of them, not even from the dark web. Google has been a key driver for companies to unleash the power of data (Simon 2015, 18). Google Alerts was found as fruitful source of investigation. We can still argue whether the amount of the data is actually “big” since it lacks clear unique definition, but we can argue that meets the requirements of the four characteristics defined above.

1.5 Research gap

Even though the studies presented above are discussing about states of the futures they are lacking futures methods as a tool. None of these papers are targeting the general public nor pushing possible referendum voters into action. This is a research gap that needs to be filled. The second gap is the need to use futures research methods when scanning the possible scenarios regarding Finland's potential NATO membership. The studies on this topic discuss on pre-determined factors related to law and defense but are lacking a holistic view. As shown above, there has been a lot of research around the topic of NATO in Finland, but not from futures studies perspective. The third gap is the big data analysis. Even though open source research exploiting various data sources has been done before in security studies (see Aro 2019, 297-304) I have been unable to find concrete examples on how to exploit Google Alert's in security and futures research.

1.6 Aims, objectives and research questions

The main goal of this study is to answer on the following research question: *“What are the consequences if Finland joins or does not join NATO?”* This research question results into three collateral objectives. The first objective is to form alternative outcomes if Finland joins or does not join NATO. This is done in order to answer the question: *“If there is going to be a referendum, how should I vote?”* The second objective is to compare Finland's history to NATO's in order to understand significance of Finland's history in the matter. This includes the study NATO's history and cause to give understand how it is relevant from Finland's perspective. Third objective is to find out if Google Alerts' data could work as a data source for scenario planning, as well as to find out how to use quantitative and qualitative approaches to analyse the data.

1.7 Outline of the thesis

As it has been mentioned already futures studies is multidisciplinary, which means that all of its parts have different scientific approaches. There are altogether seven parts in this

thesis. The first part has been introduced already. The second part presents the theoretical conceptual framework and introduces the concept of environmental scanning and content analysis. The third part is the political history section which discusses the history of Finland, NATO and predetermined factors in case if Finland decides to join NATO. This part is essential in understanding the background of this thesis and why this discussion on the membership is needed. The fourth part introduces the materials and methods. There it is explained how the data was collected. The scenario process the Python method and the analysis framework are also presented. The fifth part is the analysis section and it is where outcome of the research is being presented. The sixth part introduces the main findings and proposes possible shocks that were not considered thoroughly based on the scenarios. The last part is left for discussion, the assessment of the research, its contributions, ethics and limitations. Also, there are proposals for future research. I also recommend to see the three appendix files that presents additional visualizations, the Python code and full data set, unfortunately in picture format.

2 THEORETICAL AND CONCEPTUAL FRAMEWORK

2.1 Environmental scanning

The scenario process involves research skilled in hunting and gathering information (Schwartz 1996, 60). Schwartz argues that the scenario planners tend to pay attention only to what they think they need to know. He says it would be important to continually alter what to look for, but to beware of becoming overwhelmed.

Historical study is essential for the scenarios process. Van Der Heijden (2005) says that it is useful to look back to the history as long as the scenarios are looking forward. Historical research is needed to indicate possible interpretations which work as a basis for a continuity of the scenarios (Van Der Heijden 2005, 190).

There is no clear methodology on how to locate signals and forces, but there are still some key steps to follow even if the methodology would vary. The key steps are exploration, assessment and application. Exploration is a step where the changes are being monitored, information is being gathered and the external environment is being scanned. The idea is to mine a lot of data and not to worry about the issue whether it is usable or rubbish. Data in this context does not mean only numbers and figures created by computers, it stands for everything around us, observed phenomena, books, pictures, other people etc., In the assessment part the data is being evaluated in terms of whether it is useful or useless. In this part the data becomes information. At last it is decided whether to use the information or not. It can be used for example in strategic planning, foresight activities and risk management (Garnett - et al 2016). Environmental scanning is a method for trying to study the probable and possible futures.

Environmental scanning has its background in the 1960-1970s. At that time, environmental scanning was confused with environmental topics and that is why new terms were created. Environmental scanning has some synonyms e.g horizon scanning, futures scanning system and early warning system. (Gordon & Glenn 1994). Horizon scanning differs from environmental scanning. Environmental scanning means scanning the environmental changes, opportunities and trends that are happening currently. These changes can be located in different sectors: political, environmental (business), social, technological, environment and customer, cultural, competitors. This is commonly known as PESTEC. There are various acronyms for the same matter: PESTE, PESTEL, STEEP etc. Horizon

scanning is explores for long-term emerging issues and driving forces, whereas environmental scanning is supporting the short-term view (Miles and Saritas 2012; Babatunde & Adebisi, 2012; Rowe, Wright & Derbyshire, 2017). Babatunde & Adebisi (2012) argues that the political factors relate to what degree the government is intervening with the issue at hand. It is essential to remember is that the political factors can be both good or bad. Economic factors include for example phenomena under economic growth interest rates (ibid 2012). Social and cultural factors relate to health consciousness, population growth rate and emphasis of safety among other soft measures (ibid 2012). Technological aspect scans for technological development paths referred to R&D (ibid 2012). The goal of environmental scanning is to observe and forecast change and to make development plans in relation to them.

PESTE analysis is conducted within the content analysis. As previously explained 'PESTEC' stands for political, environmental (business), social, technological, environment and customer, cultural, competitors. For the purpose of this thesis it is important to make a definition for each category, since the topic differs from the business environment. The 'C': customers, cultural and competitors did not seem to be a good fit for this as it is rather difficult to categorise. There will be overlaps and there is a risk of the researcher's subjective view in to defining the category. In the political scheme there are themes related to foreign affairs, politicians' views and political views on different matters. The economical category includes information on related to the funding and costs. The social category is about people's feelings and public discussion around the NATO topic. The technological category is includes new defense innovations or other technological developments. The environmental (security) category includes information about the changes in the security environment.

2.2 Content analysis

Content analysis is a method for analysing textual data systematically and objectively (Tuomi & Sarajärvi 2011, 103). The core idea is to define different categories inside the text. Tuomi & Sarajärvi (2011) argues that content analysis is based on an interpretation and deduction, where empirical data are studied conceptualizing the phenomena under research (Tuomi & Sarajärvi 2011, 112). In document-based analysis the goal is to create a theoretical concept Tuomi & Sarajärvi 2011, 95). Qualitative document analysis is

based on logical deduction and interpretation where the data is being broken to parts, then it will be conceptualized in a new manner to a new logical concept (Tuomi & Sarajärvi 2011, 108).

At first, a researcher needs to define the recording units (Weber 1990; Tuomi & Sarajärvi 2011, 110). This is important in the sense that the most essential information for the research will be analysed. The information should bring information to the research questions. When the recording units are defined at some level, the next part is to start clustering the information. Clustering means that the text is being categorized. Text is then put into different sectors of meanings (clusters) (Weber 1990). Weber (1990) explains different options for clustering. The first is called 'word sense' which is a computer program analysis based on the meaning (semantics) of the words. The second, is to analyse the entire sentence. The researcher could assess the sentences based on their positivity, neutrality or negativity. The third way is to define the theme as unit of the text. In each text there could be defined, a perceiver, the perceived or agent of action, the action and the target of action. Another way is to analyse paragraphs or entire texts. When analysing larger sets, the reliability of the research might be affected (Weber 1990). In this process, the irrelevant information is left out. Data is reduced by coding the material to find out the most important expressions for the research (Tuomi & Sarajärvi 2011, 109-110).

There are two basic decisions that the researcher needs to consider. The first one is whether the categories are to be mutually exclusive. If the results fall in several different clusters, it can create problems to statistical procedures. One could end up with violated results. Weber (1990) says that the second choice is made regarding the way the clusters will be narrowed, since the categories can involve several sub-categories. Weber (1990) recommends one to carry out a pre-coding on a sample of text. He argues that it is a good way to see ambiguities in the rules and it reveals insights that could be used to alter the categories. Tuomi & Sarajärvi (2011) says that the key idea is that the recording units are not predetermined or considered. Any previous observations, knowledge or theories about the phenomena under research should not be considered. The content analysis should always be based on data (Tuomi & Sarajärvi 2011, 95).

Weber (1990) explains that the next step is to assess the content accuracy and reliability. Weber (1990) reminds that human coders are not as reliable as computers. During the process their coding rules may change which leads to greater unreliability. Then again computer-based analysis is exposed into misclassifications done by the new words which

were not in the pre-coded material (Weber 1990). Accuracy stands for that the data being correctly coded. If human coders are used, the reliability of the coding process should be evaluated, before resolving disputes among the coders (Weber 1990). The fifth part is to revise the coding rules. If the reliability results are low or if there are errors in computer aided analysis the rules need to be revised or the software to be corrected. Next step is going back to the step three of coding a sample text. This cycle needs to be repeated until the reliability of the results is on a desired level and everything works correctly. Naturally, the next step is to code the whole material. When the pre-coded material is working correctly, the coding rules can be applied to the whole content (Weber 1991). Weber introduces more computer-aided content analysis. Therefore, the sections he introduces are not working simultaneously with the approach introduced by Tuomi & Sarajärvi. A continuous analysis can create a bias to the research effort by increasing the researcher's understanding about the data each time. Tuomi & Sarajärvi (2011) says that the most important part is to define what elements of the data are interesting stand by that decision (Tuomi & Sarajärvi 2011, 92). A continuous pre-analysis to maximize the reliability can alter that decision as well.

3 HISTORY REVIEW

3.1 Finland's drift towards NATO

Finland used to be a part of Sweden until 1812, when Finland was forged as part of Russia (Meinander 2014, 126-127). In 1917 Finland cut its relations to Russia and declared independence (ibid 191). This led into a Civil War which was short, but bloody, leaving behind an internal grudge for a long time (Meinander 2014, 197; Virrankoski 2016). Soon after The First World War ended in November 1918, on In the New Year's Eve in 1917-18 Lenin signed a contract to acknowledge the independence of Finland. The goal was not to support the Finnish citizens behind the independence act, but to accelerate the revolution.

Finland became a republic in 1919 with the confirmation of the nation's leader Carl Gustav Mannerheim. Finland chose K.J Ståhlberg to be the first president, leaving the opponent president candidate Mannerheim behind (Meinander 2014, 204). England and the United States acknowledged Finland's independence at the end of May (Virrankoski 2016). On the first day in September in 1939 Germany started a war against Poland (Virrankoski 2016). Finland was reluctantly been drag into the Second World War in 1939. (Meinander 2014, 226-227). Finland was framed by the Soviet Union. They shot the famous shelling of Mainila and claimed that Finland was behind it. The Soviet Union gave themselves the reason for themselves to begin the war on November 30th of 1939. (Meinander 2014, 228; (Virrankoski 2016). This resulted in the Winter War between Finland and the Soviet Union which ended on 13th of March in 1940. (Meinander 2014, 230).

In 1940 Finland started its cooperation with Germany during World War II. In January 1941, the odds of Germany winning a war against Soviet Union seemed good. (Meinander 2014, 233). During the spring the cooperation with Germany developed into a secret decision to declare a war against the Soviet Union (Virrankoski 2016). In the end Finland lost the battles due to a weakening Germany. In the peace negotiations in 1947 in Paris, Finland was ordered to pay 300 million dollars, which was half of the previous demands that Soviet Union had imposed on Finland. In addition to this Finland lost a few areas where the Soviet Union was building forts and former brothers in arms (the Germans) had to be disarmed and banished from the North. This again resulted in a war in Lapland. (Meinander 2014, 239-240). After the wars Finland was truly dismembered and

savaged but it remained independent nonetheless (ibid 240). So began the Finland's reconstruction.

When the declaration on peace was signed in September 1947 it left Finland in a new position. Europe was dividing into two different camps. Stalin did not see non-alignment as Finland's option and recommended that Finland to sign a contract that would prevent Finland from drifting to the Western camp and NATO. The contract was signed in April 1948 and it is better known as the 'agreement on friendship, cooperation and mutual assistance' (YYA-sopimus in Finnish). The contract was not actually an agreement on mutual assistance - it was more of a promise of Finland's non-alignment. During the Cold War this contract was renewed on a regular basis; in 1955, 1970 and 1983 (Meinander 2014, 245-247; Rusi 2016, 34; Virrankoski 2016). In 1955 West-Germany joined in NATO and as a response the Soviet Union formed the Warsaw Pact (Meinander 2014, 249). The balance in North Europe's was based on the YYA-agreement (ibid 274). The agreement was balanced with Sweden's even stricter non-alignment and Denmark and Norway's NATO memberships. Any disturbance in this situation might have changed the situation between Soviet Union and the West (Meinander 2014, 274). The occupation of Warsaw Union's Czechoslovakia in 1968 had impacted on the Soviet Union. Moscow presented an idea that in there would be a security meeting where an agreement would be made regarding the stabilization of the relations and strengthen the political divide which had happened after the peace negotiations in Paris in 1947. Finland hosted this meeting and it gave it the chance to promote the idea of a non-nuclear area in northern Europe. After six years the agreement (Finnish; ETYK. English; OSCE) was signed. OSCE stands for Organization for security and co-operation in Europe (Meinander 2014, 275, Virrankoski 2016).

The collapse of the Soviet Union led into a chain of events. It gave a chance to the rebirth of Germany and to the unification of Europe's economy and politics into a European Union. The YYA-agreement was broken in 1992 and less than three years later Finland joined the European Union and started cooperation with NATO. There was a referendum on whether Finland should join the European Union. The voters against joining the European Union feared that Finland might lose its national independence and would drift towards NATO. 56, 9% of the voters voted for joining the European Union. On first of January in 1995 the membership in the European Union came to effect (Meinander 2014, 297; Virrankoski 2016). The result of the referendum was affected by the fear that Russia might still threaten Finland's independence (Virrankoski 2016). Around the same

time the Baltic countries gained their independence (Meinander 2014, 289). During the years 1991-1995 the Finnish national coalition party governed Finland. At that time, Finland acquired 64 F/A-18 Hornets from one of the leading military equipment manufacturers in the United States. The hornet acquisition made the Finnish Air Forces quickly adjustable and scalable in regards to NATO. In addition, Finnish pilots were sent to the United States for trainings at this time. In 1995, first eight hornets were delivered across the Atlantic. During the years 1996-2000 the cooperation deepened and altogether 56 Hornets were assembled and embedded to NATO's satellite structure and other technical infrastructures. At the same time the President of Finland met NATO's general secretary for the first time. Finland applied for an observation status in the North Atlantic Cooperation Council (NACC) (Meinander 2014, 117, 294-296; Martin, 2004, 99). This was met with criticism from controversial member of Social Democratic Party Kalevi Sorsa (Rusi, 2016). This is important due to the fact that Sorsa was believed to have close ties to Moscow. These events were the first noticeable signs of Finland's drift towards NATO.

In the spring 1995, the government confirmed that its goals regarding security policy were the military's independence and national defense, but it also that those goals could be rechecked if necessary (Meinander 2014, 313). During the years 1997-2011 there several were re-checkups which clarified Finland's readiness in joining to NATO (ibid 314). The balance in the Baltic region's security could become endangered due to rapid changes in security policy from in Finland or Sweden. In addition to this, it does not sound tempting for Sweden or Finland to take care of a significant part of the Baltic region's defense (ibid 314). The burden of the history and Sweden's non-alignment to NATO might be the reasons behind this (ibid 314). In 2002, the predecessor of president Halonen, Martti Ahtisaari proposed that Finland should join NATO. Since it was forming to be a one of the most essential security alliance for Finland. The statement, however, was only vague statement. The statement did not happen in the best possible time, because the public's support of NATO at time was 18% (Rusi 2016).

Riiheläinen (2017) estimates that the possibility of NATO membership has decreased in recent years. Finland seems to prepare for a weakening position of the EU and for a more unlikely NATO membership, by making dyadic pacts (ibid 61). In practice, Finland has tied itself as tightly as possible to western defense systems as possible, without a NATO membership. In the EU region it is self-evident that in the military matter they are NATO standardized (ibid 98). In Finland the citizens are against NATO membership, partly because they believe that Finland does not need nor would receive any assistance

if needed. Also, there it might exist a fear of taking part in a wrong kind of collaboration (ibid 99). In any case Finland's determining force for security policy is Russia. Russia's strong opinion against Finland's NATO membership makes it a focal issue (ibid 100). NATO membership can be achieved only if most of the citizens are in favor of the membership. But it is important to notice that NATO does not require a referendum (ibid 116). There are two big factors against a possible referendum. Firstly, the information warfare, and secondly the lack of information. It would be a big matter for Russia, therefore they would do anything that is possible to prevent the membership. Also, the lack of information is referring to the information that the public have. Information related to security and intelligence can be classified (ibid 117). If the end result would be most likely against the NATO membership, there should be no referendum (ibid 117).

