

## THE NORDIC THEORY OF VOTING ADVICE APPLICATIONS

Project paper

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## Introduction

One of the most prominent definitions for voting advice applications (VAAs) comes from Stefan Marschall and Diego Garzia, who argue that “VAAs are online tools which help voters pick a candidate or party by comparing voters’ preferences on issues to the stances of candidate or parties”. (Marschall and Garzia 2014). VAAs have become a standard practice in European countries since the late 1990’s and their popularity seems to be growing in Finland, where more than half of the voters (57%) used at least one VAA during the last Finnish Parliamentary elections in 2023. (Statistic Finland 2023) But Finland is not the only country where people use VAAs more. Especially in Switzerland, Netherlands, and Germany VAAs have become a lasting feature of campaigning and election coverage during the past decades. (Isotalo 2020) The same applies to Sweden, Norway, and Denmark. (Grønli 2024, Wessel Tromborg 2024, Pettersson 2024)

The popularity of VAAs is easily explained: they help voters pick the most suitable candidate in a context where they are faced with an informational overload. (Isotalo 2020) Voters need to choose a single candidate among hundreds of alternatives and VAAs provide a so-called cognitive shortcut that helps them in this task. However, each VAA is based on a set of presumptions. For example, most VAAs assume that people are rational actors, who will choose a candidate whose political stances best represent their own. (Isotalo 2020) Numerous studies in the sphere of political science have shown that indeed there is much more at play in a person’s voting choice: party identification, socioeconomic factors, and personal income level to name a few. (Campbell et al. 1960, Lipset and Rokkan 1967, Shugart et al. 2005). Candidates’ personalities and characteristics also play a role, as many prefer to vote for candidates who are pleasant, credible, and influential. (Isotalo 2020)

Several studies have been made on VAAs’ impact on election turnout and vote choice. Some have indicated that using VAAs increases the likelihood of switching candidates (Andreadis, Wall 2014) and others have concluded that VAA users are more likely to vote than non-users (Garzia et al. 2017). In Switzerland, researchers found that a popular VAA (Smartvote) was responsible for 1,2% of the turnout in the Swiss federal elections of 2007 (Germann and Gemenis 2019). On the contrary, some studies point out that VAAs did not impact turnout or voting decision (Munzert et al. 2020). Interestingly a recent study argues that 16 percent of the Danish users who received a party-incongruent result changed their voting intention. VAA users who were undecided before taking the VAA are even more inclined to follow the advice. Researchers estimated that nearly 175,000 Danes updated their party preferences because of a result that they received from a VAA. (Tromborg and Albertsen 2022) Of course, all of these studies were conducted in different ways and relate to different contexts, but I think it is safe to say that VAAs have a substantial impact on election results.

Jasper van de Pol’s study (2014) categorized VAA users based on different intentions: doubters, seekers, and checkers. He argued that doubters have high uncertainty about their vote choice, and they have low political interest. Seekers, on the other hand, are uncertain about their vote and have little political interest, but they have clearer party preferences and are seeking guidance choosing a candidate from the VAA. Checkers are interested in politics and use the VAA mostly for entertainment purposes. In a self-reported dataset from a Dutch VAA majority of the users were checkers, one-third were seekers and one-tenth were

doubters. Of course, the motivations for VAA use and respective shares of different user types may differ from one election to another.

Even though VAAs are gaining more and more popularity among voters, there has been criticism concerning the methodological and normative aspects of the VAAs. Geminis (2013) and Fossen and van den Brink (2015) question whether voters can trust VAA's validity and reliability or not. Researchers have particularly pointed out the lack of transparency in Finnish VAAs since media companies do not disclose entirely how they match candidates with voters. (Isotalo 2020) There have been incidents in which the algorithms have raised public scrutiny and even had to be altered after launching. Before the Finnish parliamentary elections in 2019, Helsingin Sanomat had to tweak the way their VAA algorithm matched voters to political parties, as the algorithm rewarded parties for having uniform answers among their candidates. This weakness was utilized by a small party that coordinated identical answering across their candidates to manipulate the results of the VAA in their favor. The goal was to flood prospective voters with VAA results favoring said party's candidates in order to convince unsure voters to take a chance on them. These incidents highlight the need for thoughtful VAA design, as well as increased transparency towards the users regarding the ways that VAAs operate. Most media companies have increased their expertise in data science, and thus we ought to be able to expect increasingly sophisticated designs from the VAAs.