Karvinen & Puistola (2015) introduces an interview in 2012 by Risto Makkonen with Sauli Niinistö, the president of Finland. There is a point where Makkonen asks why NATO has such a bad reputation here in Finland. President Niinistö argues that there might be multiple factors, one might be historical causes. He thinks that in Finland there are a lot of people who think it is better to remain unaligned. It might also be that people do not know how NATO has reformed and how it is continually reforming. Then the president says that he does not see the public's opinion as a problem, because people have right to their opinions and that should be respected (ibid 159). Joining to NATO does not require a referendum, but there should be a good support from the people. NATO does not indicate how then the opinions should be measured (ibid 233). If Finland ever applied for the NATO membership it would be decided by the president. It would also require a proposition of the government (ibid 233). The joining would not be a quick path. Finland would need to make some changes in its constitution and make other kinds of reforms as well. But with Finland being so close to NATO already, it would not take more than approximately a year (ibid 235) Finland has kept the 'NATO option' open through every government term (ibid 208, 223-229). Former president of Finland Martti Ahtisaari said, that the NATO option is not real. It is the equivalent of purchasing a fire insurance when the fire is just around the corner. (ibid 227). Something to remember is that NATO does not enlarge during a crisis. In 2014 former politician of Finnish national coalition party and current Mayor of Helsinki Jan Vapaavuori said that joining to NATO is a natural extension of Finland's West-oriented foreign policy. Finland should secede its discussions on Cold War. Finland belongs in NATO, he argues. (ibid 226)

One important fact is that not all the NATO countries have the same fear that they want to acquire their security guarantee (The 5th article) for. Karvinen and Puistola (2015) makes a note that the United States and the Great Britain have their most acute threats in the Middle East and with terrorism rather than with Russia. The fear of Russia is quite different for Italy, Spain, Portugal or France than for example for Finland. In addition to geography the fear can be explained by history and by cultural and economic factors. (Karvinen & Puistola 2015, 35)

3.2 What is NATO?

The North Atlantic Treaty Organization is an alliance of 29 independent countries (NATO 2018). The North Atlantic Treaty was signed in Washington on 4th of April in 1949 (NATO, 2006). Kuusela (2016) argues that it is often said that NATO was born in response to the Soviet Union's threat potential. NATO main tasks were to create a deterrence against the Soviet Union's enlargement and to prevent a rise of nationalist militarism in Europe in by embedding United States to protect Europe (ibid 239).

According to NATO's strategic concept, which was accepted in 2010 (the previous one was accepted in 1999), there are six tasks for NATO. The first is to safeguard the freedom and security of all its member states by political and military means (NATO 2010, 6). This is the primary reason for joining the alliance. To create a defense and deterrence so that the country will seem like an unfavorable place to make an attack or pose a threat towards. This is guaranteed by the articles 4 and 5. Article 4 is where NATO will provide consultation process whenever there is a threat to any of the following territorial integrity, political independence or security (NATO 1949). The article states that an attack against any ally country is considered as an attack against all the allies (NATO 1949). The second task indicates that the primary responsibility of the Security Council is the maintenance of international peace and security by protecting the common values. These values are individual liberty, democracy, human rights and the rule of law (NATO 1949). The third is the continual defense on both sides of Atlantic, North America and Europe, the so called Transatlantic link. The defense will be executed based on solidarity, common purpose and burden-sharing (NATO 1949). The fourth principle is about safeguarding alliance members. This part contains several sub tasks. The first sub task relates to the 5th article. In case of an attack the member countries are mandated to assist other

members in accordance with article 5 of the Washington Treaty. NATO will provide deterrence to any threat and defend in case of aggression or other security challenges. This is called collective defense, the cornerstone of NATO alliance (NATO 1949). The second sub task is about crisis management. NATO will assist before, during and after conflicts (NATO 1949). The third is cooperative security. The security of any member country can be affected beyond the country borders. The alliance will actively enhance international security among relevant partnerships and other countries. One point in here is to keep the membership door open to all European democracies that meet the NATO standards (NATO 1949). Sometimes countries need to make some adjustments to their law, sometimes even to the constitution, to meet the requirements of the NATO standards. It is worth noticing that NATO does not accept new partners that are in ongoing conflict. The fifth principle is that any ally can bring any security issue to the table to discuss, share information, exchange views and forge common approaches. (NATO 1949). The sixth task is the continuous process of reform, modernization and transformation (NATO 1949). The security matters are rapidly evolving all the time, and new threats emerge. It is important to maintain convincing deterrence and defense in turbulent times.

In the Washington Treaty it was not declared how the decisions are to be made. During the negotiations in 1948 they used consensus. It means that the negotiations continue till there is a unanimous decision. This was called 'The NATO spirit'. Consensus forces to acknowledge the minorities, too, but because of it the decisions often end up being compromises. The decisions are made in consensus, but not with an agreement. (Karvinen & Puistola 2015, 59, 110) A well justified question at this point would be that: "How the decision making process would affect Finland's future scenarios?"

Russia has had a negative attitude concerning NATO's enlargement, especially on its near territories (Sierla 2007, 26). NATO-Russia relations can be compressed into three chapters, bluster, try-out and destruction. Between the years 1997-2004 NATO enlarged with three members, even though Russia was strongly against the expansion. Russia saw this as blustering (Karvinen & Puistola 2015, 124). When the Baltic countries joined the alliance Finland's president at the time was Halonen and she declared that this enlargement is not altering Finland possession in a security politics (Rusi 2016, 43). At the time, during a NATO summit in Rome in 2002, a new chapter was turned when the NATO-Russia council was established. The goal was to increase mutual understanding, but it failed in the end. At the NATO summit in Wales in 2014 NATO had to agree that the

partnership could not continue because of the occupation of Crimea and the Ukrainian crisis (Karvinen & Puistola 2015, 124).

During the Cold War NATO enlarged three times. 1952 Greece and Turkey joined, 1955 West-Germany and in 1982 Spain (Sierla 2007, 10). When the Germanies united in 1991 NATO enlarged to East-Germany territories with a mutual understanding on the Great Powers. The United States Secretary of State at the time, James Baker, promised the Soviet Union that it would not enlarge anymore. As a return the Warsaw Pact withdrew its soldiers from East-Germany (Karvinen & Puistola 2015, 128). Kramer (2009) says that there is no real evidence that NATO would have made such a pledge. After the declassification of documents there were no formal agreement like this ever made. Kramer therefore does not justify Russia's arguments on this pledge. Even though there were no formal documents found on this pledge, it would be have been interesting to see if the Soviet Union would have made a formal paper out of this 'false promise.' When Bill Clinton became the president in 1992, there was a discussion on NATO enlargement again, since there were no Soviet Union opposing the proposition, but Russia was (Karvinen & Puistola 2015, 128-129). NATO's enlargement to the East started during the Madrid summit in 1997 when NATO invited three former nations of the Warsaw Pact, Poland, Czech Republic and Hungary to join (ibid 2015, 130), they became members in 1999 (Sierla 2007, 10). In 2002 NATO executed the "big bang" enlargement where Bulgaria, Latvia, Lithuania, Romania, Slovakia, Slovenia and Estonia joined the alliance. (Karvinen & Puistola 2015, 13; Sierla 02007, 10). NATO enlargement is a continuous process based on NATO's article 10 (NATO 2006, 183).

Currently the funding for NATO has been a big topic, since not all the countries are fulfilling the 2% GDP. Even the 2% is not a demand but a recommendation (Karvinen and Puistola 2015, 92) *"The US is paying for Europe's protection, then loses billions on Trade. Must pay 2% of GDP IMMEDIATELY, not by 2025,"* the President Donald Trump tweeted during the NATO summit (Trump 2018). In the declaration of the NATO summit in 11-12th of July in 2018 there was a part that said that all the allies have started to increase the amount they spent on defense. Some two-thirds of the allies have national plans to spend 2% of their GDP on military purposes by 2024 (NATO 2018). The goal of the burden-sharing is to get 2% of the country's GDP annually for military purposes (NATO, 2014). It has been calculated that the Europeans are already paying twice as much for the defense of the Europe than United States is spending (Dobbins 2018). The amount of

funding by the United States for NATO's armed troops are about 75 percent (Karvinen & Puistola 2015, 91)

3.3 Predetermined factors for Finland's NATO membership

What would it mean for Finland if it joined NATO? Finland would get the NATO's 5th article security guarantee, but on the other hand wise Finland would need to send its troops to NATO's operations (Karvinen & Puistola 2015, 237). There would not be any NATO bases built in Finland's territory unless Finland applied for them. But there is a lot of demand among the NATO members about where the bases should be built, therefore it would not be even a guarantee even if Finland applied it. Some Baltic countries have been wanting the bases, because they believe that it would give them more protection. The NATO troops and military equipment are scalable, so they are easy to move if needed (ibid 239-240).

Finland would need to re-estimate a lot of laws and regulations. Finland's constitution on chapter 8 international relations should be re-evaluated and laws about military government and services, crisis control, volunteer defense, supply security laws and several other regulations such as the agreement on Åland's islands neutralization (Sierla 2007, 47-48)

Then how much would it cost to Finland? The current military expenditure in Finland is 2,9 billion euros which is 1,3% of the GDP. There are several estimations about how much the costs would be. Sierla estimates that the costs would be 39 million euros annually excluding military equipment development (Sierla 2007, 36). Karvinen and Puistola (2015) estimate that the costs would be approximately the same, 40 million annually. It does not include participation in projects and operations (Karvinen & Puistola 2015, 242). In 2004 the Ministry of Defense set a group to determine a report on what effects possible NATO membership could have on Finland's defense structure and defense government. In the report's appendix 4 it is stated that the annual costs are the same around 40 million euros, but the total costs of joining NATO would be 345 million euros, of which 300 million euros would be paid during a 12 years' time period. The money would be needed for different development needs (Järvenpää 2004, 97). It seems that the real expenditure has not been recalculated for a long time. The current news about NATO pushing members towards the 2% GDP funding could increase Finland's real expenditure.

4 MATERIAL AND METHODS

4.1 Collecting the research material

Even before going to the website to set up Google Alerts one needs to have a Google account. At first one needs to go to the www.google.fi/alerts. It is necessary to be logged in. On the next step the alert is being created. This is where the alert is created. It is possible to type a search word that Google uses to track the online media. For the purposes of this thesis, only the keyword of 'nato' was used. To be precise there was no advanced Google Alert Search and the keyword was not in parenthesis. If a keyword is in parenthesis it solely finds exact matches. The third step is to set up the density of the notices. One can choose from three options: immediately, maximum of once a day or maximum of once a week. For this research, the option of once a week option was chosen. The fourth step is to give the alerts the following parameters: sources, languages and regions. This allows one to narrow the search results if needed. In this research there was no filtering done on these parameters. The possible sources can be chosen from: automatic, blogs, domains, news, videos, books, discussion forums, monetary. To have a holistic view on the phenomena all of the aforementioned options were chosen for tracking. Google Alerts can track media from a certain language, but it is essential to note that in this way the number of alerts could decrease. Language can be set to "all languages" which was an option that was chosen for this research purpose. Later on it was necessary to adjust the Alerts to exclude languages other than Finnish or English. Then it is possible to choose from the regions where the alerts are wanted from. All areas were chosen for this research process. After that one can choose whether to choose all the results or just the best hits. Then the best hits were chosen for this research. The last section is to fill in the email account where the alerts are wanted to be delivered. The final step is to monitor that the alerts are working as an automated process. This setting ended up with around 2-15 articles in each alert resulting in up to 10-50 per month, ultimately resulting in a total of 17 Finnish articles with 206 citations that were qualitatively analysed. Also, there were 190 English articles that were analysed as a bag of words with Python.

4.2 Scenario process

There is no single approach on how to build scenarios (Godet 2000, 11, Amer – et al 2013, 25). Most approaches to scenarios recognize the need to understand the system under study and identify the trends, issues, driving forces and potential events that could be critical to scenarios. Even if it is not always feasible to explain all in detail, but some might be worthwhile to explain lengthier (Glenn 2009, 5).

Michael Godet begins scenarios development by constructing an image of the current state of a system. This state is being described as broad and as detailed as possible with a description on forces for change. The goal is to identify mechanisms and leading actors of change. This process is being continued by the development of these actors' strategies (Glenn 2009, 6; Godet 2000, 11). This study's scenarios are created by Schwartz's model, with a few exceptions. The model is described below, and how a certain part of it has been executed in this research. To highlight, the Schwartz's model of scenario process is modified to fit the purposes of this thesis.

The first step in building the scenarios is to define a specific decision or issue (Schwartz 1991, 243; Ralston & Wilson 2006, 21-23). Schwartz (1996) asks a question "How can you be sure that the differences that distinguish your scenarios will really make a difference to your business or life?" (Schwartz 1996, 243). The questions on what kind of goals to achieve can be narrow based on a specific situation or broad ones that are related to strategic choices and large entirities (Schwartz 1996, 56; Ralston & Wilson 2006, 23). The focal issue at hand was "What are the consequences if Finland joins or does not join NATO?"

Step two based on Schwartz (1996) is to identify the key forces in the local environment. At this point, the researcher lists key factors influencing the success or failure of that decision. One essential question in here is to define what the decision-makers want to know before they key choices. Then again, what do we see as a success or as a failure? (Schwartz 1996, 242). The key forces are collected with Google Alerts. They are being identified by their frequency in the data.

The third step is to define the driving forces. At this stage it is investigated on what are the macro-environment is which is influencing the key factors identified in the previous step. Some of these forces are predetermined, for example the ones related to demographics (Schwartz 1996, 242; Van Der Heijden 2005, 87). Van Der Heijden (2005) argues population is predetermined to some extent. We might know that the kids of today

will become the parents of tomorrow, but we are unaware of the birth rates of the future. Even predetermined factors require assessment. Other forces are highly uncertain, such as public opinion. One task in this part is to search for major trends and trend breaks (Schwartz 1996, 242-243). Driving forces related to this research are not solely based on data, since the big phenomena were not identified with Google Alerts, such as demographics. On the other hand there are various of results from polls that indicate public opinion on the matter.

The fourth part is to rank the forces by importance and uncertainty. The idea is to locate the most essential trends affecting the key decision or focal issue at hand. Schwartz (1996) argues that the point is to identify two to three most important factors or trends (Schwartz 1996, 243). Van Der Heijden (2005) categorizes three types of uncertainties, risks, structural uncertainties and unknowables. Historical data will reveal possible risk and help to estimate the probabilities. Structural uncertainties are phenomena in which we know that an uncertainty might occur, but we do not know with which probability. Unknowables are factors that we cannot even imagine (Van Der Heijden 2005, 83-84). In the step five, scenario logics are defined. The idea is to create axes based on the previous step. This how it is possible to create four or even more different scenarios. Key questions in this part is which are the best plots to capture the dynamics of the situation and the ones that can effectively be communicated. In this study steps four and five were not conducted due to the reason that they do not fit into the character of a normative scenario. The axes which would have been created based on the impact and uncertainty matrix does not work because, the axes were created when setting the focal question on section one, defining the focal issue. There axes were created were the one axis was the decision whether Finland joins NATO (member / not a member) and the other axis was the outcome (positive or negative).

If the logic of forming the scenarios have been followed this far, we are able to see that the scenarios are missing their data. Schwartz (1996) calls the step six 'fleshing out the scenarios.' Schwartz argues that each trend should give some attention to each scenario. Some trends should be left out if they do not fit the plot of the scenario. Designing this part, the key questions that Schwartz (1996) reminds to keep in mind are "How would the world get from here to there?" and "What events might be necessary to make the end point of scenario plausible?" (Schwartz 1996, 245). The fleshing out has been done by adding a glimpse of narrative to the scenarios. To create a structure to the scenarios a futures table was created, which presents the key forces for each scenario outline.