These questions and challenges in VAA design began to interest me when I was chosen as the producer for Yle's VAA in the parliamentary election in 2023. I began to wonder what the best application for our company and our users would be like. What kind of features would we like to preserve in our upcoming application and what kind of features had we lacked in our previous applications? And how would I lead our expert journalist as efficiently as possible to come up with the statements for the next application?

I think the rise of VAAs' popularity is linked to a more substantial change in our political landscape and the relationship between voters and the media. Today voters are less loyal and can change both candidates and parties from one election to another. This ongoing state of flux is the main reason voters need the "cognitive shortcuts" more than they used to. For example, just a couple of years ago only 44 percent of the Finns used VAAs and the number is now 57 percent. (Statistics Finland 2023) I think this also underlines the need to study VAAs thoroughly in the future as well.

Another striking aspect of VAAs is that young people use them more than older voters. (Statistics Finland 2023) I believe that if we can develop VAAs to be more user-friendly, we might have a chance to increase the lagging turnout of young voters, which has been a problem in many societies around the world. It would be worthwhile to investigate how we might attract even more young voters to fill in VAAs, as this might have an impact on the wider political engagement and election turnout of the next generations of voters.

I think the media should be even more thorough about what kind of VAA design they want to apply. And the reason is simple: VAAs have a bigger impact on people now than they used to have. That's why VAAs should provide sound matches with candidates and parties in the future.

## Research questions and methodology

In this project paper, I have practical research questions since VAAs, after all, are concrete journalistic pieces. With answers to these questions, I would like to build a stronger foundation for better VAAs in the future. I concentrated on parliamentary election VAAs in Finland, Denmark, Norway, and Sweden.

My research questions:

1. *“What are the different types of VAAs the biggest media companies in Finland, Denmark, Norway, and Sweden have used in the latest parliamentary elections? How do the VAA designs differ from each other?”*
2. *What kind of impact do different electoral systems have on the design of VAAs?*
3. *What is the reasoning behind different journalistic choices in the design of these VAAs?*
4. *What are the possible problematic choices different media companies have made in the past and how could they fix them?”*

I base my research on both literature and expert interviews. First, I lay out differences between Finnish, Danish, Norwegian, and Swedish electoral systems because the context helps to understand the differences between different VAA designs. The context also helps to understand which design choices can be applicable in different countries and how the context impacts VAA design.

I assume that there are a lot more similarities than differences between these countries since they all are Nordic countries. At least all of these countries apply a proportional electoral system which suggests that there is a need for VAAs since voters go through cognitive overload during the election time. On the contrary, in countries that have a plurality system the cognitive burden is lighter since there are fewer candidates and parties from which voters make their choice. In these countries, the candidate who receives the most votes will be elected into the parliament. This is also known as the first past-the-post system.

Next, I will present some of the most prominent VAAs from Finland, Denmark, Sweden, and Norway. I will introduce the VAA's by The Finnish Broadcasting Company (YLE), Helsingin Sanomat, Jyllands Posten, Politiken, Denmark Radio (DR), Norwegian Broadcasting Corporation (NRK) and Sweden Television (SVT) and compare their VAA design choices to one another. It is important to understand that these choices are journalistic decisions and they also have an impact on the outcome of VAA. I will focus on VAA statements, algorithms, the relationship between politicians and media companies, the role of candidates, and parties in the VAAs, results and other distinctive features.

To have a deeper understanding of the different VAA designs, their benefits, and pitfalls, I have conducted a series of in-depth interviews with developers behind the VAAs. This way, I could understand the reasoning behind the different choices. I also did interviews with researchers from Finland and Denmark who were able to shine a light on the most significant problems that VAAs nowadays have and what we can expect from VAAs in the future.

# 1. Differences and similarities in Finnish, Danish, Swedish, and Norwegian electoral systems

## 1.1. The Finnish system - votes are given to candidates

The basic principle in the Finnish parliamentary elections is that the elections are held every four years if the acting prime minister doesn't dissolve the parliament earlier. This happens rarely in the Finnish system and the last time a snap election took place in Finland was in 1975. (Ministry of Justice 2020) This might be because a prime minister's success is often measured by the ability to keep the parties in the government united. And obviously, parties don't want to give up their legislative power in advance.