Step seven is to find out the implications. What are the vulnerabilities that were revealed? The idea is to return to the focal issue or question and to find out how the scenarios answer to that issue or question (Schwartz 1996, 246)

The last part is to select the leading indicators and signposts. The idea is to create metrics to monitor in order to find out as early as possible which scenario is the most plausible.

4.3 Python

Python is a very popular coding language among the data scientist. It was developed by a Guido van Rossum. It was released in 1991. It is a high-level scripting language It is a great too for analytics due to its open-source technical libraries (Field 2017, 20). There is special vocabulary for coding such, as strings and lists. Strings are immutable, indexable and iterable sequence of letters. It is text in random length. Lists are self-evidently lists, but in coding they are referred to a dynamic sequences that are mutable (Field 2017, 27-29; Kuhlman 2013). In Python there are also libraries. These are a set of tools that increase Python's capacity to execute various of actions. For the analysis part in this thesis Pandas and NumPy have been used as Python libraries. Field (2017) explains that Pandas stores and operates well on data in frames and NumPy deals with numerical arrays. He argues that Pandas operates on Numpy arrays. The Python coding language is too wide to introduce. Therefore, the key concepts that are later on referred in this research are now being introduced.

4.4 Analysis framework

The research process is divided into two main futures studies methods, which are environmental scanning and scenarios. Environmental scanning is conducted through Google Alert (sections 4.1 and 5.1). That data is analysed to create word cloud and clusters, which will work as trend sources (section 5.2-5.3). From the data a futures table is being presented in (section 5.5). Based on this, images of the futures are created (section 5.5). These sections are visualized below in figure 1.

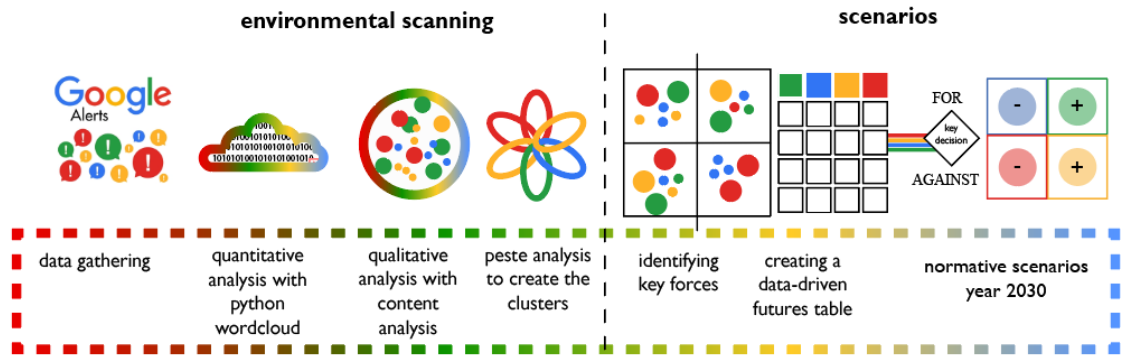


Figure 1 Analysis framework

5 ANALYSIS

5.1 Presenting the data

At first there was no clear vision on how functional the Google Alert data would be for the research purposes. Therefore, it was necessary to conduct a pre-analysis. The choice was made to conduct a content analysis for the first month. There was a total of 17 articles to be analysed. Google Alerts sends the articles based on the frequency chosen when setting up Alerts. The data that were received (approved articles) during the first month is presented in this section. Disapproved articles are not being analysed any further in this thesis. They were declined due to several facts e.g, the articles were in other languages than Finnish or English or the article source was not found (the link was closed or did not work). It is important to note that the data sources which were used, were only the websites that the Google provided the link for. There could have been additional information on the website, but it was under a link taking to another website. These links remained unopened. The language of the articles seems to be divided quite evenly. The most frequent source has been Iltalehti with three hits. Iltalehti is Finland's biggest tabloid magazine. As explained in section 4.1 "the best hits" were chosen. This might be the reason it gives more hits on the magazines that I read most often. The other magazines I have opened less frequently or never. This is essential to understand due to the reason that it was mentioned in section 1.4 that the functions of the algorithms are left unknown.

Content analysis was conducted with an Excel. The citations from the articles were collected and given an identification number (id) which was a running identification. With id it is possible to count the total amount of articles and track the citations back to a certain id. At this point it is important to highlight that the analysed sections are citations from the articles, therefore under one article there can be several citations that have been analysed. Then a meaning column was created next to it. The meaning is more like a translation than a pure meaning of the context, it was because there were Finnish articles included and this way it was possible to commensurate the material by translating them into English. However, the meaning column was left out from the final analysis since the reduced meanings would be the only ones that were to be used and there would be only Finnish articles to be qualitatively content analysed. The next column was reduced meanings. The idea was to explain in short what the citation was about. Then it was categorized

into three different categories based on the content. This part needed to be repeated two times to make sure that the categorizing coding works. The first category was formed during the research process. The final categories are to be revealed in upcoming sections. In pre-analysis part the material included Finnish and English articles, therefore it is not important to indicate the categories in here. The second category was a national cluster with “NATO” as an exception. National clusters were not used in final analysis. Last category was PESTE. At first it was debated whether it was a good option to have, but as the analysis process continued the PESTE revealed its strength. It was found out to suit the scenario process. The described process is presented in figure 2 Analysis in Excel.

id	Citation	Reduced	Category I	Category II	Peste
3	Venäjän puolustusministerin väitteet Suomen Nato-yhteistyöstä	Russia's defence minister talks	Russia's aggressive actions	Russia	Political
3	Suomi tekee itse turvallisuuspoliittiset valintansa	Finland's defence policy	Finland's defence	Finland	Political
3	Suomessa ei ole Shoigun mainitsemaa USA:n avulla sijoitettua	Finnish Ministry of Defence	Finland's defence	Finland	Political
3	Shoigu viittasi puheessaan Suomen, Ruotsin ja Naton väliseen	Defence pact between Finland,	Finland's defence	Finland	Environmental (security)
3	Toisin kuin Shoigu väitti, Suomella ei ole täysimääräistä pääsyä	Finland doesn't have full access on	Finland's defence	Finland	Environmental (security)

Figure 2 Analysis in Excel

During the first month I was able to analyse a total of 17 different categories. Those categories were then sorted to different national clusters and then combined as clusters. National cluster includes the national category where the content belongs to, and in addition there is a category analysed earlier. The visualizations of these are found in the first appendix – pre-analysis visualizations.

Conducting the pre-analysis gave information about the current phenomena around the topic of NATO. In addition, it resulted in a few deficiencies that needed to be considered during the research process. Firstly, the content analysis is extremely time consuming and without a question there was a need to come up with new ways of doing a solid analysis for the rest of the material. For all the articles in the pre-analysis it took approximately two and a half weeks (5 hours a day) to accomplish. Including the setting, analysing, coding, and visualising. The second issue was that the Google Alerts data quality varies a lot. Some of the articles are more suitable for the research purposes than others. Also, some Alerts were found useless and were not even accepted to be analysed. Therefore, it was chosen to analyse the data by using sampling. This is how it was possible to evade those articles which were not suitable for the research purposes and pick the most essential ones. There is a risk of the researcher’s subjective view to be highlighted here too much.

There were several options on how to conduct the analysis for the data. The first option was to do content analysis for the whole material. This approach was abandoned based on the understanding received in the pre-content analysis section. The work for the content analysis was found out to be overwhelmingly time consuming. The second option was to pick few months by sampling. There was a problem about which ones to choose: every second, every third or every fourth month? Or only Finnish articles? Or certain percent of articles from each month? The sampling could result in emphasizing something certain phenomena or missing something essential. The third option was to quite intuitively analyse the content of English articles based on the clusters analysed on the first month's material. This would have been fast but lacking a real scientific approach. Fourth idea was to analyse the first month by qualitative content analysis and the rest of the material by quantitative analysis (factor analysis or similar), and create clusters based on the clusters created from the first month of data. The possible problem with this is that not all categories are mentioned during the first month and the machine is not capable of creating coherent clusters without that information. The training material was not big enough. In addition, the material was bilingual. Of course, the analysis could have been done only by quantitative analysis, but that would lack the real insight on this phenomenon under research. The last idea and the one that was chosen was a combination of different approaches. The idea was to conduct a qualitative content analysis for the best suited Finnish articles. The chosen articles were categorized based on how well they would serve the research purposes. Also, in order to create quantitative content analysis a word cloud with Python programming language was created.

Altogether there were a total of 231 articles received from Google Alerts during a one-year data collection period. Above these there were numerous unaccepted Alerts as mentioned above. This was the first step to filter the material. The 231 articles were divided as such, the quantitative analysis included a total of 190 articles which were in English and the qualitative content analysis included 41 articles in Finnish. The 41 articles were filtered as follows. The most relevant articles of all the Finnish articles were collected and then estimated by their suitability for the research. Each article was given a number in between 0 to 3. 0 meant that it was not analysed (17,07% n=7), 1 meant that it was not relevant (9,76%, n=4), 2 includes signals (31,71%, n=13) and 3 that it suits for the research purposes (41,46%, n=17). The articles that were not to be analysed were due to the fact that there was an alternative article on the same topic. The categories with only 1 article in it were embedded into the other categories. Finland's counteractions against

Russia was embedded into Finland's defense. Ongoing conflict included military operations which seemed to always involve Russia, therefore that category was embedded to Russia's aggressive actions. Then the following three categories: Russia's relations to EU, shared threats, trade war and U.S Foreign policy were put into the same category called world politics. In the end there were 17 articles with 206 citations that were clustered. From the results it is possible to see that the material is related to three main PESTE categories which are political, environmental (security) and social. From these categories the most frequent clusters are Finland's defense (24,7%), Finland politics (15,05%), Russia's aggressive actions (15,05%) and population's feelings on NATO membership (14,56%). These results are being used in the key forces identification part. Figure 3 PESTE and content analysis sankey diagram visualizes these facts.

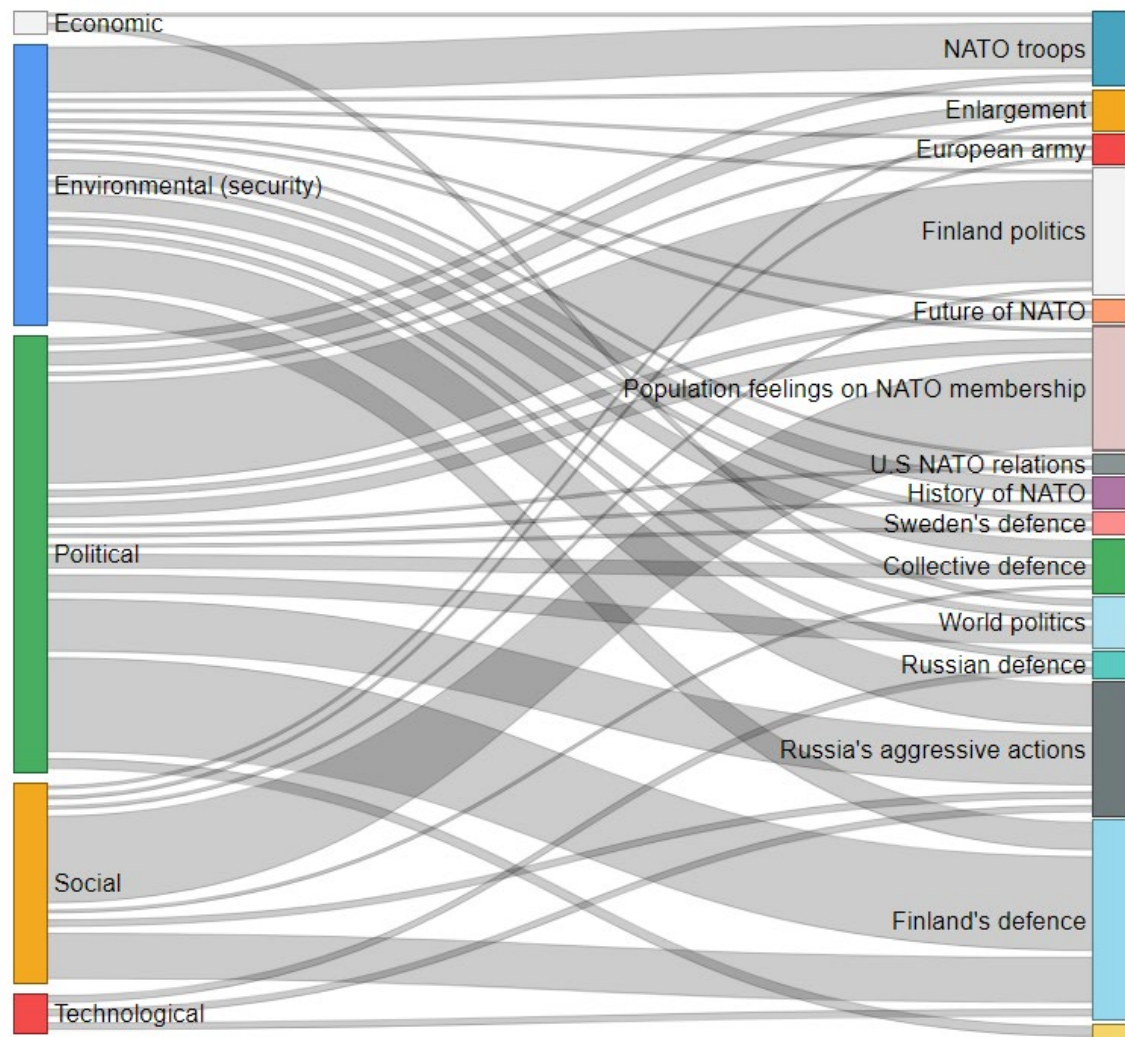


Figure 3 PESTE and content analysis sankey diagram

In this research Python was used to analyse a large set of English articles about NATO. The full code is presented in the appendix 3; however, the organization of the analysis is explained here in general terms. The first part is to import the necessary libraries so that the code functions properly, here Pandas and NumPy are being referred to. Secondly, the Excel file where all the articles are collected in a structural format is imported. To make sure that the import has been successful the first five rows of the data are printed or in general terms viewed. Then to view a larger set of data is being viewed and it is possible to see that there were altogether 190 articles. After this section all the articles are being formed into a one huge ‘bag of words’ as it is referred to in the coding language. This gives an opportunity to see how frequent a certain word is in the articles. At this point it remarked that the letters (strings) were in lower cases. This process was already executed in Excel. Otherwise Python would read NATO and nato as two different things. At last, the words were put into a word cloud which indicates the most frequent words. This could have also been done in Python but the need of it was anticipated earlier.

From the word cloud created (Figure 4 Word Cloud generated with Python) it is possible to see that the English articles strengthen the results from the Finnish articles. From this we can make an assumption that the global discussion relates to the local discussion on this matter, when it comes to topics. As has been mentioned already the material provides additional reliability for the qualitative data analysis, but it could not be used concretely in the scenario creation process.



Figure 4 Word Cloud generated with Python

5.2 Identifying the key forces

From the content analysis part the PESTE analysis was taken and the categories with less than 5 articles in it were filtered away. This gave us the three main categories which are

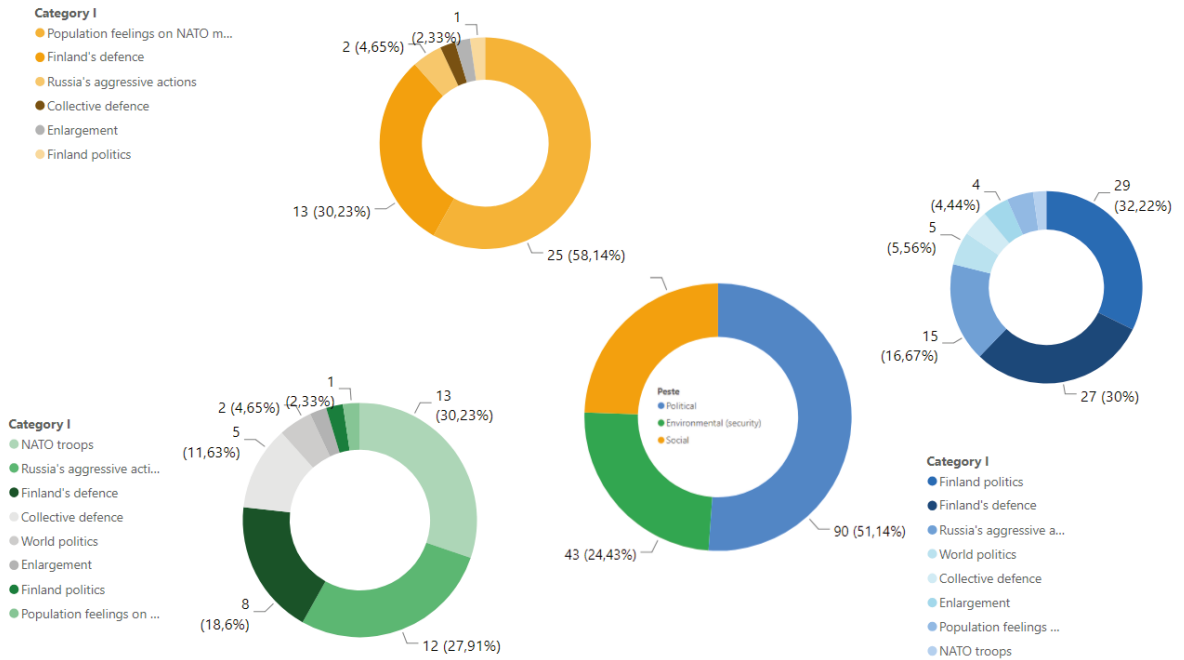


Figure 5 PESTE analysis forming the key forces

under scrutiny: political, security environment and social aspect. (see Figure 5 – PESTE analysis) Within these categories there are subcategories that are the key forces to follow. The categories are overlapping and can belong into several of main PESTE categories. Under each sub-category there are quotes from content analysis that are analysed on a holistic level.

Under social scheme there are two main categories which are population opinion on NATO and Finland’s national defense covering almost 90% of the social theme (ids 10, 76, 97, 129, 196 and 220). The population opinion on NATO category (ids 21, 48, 58, 75, 76 and 196) includes statistics from different polls which ask people’s thought on whether Finland should join NATO. The numbers vary a lot depending on who is conducting the surveys. The amount of NATO supporters varies between 20-48%. These numbers include surveys made for the public. The results from politicians are under the political scheme. To sum up Finnish people’s thoughts on NATO, the majority seems to be against becoming a member but a powerful variable which could turn this around is president Niinistö who could change the majority’s minds according to polls. But it is not so unam-

biguous, and the situation might vary depending on the current global situation as indicated in one of the articles (id 220) The other big theme Finland's defense' partly overlaps with the previous theme. There is discussion about national defense will and how defense pacts between countries are viewed. At last there is one interesting signal under Russia's aggressive actions theme. It says that "It is abnormal for the Russian media to judge and even threaten Finland." This can be seen as a new trend in Russian information warfare.

The political theme includes three main sub-categories which are Finnish politics, Finland's defense and Russia's aggressive actions (ids 3, 15, 21, 26, 36, 48, 49, 58, 75, 129, 158, 163 and 220). These categories cover around 80% of the political theme. The 'Finnish politics scheme' consist politicians' and political views on the NATO question. The tone of the discussion seems to vary based on the political background, whether the person is right- or left wing. It is important to keep in mind that the NATO membership requires consensus among the political parties (id 26). There are quotes about the NATO option which is a strategy to keep the NATO option open and join if the security environment worsens rapidly. The president of Finland Niinistö said that Finland could apply in two cases, first if Sweden decides to join or if Russia sees European Union as a similar threat as NATO (id 26). Finland's defense theme includes discussion about military cooperation between different nations and NATO. In id 129 it is argued that the president of Finland has kept Finnish Defence Forces in control. Since president Niinistö has said that Finland will not participate in NATO held military exercises that are practicing military operations under NATO's article 5. This is due to the fact that Finland is not a member of NATO, but is a so called 'partnership for peace ally'. Due to this reason Finland is not even qualified to join article 5 military exercises. This is a good example of the quality of the Google Alert data; the data sources are not scientific papers, but normal people, politicians, bloggers and journalists writing these texts. Third sub-sector was Russia's aggressive actions. It includes topics related to Finland's tightening NATO cooperation and Russia's response to it. It is claimed that based on the Trident Juncture (a military exercise held in 2019) Finland and Sweden are seen as being equal to NATO countries (id 48). This could be seen as an example of Russian information warfare and influencing through information.

Security environment is the last theme, and it consist of three big themes NATO troops, Russia's aggressive actions and Finland's defense covering around 75% of the main theme. Firstly, the NATO troops theme consists of a lot of discussion about Trident Juncture and the presence of troops around the Baltics. Russia's aggressive actions consist

of information about Russia's operation in Ukraine and how it has increased tension in Europe. In id 58 it is mentioned that "Russia knows the weaknesses of Finland and Sweden's NATO related strategies and is able to shatter it." There is mentions about Russian unmarked troops occupying Crimea. Also during the occupation of Crimea Russia threatened with nuclear force and it seemed to work (id 58). In the same article it is estimated that the most severe risk to Finland and Sweden is Russia's nuclear threat. These are the key indicators related to Russian aggressive actions under the security environment.

5.3 Identifying the driving forces

Driving forces are strong trends pushing or pulling the key factors - explained in the previous section – in some direction. For this case it is important to understand the big picture. The key driving forces would relate to politics in Finland and other driving factors are Russia, NATO and social matters in Finland.

The quantitative material indicates that the most frequent words are Russia, US (United States), alliance, Europe, security. It would require deeper investigation to locate the specific factors from the material but based on the material read the driving forces could be related to Russia's actions, especially the Crimea occupation. In addition, the Europe has been discussing on European defense, and at lastly, the president of the United States has been active during the NATO summits in discussing about the uneven burden sharing among the member states. These forces could be summarized as belonging to the themes of security environment and economics.

Based on the qualitative analysis one of the driving forces is politics in Finland. As it is indicated the views of NATO membership depends on the person's political background. As Inayatullah (2017) writes there are different perspectives for time. Politics is one that can be viewed through the pendulum time view. When the right wing is in power the left wing is just waiting for their time. The more power you have in politics the more unpopular you are. Consequently, the driving factor would be the political party which is in power at any given time. The collected material indicates that the National Coalition Party is openly supporting NATO membership.

Other driving forces are related to people's feelings about NATO. It is apparent in the material (id 196) that men aged 50-79 have a stronger willingness to defend their home

country than people under 25-year-old people. The Finno-Soviet Treaty could have created historical baggage for older people which manifests itself in a resistance to join NATO. Even though younger people have decreased defense will it does not mean that they would not like Finland to be safe and secure. It apparent in the polls that that younger people support NATO membership more than older people. The demographic and time itself are a self-evident driving forces, when the historical baggage is gone, perhaps the citizens will support the membership.

5.4 Defining the scenario logics

From this point on the scenario process starts to deviate slightly from Schwartz's scenario model. In this step Schwartz's proposes the idea of creating the axes based on uncertainty and impact matrix. However, the axes of the upcoming scenarios were created at the beginning of the research process. What would be the consequences if Finland joins or does not join NATO? Therefore, the first axis is whether Finland is a member of NATO and the second axis is the result, positive or negative. This is how it is possible to create four scenarios that the possible referendum voters will be thinking about. Also, this makes the scenarios normative. In addition, no futures table or morphological analysis is not mentioned in the Schwartz's model. A focal point is defined. In this case it is the referendum. Will there be one or not? The scenarios do not consider the probabilities of this, they are solely estimate the outcomes, whether the result comes from a referendum or not. Based on the collected data a data-driven futures table (figure 6) was created.

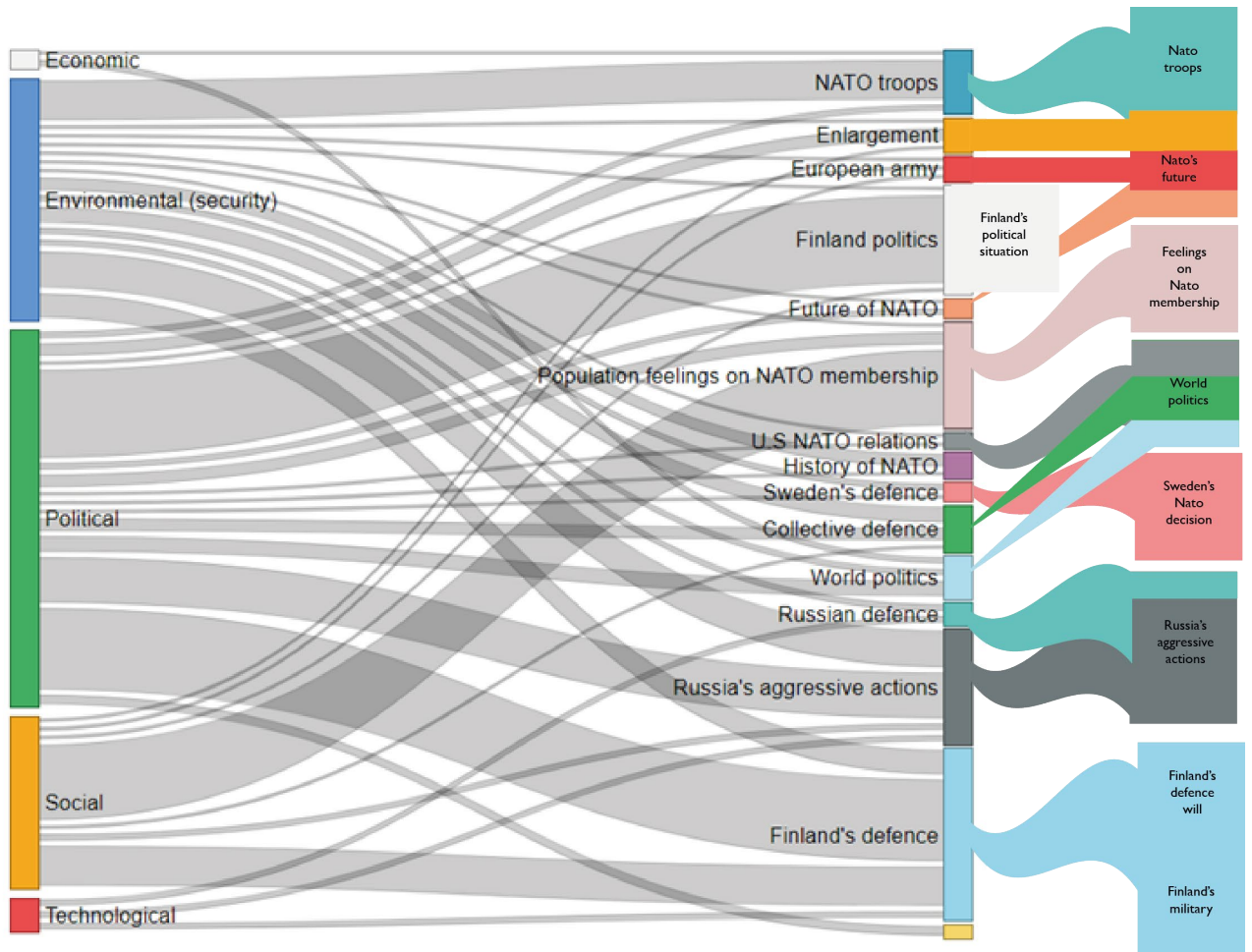


Figure 6 Data-driven futures table

5.5 Scenarios

All the following four scenarios are created based on a futures table (figure 7) which presents the characteristics of the NATO scenarios. The scenarios are envisioning a futures state from a strategical ten-year time perspective. To clarify, the year of the normative scenarios is 2030.

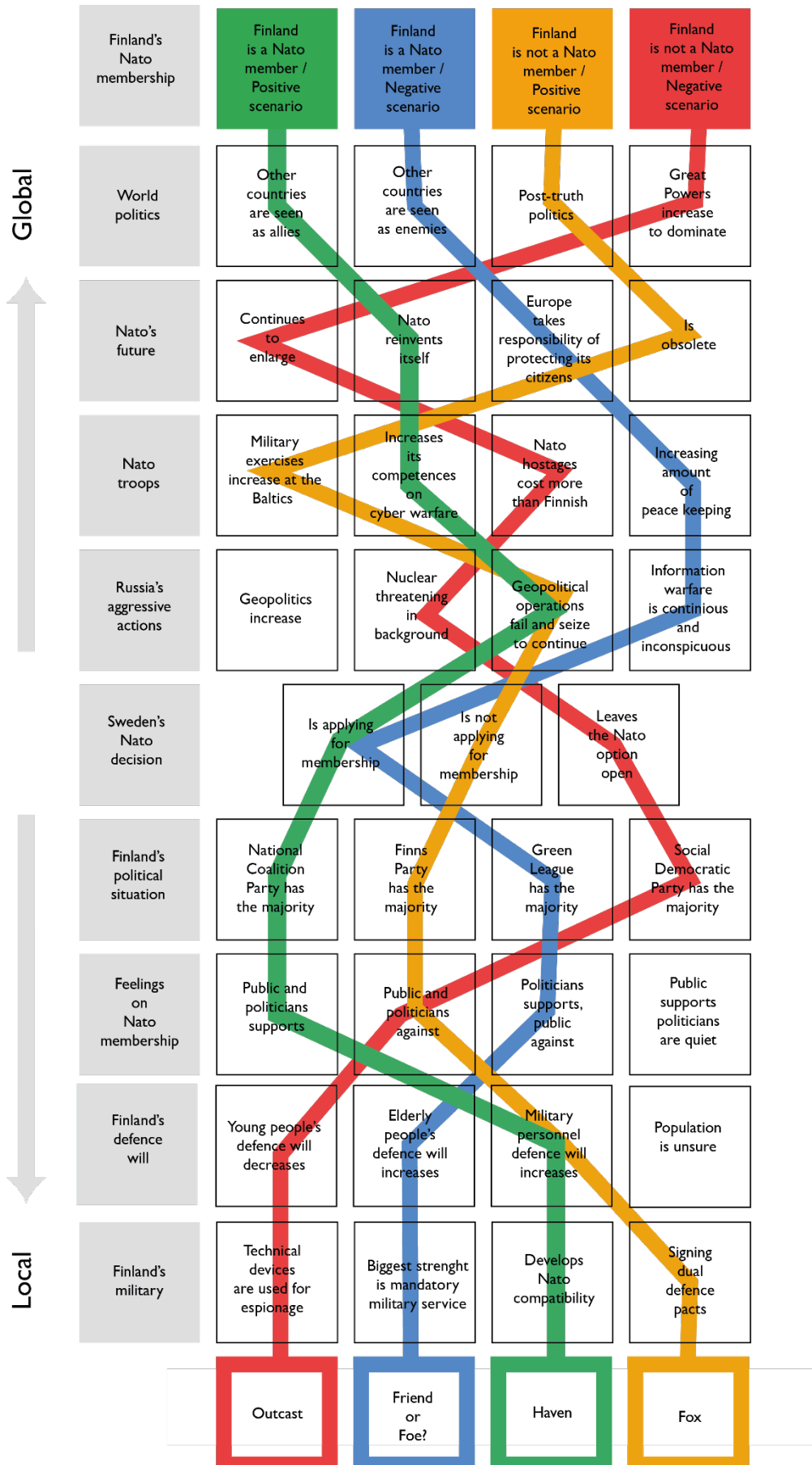


Figure 7 Futures Table: Characteristics of NATO Scenarios

5.5.1 *Friend or Foe*

Finland has become a full member of NATO, but the outcome has not been pleasant. The green league had the majority in the government. It did not have the NATO membership in their political plan, but somehow the general discussion put pressure on the politicians to set it to their agenda. Citizens were not supporting the membership, but somehow the decision was made. The public was against the decision because Russia was using disinformation to affect the voters. Also, Russians were able to affect the general discussion by accelerating Finland's membership plan. This was a high-risk-and-high-reward opportunity for Russia. The information warfare has been inconspicuous and therefore the general public has not seen it. Professionals were trying to explain to the general public what was going on, but it was hard, since they were easily designated by Russian trolls. The information warfare had come to be the new normal. At first, Russia's aim was to prevent Finland's NATO membership, but then history started to repeat itself and Russians took the same strategy as in November 1914 when Lenin signed a contract to acknowledge the Finland's independence. The goal was to cause chaos and accelerate Finland's internal revolution, once again. The operation has been successful in its goal to shake the trust for democracy.