In the Finnish system, citizens' vote goes to both the candidate and the party and voters elect 200 members to the Parliament of Finland. In other words, citizens give votes directly to candidates who represent different parties. The biggest party is decided based on the total number of votes which its candidates have received. Voting takes place in 13 different electoral districts and each party may nominate 14 candidates per district. Constituency associations may also nominate candidates for parliamentary elections and they may form joint lists that can have at most 14 candidates per district. (Ministry of Justice 2020) There are currently 17 parties in the Party Register and nine of them are represented in The Finnish parliament. (Party Register 2024, The Finnish Parliament 2024) This means that Finnish citizens have plenty of options to choose from during election time. For example, 485 candidates were running for The Parliament of Finland in the electoral district of Uusimaa in the last elections in 2023. (Statistics Finland 2024) This means that the voters have their work cut out for them if they want to thoroughly familiarize themselves with the candidates before making their voting decision.

Seats in the parliament are distributed among the electoral districts according to the number of residents in each district before the parliamentary elections. There is one exception that is the Finnish island called Åland which is always guaranteed one seat in the parliament. The majority of the seats are given to South and South-West electoral districts since that is where the majority of Finns live. (Ministry of Justice 2020) There will be fewer seats for candidates in other parts of Finland in the future as Finns are continuously moving from the Northern and Eastern parts of Finland to the bigger cities in the South and South-West. .

Every 18-year-old citizen is eligible to vote in Finland and every eligible voter has the right to stand as a candidate. There are only a few exceptions and those concern professional soldiers and high-ranking public officials such as the Chancellor of Justice who cannot be a member of the parliament without resigning from his or her office. (Ministry of Justice 2020)

Interestingly, young voters are using VAAs more than older generations in Finland. According to Statistics Finland, more than 70 percent of 18-34-year-olds used at least one VAA in the last parliamentary election. Among 55-64-year-olds, the share was a bit over 50 percent. This is interesting because young voters are thought to be less knowledgeable about politics which might explain why they also use VAAs more often. Younger generations also say that VAAs had a bigger impact on their voting decision than older voters. Overall, users felt that VAAs had a bigger impact on which candidate they voted for than on party choice. (Statistic Finland 2023)

## 1.2. The Danish system - People have abundance of choices

The unicameral Danish parliament, Folketing, consists of 179 seats. 175 seats are distributed to mainland Denmark and two members are elected from both Faroe Islands and Greenland. The members from these two islands are elected according to different rules. (Folketinget 2011) Next, I will concentrate on the mainland's rules since the biggest VAA user groups are among citizens who are electing the 175 members to parliament.

According to the Danish constitution, members of the parliament (MP) are elected by universal suffrage and by direct and secret ballot. Two basic principles define the Danish system. The first is that proportional representation secures equal representation of different regions. The number of inhabitants, the number of electors, and the population density will determine how many seats each electoral district will have. (Folketinget 2011)

The second principle is that the Danish electoral system is a list system with provisions for personal candidate choice within a party list. For this reason, it is usually described as a two-tier election system. This means that voters can choose whether they want to vote on a party list as such or pick a candidate from a party list. Parties can decide by themselves what kind of weight they put on votes for individual candidates but the system encourages to emphasize preference voting. According to different studies, the overall results of parties are better if they can attract more votes for individual candidates. Either way, each candidate is credited with both the personal votes given to him/her as well as his/her proportional share of party votes. Candidates are elected according to the total number of votes they have received. (Folketinget 2011, Hopmann & Karlsen 2020) It is estimated that somewhat 50 percent of the Danes cast a personal vote. (Elklit 2011)

Denmark is divided into three electoral provinces during the parliamentary elections: 1) Metropolitan Copenhagen area 2) Sealand-Southern Denmark 3) Northern and Central Jutland. The three provinces are subdivided into 10 electoral districts that elect the 175 members of parliament. 135 seats are constituency seats which are distributed among the ten multimember constituencies and the remaining 40 seats are compensatory seats which are distributed among the three provinces' seat allocation. (Folketinget 2011, Kosiara-Pedersen 2023) The purpose of compensatory seats is to lower the threshold for the parliament. In the Danish electoral system, there are three thresholds: 1) Winning a seat directly in any of the ten multi-member constituencies. 2) Obtaining in two of the three electoral provinces a number of votes corresponding to the provincial votes/seat ratio 3) Two percent of the valid, national vote. (Folketinget 2011) Comparatively low threshold means that there are many party groups in the parliament. In spring 2024, there were 15 party groups in the parliament and five MPs did not belong to any group. (Folketinget 2024)

Danish voters are faced with plenty of options during election time. 1 014 candidates were running for a parliamentary seat in the last elections in 2022. Most of these candidates were running from a party list and 14 parties had nominated candidates. 14 candidates were running from an independent list. (Statistics Denmark 2024) Thus the Danish electoral system is similar to the Finnish one in that voters have to do their homework beforehand if they want to vote for the most compatible candidate and party for them. However, there is one key difference between these two countries regarding their list systems. Danish voters have the option to only vote for the party which they prefer, whereas Finnish voters don't

have the same possibility. Thus you could argue that the cognitive toll is even heavier for Finnish voters. Still, there is a need for applications that help voters make up their minds in both countries.