There is a global phenomenon in politics that exploitation of other countries is a new the normal. The world has turned into a nationalism and protectionism. The primary goal is to protect one's own country and its citizens. This has been a problem in NATO as well. Consensus among the members is hard to reach. When Finland was applying for a full membership the consensus was hard to find, again due to Russian information warfare. In the end the anonymous decision was made, but not without a cost. There has been an increasing amount of peacekeeping missions which has now overwhelmed Finland's defense. Finland has noticed that this was not what it signed up for. Now Europe is trying to find new ways to defend its territories and is publicly considering resigning from NATO. Now people in Finland are feeling nostalgia. The strength of Finland is seen in its own military forces. Elderly people are really supporting on going back to the old times when everything was better.

5.5.2 *Haven*

The situation around the Baltics changed rapidly when Sweden announced it was going to apply for a NATO membership. This was due to of Russia's threatening geopolitics. In recent years Russia has had successful special operations with unmarked soldiers and these operations have not remained unforgotten. Now when Sweden was applying Finland had its chance to join to the defense alliance. There were a lot of classified discussions between the country leaders of Sweden and Finland. In Finland this discussion was led by the National Coalition Party. At all costs they were trying to get the membership process done. The party had pleasure that the Nato membership plan, which was declared in their political plan, was finally becoming true. Consensus among the NATO members was found fast. Sweden and Finland became full NATO members in order to enjoy the NATO's deterrence. Russia seized all its upcoming special operations in the Scandinavia in the fear of NATO's article 5.

The defense will of Finnish people had been decreasing overtime and outsourcing a part of national security sounded like a good option. The membership plan was given a greenlight from the citizens and politicians. Due to the membership the defense will of Finnish military personnel increased drastically. Latest technology was available and finally the military personnel were able to give their full consultation to ally countries on cyber security. NATO had been successful in reinventing itself so that the information warfare happening in cyberspace was considered as an act of war. This increased the protection of all countries. Especially Finnish cyber forces were seen as an asset. Luckily Finland had anticipated the need of cyber security educated people. Cyber security had become one of Finland's exports and a lot of new students from membership countries came to Finland to study. Finnish people with a knowledge of cyber security were quickly hired to the alliance's top positions. Finland's voice in the membership summits were heard and Finland found its place in global politics.

5.5.3 *Outcast*

Finland had been repeating its open-door NATO strategy for decades already. The Social Democratic Party had the majority in Finland's government, and they were not planning to establish a Nato membership plan, as usual. There were several reasons why Finland should not join the alliance, at least according to the politicians. One of the reasons that

was repeated was that the NATO soldiers cost more if they were taken as hostages. Since NATO had been enlarging, the battles were no longer fought on European territory. This seemed to make sense to everyone. No one wants to fight a war of others. This led into a situation where neither the public nor the politicians seemed not to support the membership.

So far everything seemed like a normal discussion around the topic. What the public was unaware of was that there was an ongoing nuclear threatening in the background. The discussion was quickly withdrawn, and the political discussion started to resolve around other things than foreign affairs. Somehow Russia seemed to have an edge. It was always few steps ahead. The reason was that the increasing digitalization created backdoors in equipment resulting in a situation where technical devices were used as tools for espionage. Finland was struggling with two big matters, the nuclear threatening and espionage. Finland did not receive any assistance in this situation. Even if Finland tried to apply for it, the Russian's were already aware of it. Meanwhile there was an issue in the Finnish military services. The young people's defense will was decreasing all the time. This led into a situation where recruits were hard to get and the number decreased year after year.

The Great Powers increased their power in the world politics, the United States and China especially. Finland was only a tiny piece of land that no one seemed to care about. It was left as an outcast.

5.5.4 Fox

the Finns Party has the majority in government. They have been well-known for their nationalist ideology and they believe that the real power of a nation is inside its borders. This was also agreed among the military personnel. The world had turned into post-truth politics where any statement can be only partly true. If the general public found out that it was not as it was stated, well then, the correction was made. This way it was easier to make things happen. Therefore, it was effortless to create a narrative against the NATO membership. This story was agreed by the general public quickly, even though corrections were made later on.

Over time Finland had been signing dyadic defense pacts between countries. Almost all NATO members had signed an agreement with Finland, however, Finland was not a full NATO member. It was training with the NATO forces intensively mostly in the Baltic

area. Finland was able to join the effect of deterrence even though not being under the NATO's article 5 protection. This was also a strategic choice for NATO, to keep Finland as close as possible, without intimidating Russia too much. Russia had been failing in its geopolitical operations.

There had been discussion on NATO's future. Even though NATO was making a clear statement increasing its presence in the Baltics and increasing the amounts of military exercises the internal conversation in NATO was in different tone. The members were arguing about the need to increase the burden sharing. Not all of the countries were not evenly committed to fulfil the military expenditure towards NATO. Also, the alliance was mandating countries to join in multiple peacekeeping operations. This also, increased the need for security consultation services among the member countries. Finland was able to bypass these debates and enjoy the deterrence as long as it lasted. If the NATO turned out to be obsolete and would finally collapse Finland would have a backdoor. The dyadic defense pacts would be in place even if the alliance ceased to exist.

5.6 Introducing the ethics evaluation model

As Piirainen, Gonzalez and Bragge (2012) argues that futures studies deal with big societal and strategic issues, therefore the validity and reliability of results are interesting to all parties. Evaluation is a process that can support the action through trust building (Piirainen et al 2012). For assessing the ethics of this thesis, a systematic evaluation framework for futures studies by Piirainen et al. will be used as the backbone. The framework introduces three levels that needs to be analysed.

Firstly, the utility and delivery of results. At this level it should be assessed whether the suitable methods are chosen to answer to the foresight needs (Piirainen et al 2012). Also, rigorous use of methodology, documentation and transparent use of data represent common sense to all research. Piirainen (2012) argues that foresight should be possible, logical and be internally consistent, systematic and appropriate with the timeframe set and the analysis. Supporting questions are, firstly, whether the trends and models that the foresight builds on are compatible with the timeframe. Secondly, do the foresights combine suitable trends and drivers? And thirdly, are the major stakeholders positioned in realistic places? Piirainen (2012) says that in scenario literature it is being said that sce-

narios should be detailed. Even if they are, they should still be comprehensible and manageable. Piirainen (2012) says that satisfaction and trust need to be considered. They are two different things; firstly, is the researcher satisfied with the result and does he/she trust the results?

The second, level is the technical execution. Piirainen (2012) argues that even though the study's model created might produce valid results, in another context and as an answer to another question without a proper assessment the user of the method cannot be sure about the validity. Data validation is globally essential and cautious evaluation of the data sources and critical examination of the data is necessary to discover possible biases. In addition, the life cycle of data should be considered since foresight tends to have a long-term perspective (Piirainen et al 2012).

Thirdly, one should consider the ethical dimensions of futures studies. Piirainen (2012) says that the goal for futures studies is to provide recommendations or opportunities for change - as this thesis does. Therefore, assessing the ethics in this dimension is also highly important. The sources of motivation, power, knowledge and legitimation should be assessed. Motivation is a part which should discuss about the client and purpose and measure of improvement. The power section should evaluate the decision makers, resources and the decision environment. Then the sources of knowledge part in this work should especially focus on the world view. Ethics consideration is found in the discussion part 7.2.

6 RESULTS AND IMPLICATIONS

6.1 Main findings

The first objective was to examine Finland and NATO's history in comparison. Also, to introduce Finland's history to understand the burden and to understand the NATO's history and why it matters. The introductory part 2.1 showed that NATO as a topic has been researched a lot and in section 4 the Finland's drift towards NATO and other phenomena around it were presented. The burden of the history is still guiding Finland's decision makers around the NATO decision. It is now understood what are, the pros and cons of membership are through different philosophical perspectives. It all seems to culminate into Russia.

The second objective was to find out whether Google Alerts' data can be employed as a data source for scenario planning and how to use quantitative and qualitative approaches to analyse the data. Certainly, it can be said that the Google Alert's data is rather a good source for scenario planning even though its reliability and validity require strict estimation during the analysis. The quantitative analysis would require additional programming steps to really allow for a wider understanding of the topic, perhaps by analysing the semantics or finding the clusters within the big data. The qualitative part of the analysis was time consuming and it is not recommended to do it as it was done in this research. The results of the analysis were accurate, but the process of it required too much of an effort.

Third objective was to form alternative outcomes in case Finland joins or does not join NATO and to answer the question *"If there is a referendum, how should I vote?"* The alternative outcomes were created in a normative manner so that the predetermined scenario axes were used during the scenario planning. All the scenarios are plausible and based on collected data. That was perhaps one deficiency of the scenarios that they were solely based on data. But that was due to the reason that the purpose was to find out whether Google Alerts can be a data source in scenario planning. Additional literature could have strengthened the reliability of the scenarios. And at last, *how should I vote?* Based on the written literature I would vote for the membership. The pros outnumber the cons. I base my decision on the written literature on section 2.1 and on the outcome of

the scenarios. I would be willing to take the risk of *friend or foe* to have the vision of *haven*.

6.2 Finding implications and presenting indicators

6.2.1 *Media literacy*

One of the core competences what were revealed in the scenarios was media literacy. Information warfare has increased in recent years and it has become inconspicuous. This requires skills nationwide to prevent and prepare for information warfare. Palsa (2019) argues that there is a need for media literacy especially when related to national threat images. These threats are related to disinformation, the opposition of democracy, hate speech, online sexual harassment and privacy violations. Now, and in the future, it is essential to identify true from false. Public discussions especially the ones held online are targeted by Russian trolls that can alter the discussion by creating false narratives (see Aro 2019; Jantunen 2015). It is a pleasure to see in Palsa's report for the Ministry of Education that media literacy has been taken seriously. The weakest link in here is the fact that the education system does not guarantee education for all ages. The elderly have been identified as one target group, but it is not so easy to gather them into one place and then to educate them. This works well for the students under compulsory education.

6.2.2 *Referendum*

Even though the images of the future were not taking into consideration whether a referendum took place or not, it would be extremely essential to present the pros and cons of it transparently. Of course, this kind of public discussion is prone to information affection. During this master's thesis there have been no signs of information affection. A positive aspect of a referendum would be open and transparent decision making. Citizen's feel like they have the power to decide. This creates trust in democracy. On the other hand it can shake it as the world has observed has happened with Brexit. As Riiheläinen (2017) said there should not be a referendum if the decision would be against it. The point in

here is that the NATO door would be closed for ever, or at least until there would be a new referendum was held in the upcoming decades. Also, the referendum would be a valuable target for Russian information warfare.

6.2.3 *The public's opinion on NATO*

As has been noted, NATO membership can be achieved only if most of the citizens are in favor of the membership. But it is important to notice that NATO does not require a referendum (Riiheläinen 2017, 116). Rahkonen (2007) has studied the public opinion, journalism and the question of Finland's membership in NATO. He argues that since the early 1990's there has been a public debate about whether Finland should join NATO. The support for NATO membership has been in between 16-34 percent, where opposition has remained in between 58 to 79 per cent (Rahkonen, 2007, 82). The research indicates that there is no correlation between media coverage and public opinion. Pro-NATO media content has not been able to change people's minds more towards NATO (ibid 81). It should be kept in mind that if there is no public support to NATO, then it is not in the agenda of politicians either (ibid 82). The paper suggest that the foreign policy issues are too complex for ordinary citizens (ibid 83).

In this part we should consider the implications. It was an important fact that Rahkonen indicated that Pro-NATO media content did not seem to have an affect on public opinion on NATO. Recognizing this means that we should find other means to alter people's views in a desirable direction. In the other hand it is necessary to state the fact that the study is already 13-years old, and that there were no social media or mainstream online based communication in existence at the time. We have already seen from Brexit that the digital world can be used to alter referendum voter's perspectives. The public opinion is one of the most essential indicators to follow. If the pro-NATO voice gets higher it is easier for the supporting politicians to include the topic on their political agenda.

6.2.4 *Plausible shocks*

Minkkinen, Ahokas and Auffermann (2018) indicated that in security related forecasting possible shocks are not considered enough. There will be no shock-based scenarios discussed in this study, but in this part the possible shocking effects that might cause the future to turn around are considered.

The first possible shock that has been discussed as a possible weak signal is the discussion on NATO's obsolescence. Although this was only a tweet that President Donald Trump posted, it has deeper roots too. The European Union has discussed the possibility of a European army. This could be a collateral path in case of NATO's collapse. Whether Finland was a member or not, it would have a long-lasting impact on global security which might accelerate Russian geopolitics.

The second, shock could be NATO's endless enlargement. The result might be the same as in the previous case but the path towards it deviates. In one of the articles (id 67) there was a debate about NATO's enlargement to Arab countries. Global consensus would be hard to receive and it would be difficult to merge the different cultural backgrounds. What would it mean for the reliability of the alliance if the threat towards it was internal? An important fact to note is that Russia, which has been discussed a lot in this study, is part of NATO's 'Partnership for Peace' – program. What if the country would stop its geopolitical operations for a while and decided to join NATO?

7 DISCUSSION

7.1 Theoretical contribution

As stated in the introductory section there has not been much research on possible outcomes of Finland's NATO membership, or at least not from a futures perspective and in a holistic view, and especially none exploiting big data. Researchers argue about the pre-determined factors, such as changes in law or burden sharing when defining possible futures states. This master's thesis is among the first to incorporate this phenomena. Scenario planning originates from the military and this study goes back to those roots equipped with a new research method.

Google Alerts has been used in marketing research, but I have not found any public research done on the anticipation of defense policy with it. This study has shown that it is possible to use open data sources to create scenarios. The quality of the data has been investigated repeatedly in several sections, but in the end, it seems that the data can be used for research purposes at least in futures studies where the goal is to find trends and trend breaks.

7.2 Ethical assessment of the study

Here an ethics evaluation model presented in section 5.6 is being discussed. The full framework model is insufficient for this level of research. Sections of the systematic evaluation framework for futures studies are taken to be analysed. To be precise the full model was not presented in section 5.6.

On the first level (utility and delivery of results) we should assess whether the research methods in place are suitable to answer the research question at hand. The goal was to create normative scenarios regarding Finland joining or not joining NATO. Big data were exploited in achieving this. The technical methods of qualitative data-based content analysis and clustering and quantitative analysis with Python were chosen. Researcher's subjective view can quickly alter the result of content analysis to be a subjective feeling. Also, the validity of the coding should be tested. In this research the test was not conducted. There is also a minor possibility that the coding includes typing errors or other

unintended mistakes since it was done by a human. To mitigate this risk, a dropdown list was created where only a certain factor could be chosen and there was no room for typing errors. For computer aided quantitative analysis a word cloud with Python was created. There could have been further steps to analyse the data, for example lemmatizing the words or at least forming them into a singular form. These methods were left out due to the fact of researcher's insufficient coding skills. The data itself was analysed as a bag-of-words which meant that it deviated each word from the original sentence. This is how it was possible to find out the most frequent words. Since the words were not in singular, it can be seen in the results of the word cloud that there were a word that can be found in in plural or singular form, as will be explained in the later discussion part, these parts are recommended for consideration. For futures studies methods, environmental scanning and scenarios have been the core methods for creating the normative scenarios. The conducting of these methods has been done with the guideline of Schwartz's scenarios planning model with some exceptions. Also, the limitations regarding the scenarios should be considered on the first level. The scenarios were formed based on data, even though it is not presented transparently from which articles the factors are found in the futures table. The outcome of the scenarios presents plausible futures images. The scenarios are solely based on data not on literature. As explained in previous sections section the supporting questions assessing this evaluation section were: Are the trends and model that foresight builds on compatible with the set timeframe? Do the foresights combine suitable trends and drivers? And third, are the major stakeholders positioned in realistic places? The key trends were certainly found out during the one-year data collection period, but as mentioned the scenarios were lacking information from the literature and more deeper understanding of the topic, even though there might be a few quick literature citations. The scenarios and trends support the time frame that was set. On the futures table the connections of trends are presented. The futures table could have been better if it would have been strengthened with knowledge from literature. On the other hand, the idea was to find out whether we can build scenarios based on big data, therefore this additional part is justifiably left out. The big question in here is whether the people are committed to the results? If there will be referendum on whether Finland should join NATO, are the results of this study considered? Are the politicians going to rely on these results? Could other researcher's exploit the research methods or procedures used here? It can be naïve to think that the results of this would be considered by the decision makers. What this will most likely achieve is the start in a discussion around data-driven scenarios in security policy.

The second level for ethics assessment is the technical level. The cornerstone of this study was to rely on Google Alerts' data. The reliability and validity of this data was assessed continuously during the research process. The big filtering was done when choosing the articles from the Alert messages. Also, in the analysis section there is a part which indicates that only the material that could be beneficial to the research purposes were chosen. The data was then divided into two categories, English and Finnish articles. The English articles were not given a thorough look, since they were quantitatively analysed. All the Finnish articles were read, but only the filtered articles were analysed and were given a thorough look. The data sources that Google Alert provides are mostly alternative magazines, blogs and websites. This needs to be considered when assessing the reliability and validity of the data. A wide filtering is suggested for future research. The second part to be given an ethical perspective is the research methods, especially the ones analysing the data. At first, the quantitative analysis was done with Python. As has been said it requires additional coding skills to improve the analysis, but the result works. It gives one rudimentary idea of what the English articles are talking about. Technically considering the code's functionality is known (found in the appendix 4). The content analysis was done with Excel and Power Bi and the data handling was easy and sufficient. However, the problem, is the researcher's subjective view in the data coding section.

The third level was the ethical dimensions of futures studies. Futures studies proposes opportunities and drives for changes. The scenarios presented are plausible, but not the only possible outcomes on this complex matter. It is highlighted multiple times that the scenarios are solely based on the data that was collected. Even though the results seems comprehensive there still is space for additional knowledge, especially from historical data and literature. The time perspective is another factor to consider here. The data was collected during a one-year period in 2018-2019. The situation in politics can change quickly and therefore the data should be analysed as soon as possible. In the discussion part of this thesis it is argued that the research process could be automated almost completely.

7.3 Assessing the limitations of the study

It can be estimated as an asset or as a limitation that I did not have a good prior knowledge of NATO. This might end up into a situation where a holistic view has not been completely understood. It required a lot of background study and research, but still it would be erroneous to claim that I would have a complete view on the topic. On the other hand I did not have any background baggage to carry and not any personal views on whether NATO is good or bad. This could have resulted in more value-free scenarios. Van Der Heijden supports this statement by arguing that value-free scenarios can help researcher see things that were not looked for (Van Der Heijden 2005, 5-6).

Even though, the data collection was automated, the data processing took time. 1-15 articles under one email behind several links. This led into a situation where all the links are were opened and the information behind them were copied and pasted into Excel. For future research I would recommend finding out how to automate the process. It would be possible to program a software to scan the material and import it into a certain database. This would decrease the time of data collecting and processing and freeing more time on the research itself.

Regarding a qualitative approach it is crucial to note that it is not a sustainable research method, at least not with excel. There are content analysis software's like ATLAS.ti that could work better for this. Learning how to code and the coding itself and the time-consuming analysis is not recommended on a master's thesis level.

The quantitative approach done with Python was something completely new. The result of it did not bring too much of an extra value to the scenarios, but it helped to find some of the key weak signals. It took a couple of days to figure out how to code the word cloud and some faults were left inside it, since it would have required additional intermediate level coding. An additional recommendation would have been to create lemmatization which modifies the words into a basic form. Now the words were being changed into lower case, but in addition they could have been transformed into singular forms. This would have created a better-quality word cloud. If my coding skills were stronger the use of big data would have been better. It could have been possible from the word cloud to pinpoint the most frequent words and use them to create clusters in order to find out, for example, how many articles deal with people's views on NATO or the politics or future of it.

7.4 Proposal for future research

In addition to the future recommendations already mentioned I would suggest that the research process has proven that there is a need for ongoing environmental scanning around the topic of NATO, especially in Finland. If it were possible, as explained above, to create an automated process to analyse the results this could provide additional information to the decision makers. For future research it would be beneficial to embed future studies and its methods in the core of security policy research.

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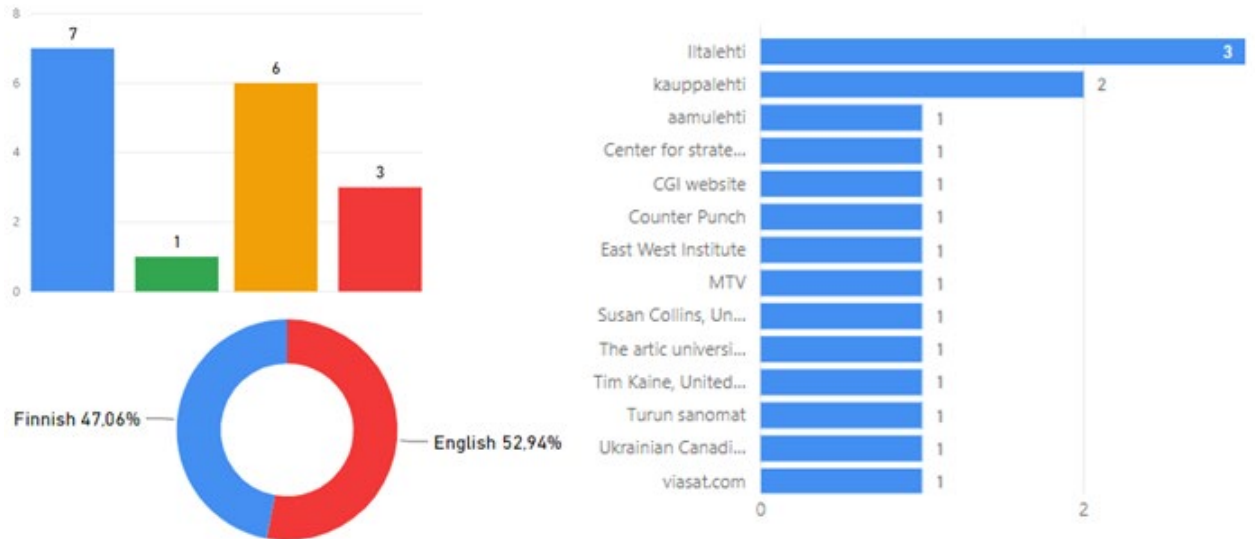
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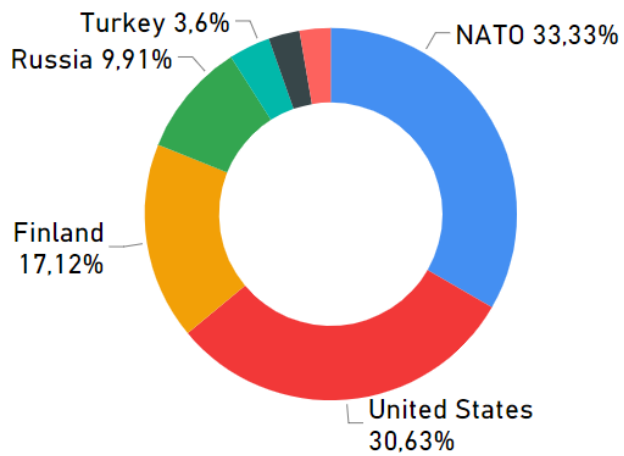
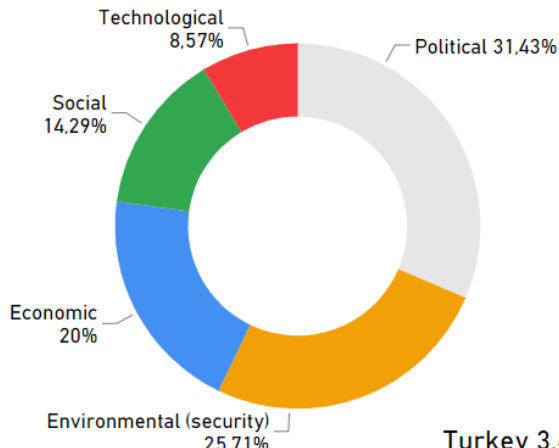
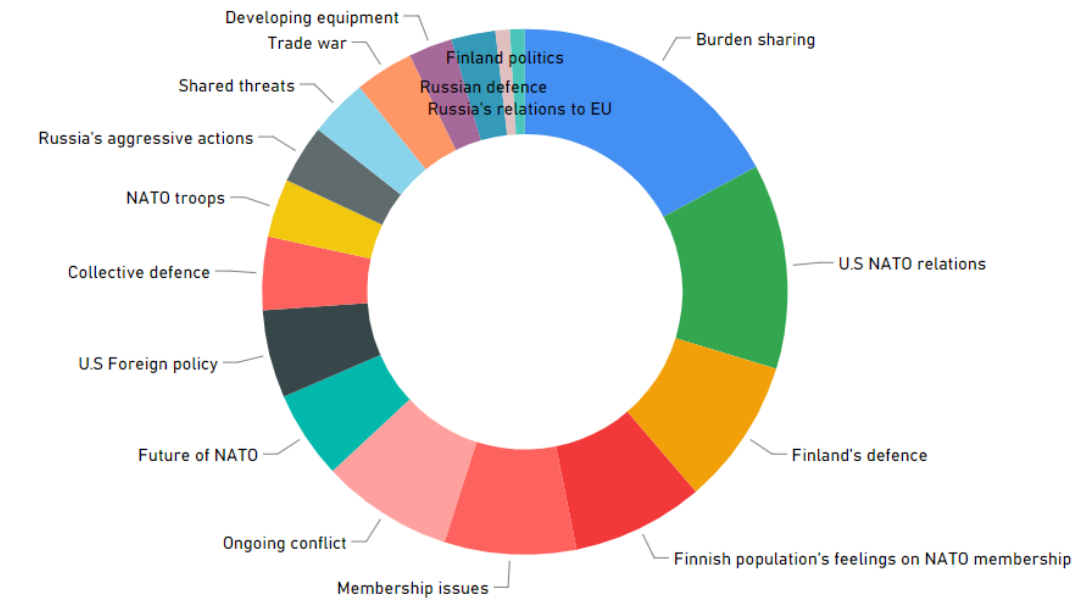
9 APPENDICES

APPENDIX 1 – Pre-analysis visualizations

first visualization presents how the material was divided between weeks, most frequent sources and how the languages are divided with in the articles.

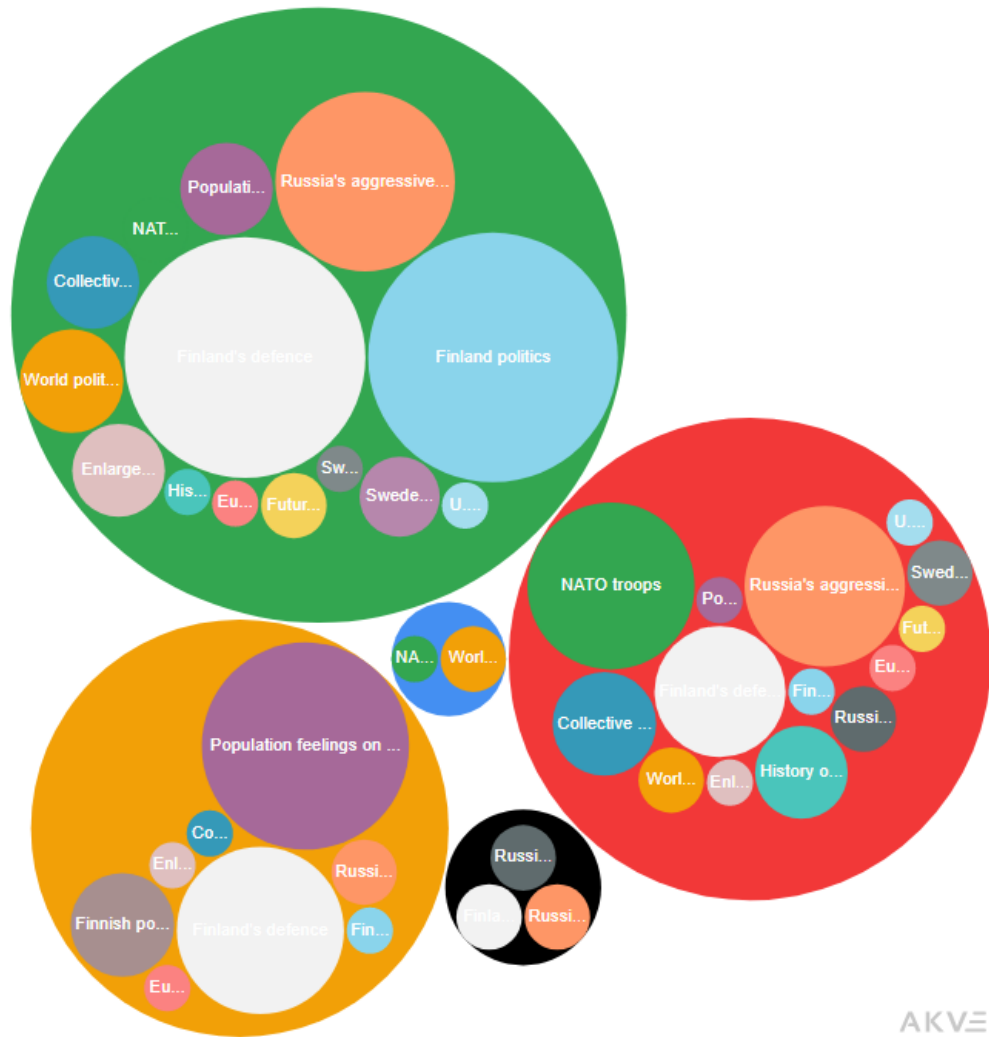


Next visualization is a collection of circle diagrams based on the three categories.



Third visualization presents what categories there were under the PESTE clusters.

Peste ● Economic ● Environmental (security) ● Political ● Social ● Technological



APPENDIX 2 – Python code used for word cloud

```

1. import numpy as np
2. import pandas as pd
3. from os import path
4. from PIL import Image
5. from wordcloud import WordCloud, STOPWORDS, ImageColorGenerator
6.
7. import matplotlib.pyplot as plt
8. %matplotlib inline
9.
10. NATO = pd.read_excel('//filelocation.xlsx')
11.
12. NATO.head()
13.
14. NATO['Text']
15.
16. ?WordCloud
17.
18. str(NATO.Text.values)
19.
20. # Start with one review:
21. text = str(NATO.Text.values)
22.
23. # Create and generate a word cloud image:
24. wordcloud = WordCloud().generate(text)
25.
26. #size
27. wordcloud = WordCloud(width=1200, height=800).generate(text)
28.
29. # Display the generated image:
30. plt.imshow(wordcloud, interpolation='bilinear')
31. plt.axis("off")
32. plt.show()
33.
34. # lower max_font_size, change the maximum number of word and lighten the back-
    ground:
35. wordcloud = WordCloud(width=1200, height=800,max_font_size=50, max_words=1000,
    background_color="white").generate(text)
36. plt.figure()
37. plt.imshow(wordcloud, interpolation="bilinear")
38. plt.axis("off")
39. plt.show()
40.
41. # Create stopword list:
42. stopwords = set(STOPWORDS)
43. stopwords.update(["said", "de", "Wijk", "i", "me", "my", "my-
    self", "we", "our", "ours", "ourselves", "you", "your", "yours", "your-
    self", "yourselves", "he", "him", "his", "him-
    self", "she", "her", "hers", "herself", "it", "its", "it-
    self", "they", "them", "their", "theirs", "them-
    selves", "what", "which", "who", "whom", "this", "that", "these", "those", "am",
    "is", "are", "was", "were", "be", "been", "be-
    ing", "have", "has", "had", "having", "do", "does", "did", "do-
    ing", "a", "an", "the", "and", "but", "if", "or", "because", "as", "un-
    til", "while", "of", "at", "by", "for", "with", "about", "against", "be-
    tween", "into", "through", "during", "before", "after", "above", "be-
    low", "to", "from", "up", "down", "in", "out", "on", "off", "over", "un-
    der", "again", "fur-
    ther", "then", "once", "here", "there", "when", "where", "why", "how", "all",
    "any", "both", "each", "few", "more", "most", "other", "some", "such", "no", "n",
    "nor", "not", "only", "own", "same", "so", "than", "too", "very", "s", "t", "ca",
    "n", "will", "just", "don", "should", "now", ""])
44.
45. # Generate a word cloud image