One electoral practice that has an impact on VAAs relates to dissolving a parliament and calling a new parliamentary election before the four-year term ends. This is a common practice in Denmark especially when the four-year parliamentary term is coming to an end. A snap election took place also in 2022 when Prime Minister Mette Frederiksen called elections before the end of her government's term as a reaction to surmounting pressures within the government. It has been argued that the biggest reason for the snap elections was the Mink Commission's report. The report questioned the legality of closing down all the country's mink farms during the COVID-19 crisis when it was found out that some of the mink had contracted the coronavirus. The Social Liberals, one of the cabinet parties, put pressure on Prime Minister Frederiksen to call parliamentary elections as soon as possible. (Kosiara-Pedersen 2023)

Whenever a prime minister calls snap elections in Denmark, the campaigning time is usually around three weeks. (Hopmann, Karlsen 2020) This election practice creates pressure on journalists who are involved in developing VAAs. The developers have to be ready to launch a new VAA whenever it is required.

One thing that stands out in the Danish elections is a comparatively high turnout, even if there has been a small decline in the recent years. In the last Danish parliamentary elections the vote turnout was 84,2 percent whereas in Finland the turnout was 72 percent in 2023. (Kosiara-Pedersen 2023, Statistic Finland 2023) In Sweden, the vote turnout was 82 percent in 2022 and in Norway, the number was 77,2 percent in 2021. (Statistics Sweden 2023, Statistics Norway 2023)

### **1.3. The Norwegian system - the party is the defining actor**

The Norwegian electoral system reminds other Nordic countries in many ways. The Norwegian model is based on principles of direct election and proportional representation from multimember electoral districts. Direct election means that citizens vote for an electoral list in which candidates have a pre-assigned order. Political parties and other groups can put up lists at elections. In other words, parties and other electoral groups have the power to define which candidates will most likely be elected into the parliament. Proportional representation means that seats are distributed according to the votes received by different parties and their lists. (Government of Norway 2017)

Theoretically, Norwegians can vote directly for candidates but in practice, these votes have no role in changing the outcome of the elections. In the Norwegian national elections, more than half of a party's voters have to express their shared will to change the order of candidates on a list in order to alter the order of candidates. To this day, there has never been enough votes to change the order of candidates on a list. Having such a high threshold is practically the biggest difference between Norway, Denmark, and Finland's electoral systems. It has an impact on campaigning style and political campaigns are much more focused on parties than individual candidates in Norway. (Hopmann, Karlsen 2020, Aardal & Bergh 2022) However, Norwegians have plenty to choose from. According to Statistics



Norway, as many as 25 parties and independent lists received votes in parliament elections 2021. (Statistics Norway 2021)

A large number of parties speaks for the need for applications that help voters make informed decisions in the elections. This is especially true if one looks at weakening ties between voters and parties in the Nordic countries. In Norway, only 15 percent of voters had decided which party to vote for during campaigning time in the 1960s. This share has steadily increased since the 1970s and now somewhat half of the Norwegian electorate report that they have decided their party preference during the campaigning time. (Hopmann, Karlsen 2020) There is also evidence that Norwegians are switching parties from one election to another and the party system is fractionalizing. (Aardal & Bergh 2022)

Norway is divided into 19 electoral districts. Electoral districts used to correspond with the counties but the Norwegian parliament decided to reduce the number of counties from 19 to 11. One of the districts is the city of Oslo which is a county itself. There are 169 seats in the Parliament of Norway called Storting. Parliamentary seats are allocated to the electoral districts according to the geographical size of the county and the number of residents in the constituency. Each inhabitant counts as one point, while each square kilometer counts as 1.8 points. The equation has led Norway into a situation where some of the remote districts are overrepresented. One example is Finnmark which has only 75 000 residents but geographically is a larger area than Belgium. Thus, one vote in Finnmark counts two times more in parliamentary elections than in Oslo. (Government of Norway 2017, Aardal & Bergh 2022)

Both parliamentary and local elections are held every four years. Local (municipal and county elections) are conducted together and they are held midway in the electoral term of the Storting. (Government of Norway 2017) The Norwegian constitution is strict when it comes to snap elections. The constitution doesn't allow the prime minister to dissolve parliament before the four-year term ends. (Hopmann, Karlsen 2020) This became apparent in 2013-2021 when the center-right government's tenure entailed a lot of internal controversies among the ruling parties and the arguments led to changes in the government's composition. (Aardal & Bergh 2022) In other words, the media companies have time to prepare their election coverage because they know beforehand when elections will be held.