```

```

46. wordcloud = WordCloud(stopwords=stopwords, back-
    ground_color='white', width=1200, height=800, max_font_size=300, max_words=100
    0).generate(text)
47.
48.
49. # Display the generated image:
50. # the matplotlib way:
51. plt.imshow(wordcloud, interpolation='bilinear')
52. plt.axis("off")
53. plt.show()
54.
55. # Create stopword list:
56. stopwords = set(STOPWORDS)
57. stopwords.update(["NATO", "nthe", "de", "Wijk", "i", "me", "my", "my-
    self", "we", "our", "ours", "ourselves", "you", "your", "yours", "your-
    self", "yourselves", "he", "him", "his", "him-
    self", "she", "her", "hers", "herself", "it", "its", "it-
    self", "they", "them", "their", "theirs", "them-
    selves", "what", "which", "who", "whom", "this", "that", "these", "those", "am
    ", "is", "are", "was", "were", "be", "been", "be-
    ing", "have", "has", "had", "having", "do", "does", "did", "do-
    ing", "a", "an", "the", "and", "but", "if", "or", "because", "as", "un-
    til", "while", "of", "at", "by", "for", "with", "about", "against", "be-
    tween", "into", "through", "during", "before", "after", "above", "be-
    low", "to", "from", "up", "down", "in", "out", "on", "off", "over", "un-
    der", "again", "fur-
    ther", "then", "once", "here", "there", "when", "where", "why", "how", "all",
    "any", "both", "each", "few", "more", "most", "other", "some", "such", "no", "
    nor", "not", "only", "own", "same", "so", "than", "too", "very", "s", "t", "ca
    n", "will", "just", "don", "should", "now", ""])
58.
59. # Generate a word cloud image
60. wordcloud = WordCloud(stopwords=stopwords, back-
    ground_color='white', width=1920, height=1080, max_font_size=300, max_words=10
    00).generate(text)
61.
62.
63. # Display the generated image:
64. # the matplotlib way:
65. plt.imshow(wordcloud, interpolation='bilinear')
66. plt.axis("off")
67. plt.show()
68.
69. # Save the image in the img folder:
70. wordcloud.to_file('//savedlocation/photname.png')

```



APPENDIX 3– All research material

id	Paper	Published	Received alert	Writer	Header	Text	Kieli	Linkki
1	Iltalehti	25.7.2018	1.8.2018	Pekka Numminen	Venäjä uhkaa S	Venäjän p	Suomi	https://w
2	MTV	26.7.2018	1.8.2018		Menikö Trump	Italian ulk	Suomi	https://w
3	Turun sanomat	26.7.2018	1.8.2018	Viki Salonen	Puolustusmini	Suomen p	Suomi	https://w
4	Tim Kaine, United State	26.7.2018	1.8.2018		Kaine, Gardner	WASHING	Englanti	https://w
5	East West Institute	25.7.2018	1.8.2018	Charles Elkins	Despite Rhetor	On the sur	Englanti	https://w
6	Center for strategic stud	25.7.2018	1.8.2018	Anthony H. Cordesmar	NATO and the	Not witho	Englanti	https://w
7	The artic university of Norway		1.8.2018	Benjamin Schaller	Missing the Po	The 2018 f	Englanti	https://er
8	Ukrainian Canadian Cor	1.8.2018	8.8.2018		NATO Summit	NATO Sum	Englanti	https://w
9	Iltalehti	12.08.2018	22.8.2018	Joonas Alanne	Lännen Media:	Lännen M	Suomi	https://w
10	aamulehi	12.8.2018	22.8.2018	Hannamari Ahonen	35 prosenttia s	Naton kar	Suomi	https://w
11	kauppalehti	11.8.2018	22.8.2018	Katja Incoronato	Asiantuntijat v	Yhdysvalt	Suomi	https://w
12	kauppalehti	12.8.2018	22.8.2018	Katja Incoronato	Erdoganilta ko	Turkin pre	Suomi	https://w
13	viasat.com		22.8.2018		Viasat's VISION	CARLSBAC	Englanti	https://w
14	Susan Collins, United St	6.8.2018	22.8.2018		Senator Collins	Washingt	Englanti	https://w
15	Iltalehti	25.8.2018	29.8.2018	Juha Keskinen	Presidentti Nii	President	Suomi	https://w
16	Counter Punch	17.8.2018	29.8.2018	Daniel Falcone	The Future of M	At least D	Englanti	https://w
17	CGI website	20.8.2018	29.8.2018		CGI to implem	SECURE DI	Englanti	https://w
18	Center of Public Diplom	30.8.2018	5.9.2018	Sven Lilienström	INTERVIEW WI	NATO is th	Englanti	https://w
19	Royal Airforce	29.8.2018	5.9.2018		CHIEF OF THE A	The Chief	Englanti	https://w
20	aamulehi	5.9.2018	12.9.2018	Reeta Paakkinen	Oman tyttären	80 vuotta	Suomi	https://w
21	aamulehti	5.9.2018	12.9.2018	Anita Simola	Kenraali Häggl	Hägglund	Suomi	https://w
22	kauppalehti	1.9.2018	12.9.2018	Anu-Elina Lehti	Nato Defense	Puolustus	Suomi	https://w
23	Turun sanomat	5.9.2018	12.9.2018		Aurajoessa nä	Naton laiv	Suomi	https://w
24	Stiftung Wissenschaft u	4.9.2018	12.9.2018	Johannes Thimm	NATO: US Strat	The asym	Englanti	https://w
25	Harvard Kennedy Schoo	5.9.2018	12.9.2018	Nicholas Burns	Assessing the	Testimony	Englanti	https://w
26	Iltalehti	11.9.2018	19.9.2018	Antero Eerola	Ruotsin Nato-c	Kun Ruots	Suomi	https://bl
27	istituto affari internaz	11.9.2018	19.9.2018	Lucrezia Sapienza	Russia and the	Russias gr	Englanti	https://w
28	Ministry of Defence & A	7.9.2018	19.9.2018	horgils Jonsson,	NATO battle gr	The Czech	Englanti	http://ww
29	U.S embassy & Consula	12.9.2018	19.9.2018	Christina Shoptaw	Transfer of Aut	BEMOWO	Englanti	https://pl
30	forsvaret	19.9.2018	26.9.2018	ANDERS FJELLESTAD	NATO's Secret	Secretary	Englanti	https://fo
31	Expertsystem.com	19.9.2018	26.9.2018		NATO Informa	The annu	Englanti	https://w
32	First Channel	21.9.2018	26.9.2018		Rose Eilene Gc	NATO has	Englanti	https://1t
33	9/11 Memorial museum	28.9.2018	3.10.2018	9/11 Memorial Staff	NATO Secretar	NATO Sec	Englanti	https://w
34	Blogs.cisco.com	28.9.2018	3.10.2018	James McNab	Cisco Security	NATOs mi	Englanti	https://bl
35	Belfer Center	25.9.2018	3.10.2018	Nicholas Burns	Former NATO	Ambassac	Englanti	https://w
36	Uusi Suomi	5.10.2018	17.10.2018	Jussi Niinistö	Pelote ja puol	Naton pur	Suomi	http://jus
37	Valtioneuvoston selvity	5.10.2018	17.10.2018		Ydinasepolitiik	Puolustus	Suomi	https://tie
38	Ulkopoliittinen instituu	5.10.2018	17.10.2018	Robert Bell	The Challenge:	Puolustus	Suomi	https://w
39	Central for a New American Security		17.10.2018		NATO and Eurc	The securi	Englanti	https://w
40	Center for Security Poli	4.10.2018	17.10.2018		Center urges N	Laying out	Englanti	https://w
41	Campaing for Nuclear D	4.10.2018	17.10.2018		NATO announc	NATO is al	Englanti	https://cn
42	European Union Extern:	4.10.2018	17.10.2018		Remarks by HR	Check aga	Englanti	https://ee
43	E-estonia.com	1.10.2018	24.10.2018	Federico Plantera	NATO CCDCOE	Changes a	Englanti	https://e-
44	Atos.net	17.10.2018	24.10.2018		Atos signs cybe	Both parti	Englanti	https://at
45	Wilson Center	12.10.2018	24.10.2018	Leopoldo Nuti, Lodovic	The Giulio And	A joint Wi	Englanti	https://w
46	International Institute f	15.10.2018	24.10.2018	Douglas Barrie	NATO ponders	The INF Tr	Englanti	https://w
47	America's Navy	12.10.2018	24.10.2018	Thomas Gooley	NATO Maritim	NORTH SE	Englanti	https://w
48	Uusi Suomi	27.10.2018	31.10.2018	Ari Pesonen	Trident Junctur	Venäjä ar	Suomi	http://ari
49	Turun sanomat	26.10.2018	31.10.2018	Petteri Lindholm	"Venäjällä ei o	Naton yht	Suomi	https://w
50	Puolustusvoimat	26.10.2018	31.10.2018		NATO:n yhteis	FI SV ENN	Suomi	https://pu

51	America's Navy	25.10.2018	31.10.2018	Thomas Gooley	USS Harry S. Tr	VESTFJORD	Englanti	https://w
52	The German Marshall Fu	23.10.2018	31.10.2018	Ian Lesser	Perhaps Some	The new C	Englanti	http://ww
53	forsvaret	27.10.2018	31.10.2018		When NATO ca	Hugs ham	Englanti	https://fo
54	Royal Navy, Uk	24.10.2018	31.10.2018	RUNE HAARSTAD	ROYAL NAVY LI	Striking ov	Englanti	https://w
55	Pressreader		31.10.2018		Nato holds hug	Norwegia	Englanti	https://w
56	Government of Canada	25.10.2018	31.10.2018		Canadian troop	A Canadia	Englanti	https://w
57	The Federalist Society	1.11.2018	31.10.2018	Daniel West	Has NATO Exp	As NATO I	Englanti	https://fe
58	Uusi Suomi	3.11.2018	7.11.2018	Ari Pesonen	Venäjän ydina:	"Until 7 No	Suomi	http://ari
59	Turun sanomat	31.10.2018	7.11.2018		Nato-harjoituk	Suomi ja F	Suomi	https://w
60	National Cyber Security Center		7.11.2018		NUKIB HOSTED	On Octobe	Englanti	https://w
61	Centre for European Re	31.10.2018	7.11.2018	Sophia Besch	PROTECTING E	With the c	Englanti	https://w
62	IIEA	30.10.2018	7.11.2018		PRESIDENT TRU	The electi	Englanti	https://w
63	The Hague Centre for St	31.10.2018	7.11.2018	Michel Roelen	HCSS Snapshot	Since the	Englanti	https://hc
64	Warsaw Security Forum		14.11.2018		BREAKOUT SES	The break	Englanti	https://w
65	NATO presentation material		14.11.2018		NATO use of C	NATO use	Englanti	https://w
66	Yahoo! Finance		14.11.2018		Russia blocked	Oslo on Tu	Englanti	https://sg
67	Middle East Institute	13.11.2018	14.11.2018	Giorgio Cafiero, Cinzia	"Arab Shield 1"	As naval a	Englanti	https://w
68	Turun sanomat	15.11.2018	21.11.2018	Joonas Kuikka	Nato-Pohjoism	Luken len	Suomi	https://w
69	Defence Security Coope	19.11.2018	21.11.2018		NATO Support	NATO Sup	Englanti	https://w
70	Egmont	20.11.2018	21.11.2018	Sven Biscop	EU-NATO relat	EUNATO r	Englanti	http://ww
71	Parliament of Georgia		21.11.2018		Irakli Kobakhid	We closel	Englanti	http://par
72	Nato Energy Security - C	16.11.2018	21.11.2018		IESMA 2018 cor	IESMA 201	Englanti	https://w
73	RealClearDefence	16.11.2018	21.11.2018	Brooks Tigner	Russian GPS Ja	Russian G	Englanti	https://w
74	Maavoimat	21.11.2018	28.11.2018		Porin prikaatin	Porin prik	Suomi	https://m
75	Uusi Suomi	28.11.2018	5.12.2018	Jukka Hankamäki	Euroopan epäv	Eurooppa	Suomi	http://har
76	Kansanuutiset	28.11.2018	5.12.2018		Nato-jäsenyyd	Sotilasliit	Suomi	https://w
77	kauppalehti	27.11.2018	5.12.2018	Tapio Nurminen	Saksa ja Ransk	EU:n maht	Suomi	https://w
78	Health.mil News	27.11.2018	5.12.2018	Sharon Holland	Uniformed Ser	RUSSELS B	Englanti	https://w
79	IE - School of global & P	23.11.2018	5.12.2018	Giovanna Z. Rinaldo	Transatlantic R	Students v	Englanti	https://w
80	RKK ICDS		5.12.2018	Heinrich Brauss	NATO Beyond	On 1112 Ju	Englanti	https://icc
81	Centre for European Re	21.11.2018	5.12.2018	Sophia Besch	NATO'S CYBER	NATOs pri	Englanti	https://w
82	International campaign	6.12.2018	12.12.2018		Could Spain be	n Septeml	Englanti	http://ww
83	The German Marshall Fu	7.12.2018	12.12.2018	Ben Hodges	Why the Unite	If a conflic	Englanti	http://ww
84	Republic of Estonia - Mi	5.12.2018	12.12.2018	Inga Bowden	Foreign Minist	Today's me	Englanti	https://vn
85	U.S embassy in Estonia	4.12.2018	12.12.2018	Michael R. Pompeo	Press Availabil	SECRETAR	Englanti	https://ee
86	National Security Archiv	11.12.2018	19.12.2018	William Burr	NATO's Origine	Secretary	Englanti	https://ns
87	National Energy Securit	11.12.2018	19.12.2018		Energy Securit	The Turkis	Englanti	https://w
88	Ministry of Foreign Affairs of Georg		19.12.2018		The statement	12122018	Englanti	http://mf
89	The German Marshall Fu	13.12.2018	19.12.2018	Sophie Arts	Offense as the	Against th	Englanti	http://ww
90	Clingendael	18.12.2018	26.12.2018	Dick Zandee	THE FUTURE OF	This repor	Englanti	https://w
91	Massachusetts Institute of Technolc		26.12.2018		Starr Forum: N	As EU cou	Englanti	https://ca
92	U.S Army Reserve	21.12.2018	2.1.2019	Doug Magill	Joint Cooperat	NIENBURC	Englanti	https://w
93	Ministry of Defence of U	28.12.2018	2.1.2019		Stepan Poltora	Minister c	Englanti	http://ww
94	Tivi	3.1.2019	9.1.2019	Suvi Korhonen	Venäjä urkkii n	Belgian pu	Suomi	https://w
95	Ministry of Foreign Affa	4.12.2018	9.1.2019	TYMON MARKOWSKI	Minister Jacek	"Our expe	Englanti	https://m
96	kauppalehti	19.1.2019	23.1.2019	Olli Ainola	Alma-kysely: P	Alma Mec	Suomi	https://w
97	mtv uutiset		23.1.2019		Kysely: Jos pre	President	Suomi	https://w
98	Uusi Suomi	21.1.2019	23.1.2019	Marko Kettunen	Neljä Nato-ske	Euroopan	Suomi	http://ma
99	Eurocontrol	18.1.2019	23.1.2019		Jens Stoltenbe	"I was del	Englanti	https://w
100	Tim Kaine, United State	17.1.2019	23.1.2019		Kaine, Colleg	WASHING	Englanti	https://w

101	Hoover Institution	17.1.2019	23.1.2019	Robert G. Kaufman	Urging More Fr	The Unite	Englanti	https://w
102	Congressman Jimmy Pa	22.1.2019	30.1.2019		CONGRESSMAI	WASHING	Englanti	https://pa
103	RealClearDefence	22.1.2019	30.1.2019	Stephen Blank	Message to NA	In Februar	Englanti	https://w
104	Ministry of foreign affa	29.1.2019	6.2.2019	Predsednictvo Slovencs	Miroslav Lajčák	Today 29 J	Englanti	https://w
105	forsvaret	24.1.2019	6.2.2019	Hanne Olafsen	The High North	The globa	Englanti	https://fo
106	Pressreader	30.1.2019	6.2.2019	SHAFI MUSADDIQUE	Nato fights for	Nato is th	Englanti	https://w
107	IISS	31.1.2019	6.2.2019	Bastian Giegerich	NATO and the	This new s	Englanti	https://w
108	Nato Energy Security - C	25.1.2019	6.2.2019		NATO ENSEC C	On 2425th	Englanti	https://er
109	Defence Aerospace	31.1.2019	6.2.2019		Allies Receive	Denmark	Englanti	http://ww
110	EU Advisory Mission in	1.2.2019	6.2.2019		EUAM attends	Reflecting	Englanti	https://ee
111	Maroc.ma	22.1.2019	6.2.2019		Morocco Plays	orocco pla	Englanti	http://ww
112	Carnegie - Moscow Cen	8.2.2019	13.2.2019	Maxim Samorukov	Macedonia Joi	In the Mac	Englanti	https://ca
113	America's Navy	11.2.2019	13.2.2019		NATO Trains to	OOSTEND	Englanti	https://w
114	Center for a New Ameri	8.2.2019	13.2.2019	Jim Townsend and Han	German F-35 d	While the	Englanti	https://w
115	Tivi	15.2.2019	20.2.2019	Ari Karkimo	"Ette ota uhka	USA on jo	Suomi	https://w
116	Harvard Kennedy Schoc	14.2.2019	20.2.2019	Nicholas Burns & Doug	New Report Fo	Cambridg	Englanti	https://w
117	eeas	19.2.2019	20.2.2019	Maja KOCIJANCIC	Speech by HR/	First of all	Englanti	https://ee
118	Economie	22.2.2019	20.2.2019		NATO BENELU	This year	Englanti	https://ec
119	Universiteit Leiden	14.2.2019	20.2.2019		NATO working	Twenty st	Englanti	https://w
120	Campaing for Nuclear D	18.2.2019	20.2.2019		Chomsky on w	Protest Ne	Englanti	https://cn
121	Nato Parliamentary ass	15.2.2019	20.2.2019		NATO adaptati	Brussels 1	Englanti	https://w
122	CREECACenter for Russi	14.2.2019	20.2.2019		NATO INTERNA	Applicatio	Englanti	https://cr
123	Joint Chief of Staff		20.2.2019	Jim Garamone	Shanahan: NAT	WASHING	Englanti	https://w
124	Farnesina	21.2.2019	27.2.2019		NATO: Ambass	The main	Englanti	https://w
125	U.S department of defe	21.2.2019	27.2.2019	Jim Garamone	NATO Admiral	WASHING	Englanti	https://dc
126	Parliament of Georgia	20.2.2019	27.2.2019		The sitting of t	The Parlia	Englanti	http://ww
127	Pressreader	25.2.2019	27.2.2019		Nato troops gi	Nato troo	Englanti	https://w
128	Nato Parliamentary ass	18.2.2019	27.2.2019		2018 Annual Pr	19 Februa	Englanti	https://w
129	Ittalahti	1.3.2019	6.3.2019	Antero Eerola	Nato-optio poi	Ennen var	Suomi	https://bl
130	FIUC		6.3.2019		Joint Project b	The overa	Englanti	http://ww
131	The German Marshall Fo	7.3.2019	6.3.2019		To NATO and B	Washingto	Englanti	http://ww
132	U.S department of defe	28.2.2019	6.3.2019		NATO Secretar	WASHING	Englanti	https://dc
133	Joint Chief of Staff		13.3.2019	Jim Garamone	NATO Continu	WASHING	Englanti	https://w
134	czech.cz		13.3.2019		Czech leaders	At Prague	Englanti	http://ww
135	The German Marshall Fo	12.3.2019	13.3.2019		NATO Secretar	The missio	Englanti	http://ww
136	Nato Parliamentary ass	12.3.2019	13.3.2019		NATO parliame	Brussels /	Englanti	https://w
137	Nancy Pelosi Speaker o	11.3.2019	13.3.2019		Pelosi Invites	Washingto	Englanti	https://w
138	NACS	6.3.2019	13.3.2019		NATO Clarifies	FDA says t	Englanti	https://w
139	Hertie School of Governance		13.3.2019		Non-strategic	Funded by	Englanti	https://w
140	Eventbrite.com		13.3.2019		Poland, the US	Descriptio	Englanti	https://w
141	ArticToday	19.3.2019	20.3.2019	Nerijus Adomaitis	Norway says it	OSLO — N	Englanti	https://w
142	CSBA	13.3.2019	20.3.2019	Billy Fabian , Mark Gun	Strengthening	A resurget	Englanti	https://cs
143	U.S department of defe	15.3.2019	20.3.2019		NATO Chairma	WASHING	Englanti	https://dc
144	Geopolitical Futures	14.3.2019	20.3.2019		Daily Memo: IN	U.S. missil	Englanti	https://ge
145	Swedish Armed Airfoces		20.3.2019	Harry Jaantola	COPC 2019NAT	Dear Stud	Englanti	https://w
146	Chez Public		20.3.2019		20 years of Cze	Czechs are	Englanti	http://ww
147	America's Navy	13.3.2019	20.3.2019	Michael Chen	NATO Military	NORFOLK,	Englanti	https://w
148	Capitalist Exploits	26.3.2019	27.3.2019		The End Of NA	Conflict is	Englanti	https://ca
149	Ai SharQ Blogs	22.3.2019	27.3.2019	Harun Karcic	Why Bosniak N	Freezing c	Englanti	https://re

150	The american spectator	22.3.2019	27.3.2019	Brandon J. Weichert	Brazil Does No	During the	Englanti	https://sp
151	Capitalist Exploits	21.3.2019	27.3.2019		The End Of NA	After the I	Englanti	https://ca
152	Campaing for Nuclear D	20.3.2019	27.3.2019	Kate Hudson	NATO – 70 year	As we hea	Englanti	https://cn
153	James Madison Univers	22.3.2019	27.3.2019	Eric Gorton	NATO invites s	Three JMU	Englanti	https://wv
154	China Military	26.3.2019	27.3.2019	Fang Xiaozhi	NATO's fate un	According	Englanti	http://eng
155	Center for new america	20.3.2019	27.3.2019	Rachel Rizzo and Carrie	Bolstering Con	n January,	Englanti	https://wv
156	U.S mission to the OSCE	28.3.2019	3.4.2019	Lane D. Bahl	Response to 20	Thank you	Englanti	https://wv
157	Uusi Suomi	9.4.2019	10.4.2019	Rauno Lintunen	Euroopan kom	Euroopan	Suomi	http://rau
158	Uusi Suomi	2.4.2019	10.4.2019	Antero Eerola	Suomi ei tarvit	President	Suomi	http://ant
159	Geopolitical Futures	9.4.2019	10.4.2019	George Friedman	NATO's Anachr	NATO Sec	Englanti	https://ge
160	European defence agen	5.4.2019	10.4.2019		EDA supports M	'Locked S	Englanti	https://wv
161	Aspenia Online	4.4.2019	10.4.2019	Julian Lindley-French	1949-2019: Diff	"The Parti	Englanti	https://wv
162	IISS	4.4.2019	10.4.2019	Fabrice Pothier	Five challenge	At the gra	Englanti	https://wv
163	Turun sanomat	10.4.2019	17.4.2019	Hannu Toivonen	Suomen mahd	Suomi olis	Suomi	https://wv
164	Turun sanomat	10.4.2019	17.4.2019	Hannu Toivonen	Kaatunut sote-	Heti MTV:	Suomi	https://wv
165	Timo Soini ploki	10.4.2019	17.4.2019	Timo Soini	SUOMI KELPAA	Kun minu:	Suomi	http://tim
166	Uusi Suomi	11.4.2019	17.4.2019	Ari Pesonen	Antti Rinne Na	SDP:n puh	Suomi	http://ari
167	Nato Parliamentary ass	11.4.2019	17.4.2019		NATO Parliame	Antalya, 1	Englanti	https://wv
168	Rep. Will Hurd	10.4.2019	17.4.2019		EDITORIAL: At	Seventy y	Englanti	https://hu
169	aiic	15.4.2019	17.4.2019		NATO defense	Qualified	Englanti	https://aii
170	Nato Parliamentary ass	17.4.2019	24.4.2019	Matej Tonin	2019 - ARTIFICI	In little ov	Englanti	https://wv
171	mccaininstitute	17.4.2019	24.4.2019	Kurt Volker	NATO's Unfinis	When NA	Englanti	https://wv
172	U.S embassy & Consula	17.4.2019	24.4.2019		Romania Hosts	Romania f	Englanti	https://gr
173	Air Mobility		24.4.2019		EATC commanc	... on beha	Englanti	https://ea
174	Health.mil News	18.4.2019	24.4.2019	Andrew Layton	Medical logisti	INCU, Ron	Englanti	https://wv
175	Royal Canadian Navy	18.4.2019	24.4.2019	Ryan Melanson	HMCS Toronto	As HMCS T	Englanti	http://ww
176	RealClearDefence	25.4.2019	1.5.2019	James Foggo & Mel Mc	NATO Looks to	NATO Loo	Englanti	https://wv
177	Nato Parliamentary ass	24.4.2019	1.5.2019		NATO parliame	Brussels 2	Englanti	https://wv
178	Clingendael	29.4.2019	1.5.2019	Dick Zandee	THE ALLIANCE	This articl	Englanti	https://wv
179	NAOC	24.4.2019	1.5.2019	Naz Gocek	Slovakia's New	NATO's 70	Englanti	http://nat
180	Defence academy of th	24.4.2019	1.5.2019		Defence Leade	On 20 - 21	Englanti	https://wv
181	The medical futurist	25.4.2019	1.5.2019		We Went To A	In Afghani	Englanti	https://m
182	European Business Rev	3.5.2019	8.5.2019	Peter Kramer	Wants German	By N. Pete	Englanti	https://wv
183	The Economic Times	3.5.2019	8.5.2019		US Air Force Ge	The forme	Englanti	https://ec
184	IISS	10.5.2019	15.5.2019	Ben Barry	Defending Eur	The IISS h	Englanti	https://wv
185	Friends of Europe	8.5.2019	15.5.2019	Karl-Heinz Kamp	NATO, NUKES	This year,	Englanti	https://wv
186	EU Advisory Mission in	8.5.2019	15.5.2019		EUAM Iraq atte	The Head	Englanti	https://ee
187	Carnegie - Moscow Cen	14.5.2019	15.5.2019	MAXIM SAMORUKOV	Double or Quit	The Krem	Englanti	https://ca
188	Nato Parliamentary ass	14.5.2019	15.5.2019		Iceland's Role	Brussels /	Englanti	https://wv
189	Inside Arabia Online	16.5.2019	22.5.2019	SOUKAINA RACHIDI	Egypt Reporte	Egypt has	Englanti	https://in
190	Center for strategic research		22.5.2019	Giray SADIK	Call for Papers	ThemeNo	Englanti	http://san
191	Security Week	23.5.2019	29.5.2019		NATO Warns R	The head	Englanti	https://wv
192	Women in Internation S	22.5.2019	29.5.2019	Kathyrn Urban	Beyond Collec	(Excerpte	Englanti	https://wv
193	International peace Bureau		29.5.2019	Kristine Karch and Luca	Call for counte	First anno	Englanti	http://ww
194	ukdj	29.5.2019	5.6.2019	George Allison	NATO warship:	Standing f	Englanti	https://uk
195	U.S embassy in Estonia	30.5.2019	5.6.2019		U.S. Marines V	U.S. Marin	Englanti	https://ee
196	Kansanuutiset	7.6.2019	12.6.2019		Nuorilla taas n	Yleistä ase	Suomi	https://wv
197	Information Clearing Hc	6.6.2019	12.6.2019	Finian Cunningham	Trump & NATC	June 06, 2	Englanti	http://ww
198	Center for internationa	6.6.2019	12.6.2019	Steven Pifer	NATO's Ukrain	Ukrainian	Englanti	https://cis
199	Naval Today		12.6.2019		HMS Queen Eli	Once the	Englanti	https://na
200	Hrmodanske Internatio	5.6.2019	12.6.2019		Main Outtakes	Ukraine's	Englanti	https://er

201	Ruotuväki	12.6.2019	19.6.2019	Pasi Pouta	Tietojärjestelm	Suomi osa	Suomi	https://ru
202	Joint Air Power Competence Centre		19.6.2019	Tim Vasen	Is NATO Ready	Introducti	Englanti	https://w
203	John Barasso - United S	13.6.2019	19.6.2019		Barrasso Bill He	Bill would	Englanti	https://w
204	Presidentti.fi	19.6.2019	26.6.2019	Valtioneuvoston viesti	Suomen kriisin	Tasavallan	Suomi	https://w
205	U.S department of State	25.6.2019	26.6.2019	KAY BAILEY HUTCHISON	LiveAtState wi	Moderato	Englanti	https://w
206	atahq.org	19.6.2019	26.6.2019	Atlantic Treaty Associa	ATA NATO Run	The ATA N	Englanti	http://ww
207	Global Research	1.7.2019	3.7.2019	Stephen Lendman	Pentagon, NAT	Trump esc	Englanti	https://w
208	Elcano Royal Institute	1.7.2019	3.7.2019	Antonio Missiroli	NATO and the	Speech de	Englanti	http://rea
209	E-internation relations	9.7.2019	10.7.2019	Arslan Ayan	Adding 'T' to B	Ever since	Englanti	https://w
210	America's Navy	3.7.2019	10.7.2019		Honoring Broth	Naples, It	Englanti	https://w
211	aerosociety.com	8.7.2019	10.7.2019		NATO to trial r	NATO's m	Englanti	https://w
212	Ministry of National De	27.6.2019	10.7.2019		The talks agen	The two w	Englanti	https://er
213	Buyandsell.gc.ca		10.7.2019		Tenders from t	The NATO	Englanti	https://bu
214	Roketsan		10.7.2019		Roketsan at NA	NATO Sec	Englanti	http://ww
215	Nato Parliamentary ass	11.7.2019	17.7.2019	Joseph A Day	2019 - A NEW E	The Allian	Englanti	https://w
216	clingendael		17.7.2019		MILITARY MOB	Improved	Englanti	https://w
217	usna	11.7.2019	17.7.2019	PHILLIP MCCORVEY	NATO LREC Tri	The NATO	Englanti	https://w
218	NATO Mountain Warfar	11.7.2019	17.7.2019		2019 NATO Cer	The 2019 C	Englanti	https://w
219	Istituto Affari Internazi	11.7.2019	17.7.2019		Approaches to	In recent	Englanti	https://w
220	maaseuduntulevaisuus	19.7.2019	24.7.2019	Hermann Härkönen	Kysely: Puolet	Vastannei	Suomi	https://w
221	Global Research	21.7.2019	24.7.2019	F. William Engdahl	Erdogan, Cypr	In recent	Englanti	https://w
222	U.S Department of State	18.7.2019	24.7.2019		Deputy Secret	The below	Englanti	https://w
223	nineoclock.ro	17.7.2019	24.7.2019		Former ForMir	NATO Sec	Englanti	https://w
224	The Flethcer School	18.7.2019	24.7.2019		Pushing Turkey	Dean Eme	Englanti	https://fle
225	German Institute for Int	26.7.2019	31.7.2019	Marco Overhaus	US security cor	Obsolete,	Englanti	https://w
226	The Soufan Group	26.7.2019	31.7.2019		The Growing R	Bottom Li	Englanti	http://ww
227	Mercator Institute for C	25.7.2019	31.7.2019	Helena Legarda, Meia	NATO needs a	NATO disc	Englanti	https://w
228	Harvard Kennedy Schoc	24.7.2019	31.7.2019	Karl Kaiser	ANALYSIS & O	NATO has	Englanti	https://w
229	Berlin Policy Journal	25.7.2019	31.7.2019	ALEXANDER GRAEF	Getting Deter	On June 1	Englanti	https://be
230	Jagello 2000	24.7.2019	31.7.2019		Meet NATO 20	This year'	Englanti	https://w
231	The German Marshall F	22.7.2019	31.7.2019		NATO, Russia a	Russia's ir	Englanti	http://ww
232	The Hague Centre for St	28.7.2019	31.7.2019	Rob de Wijk	How NATO's s	U.S. Presic	Englanti	https://hc