Almost every Norwegian citizen who reaches the age of 18 by the end of the year of the election has the right to vote. The basic principle is that any person who is entitled to vote in an election is also eligible to run as a candidate. There are only a few exceptions and these concern for instance high ranking officials such as civil servants in different ministries and judges in the Supreme Court. (Government of Norway 2017)

#### **1.4. The Swedish model - new parties new options**

The Parliament of Sweden, Riksdag, is the highest decision-making body in the country. Their elections are held every four years in September and since 1970 local elections (regional and municipal elections) have been arranged on the same day. (Riksdagen 2023, Hagevi 2022) This of course means that journalists are very busy every four years in September since they have to take care of three election coverages at the same time.

Unlike in Norway, it is possible to arrange snap elections even though it is tightly regulated. There can be only two acceptable reasons for snap elections. The first reason requires that the prime minister and the cabinet receive a no-confidence vote. In other words, the majority of the parliament votes against the government's confidence. The second reason relates to the forming of a government. The Speaker of the parliament proposes a new prime minister to the parliament at the beginning of the term. If a speaker fails four times to get a prime minister candidate through in the parliament a snap election must be held within three months. Snap elections don't have an impact on the general elections' schedule since elected MPs do not start a four-year electoral period from the beginning. Instead, they remain in office until the next general election is held as originally scheduled. Snap elections are not common in Sweden and they have been held in the country only once in 1958. (Riksdagen 2023)

There are 349 seats in The Parliament of Sweden and the seats are distributed proportionally in accordance with received votes. The basic rule is that each party must receive at least four percent of the votes of a constituency in order to receive a seat in the parliament. The threshold has an impact on the number of parties in the parliament and as a result, there are fewer small parties in the Swedish parliament than in many other countries. (Riksdagen 2023) Sometimes this leads to tactical voting and there were signs of the phenomenon in the last parliamentary elections. Many left-leaning citizens voted for the Green Party because they wanted the party to stay in the parliament. (Hagevi 2022)

Swedish citizens who have turned 18 by the time of an election and who have been registered as residents in Sweden are eligible to vote in the parliamentary elections. Anyone who is eligible to vote in the parliamentary election has also a right to be nominated as a candidate in the elections. An MP is allowed to represent a different electoral district than where he or she actually lives. (Riksdagen 2023) There are 29 electoral districts in Sweden and the districts in many ways resemble counties. There are a couple of exceptions and these exceptions relate to areas which have a high number of residents. Highly populated counties of Stockholm, Skåne, and West-Götaland contain several electoral districts. Each constituency elects on average 10-12 members to the parliament but there are differences between electoral districts. The county of Stockholm has 43 seats and on the other hand, Gotland has only two seats. (Riksdagen 2023)

Swedish voters have different options when it comes to voting. Citizens can place their vote on a party ballot paper, a name ballot paper or a blank ballot paper. If a voter uses a party ballot paper he or she has decided to vote for a certain party. In a name ballot paper, voters can choose a favorite candidate from a party's list of candidates. Voters can also write the names of a party and a candidate on a blank ballot paper. (Riksdagen 2023) Number of personal votes has varied in the recent parliamentary elections in Sweden. In the last parliamentary elections of 2022, 22,5 percent of the cast votes were given to specific candidates. Exactly 20 years earlier the share was 26 percent. (Statistics Sweden 2023) In other words, Swedish voters have plenty of options during the election and almost a quarter of the voters took full advantage of these possibilities in the last election. This of course requires a lot of work from voters in order to be aware of their own as well as candidates' preferences.

A candidate who is at the bottom of the party list can gain a seat in the parliament if he or she collects more than five percent of their party's votes in an electoral district. If more than one candidate has received more than a five percent share of the votes, seats are distributed based on the number of personal votes. When there are no longer candidates who have received more than five percent of the votes, seats are allocated according to the order of the party list. (Riksdagen 2023)

According to political science professor Magnus Hagevi Sweden used to be called the "frozen" party system since people kept voting for the same parties from one election to another. But now, voters in Sweden have weaker loyalty towards parties than they used to have in the past. In the 1960 parliamentary election, 53 percent of voters said that they were a firm supporter of a party and by 2018 the figure had decreased to 11 percent. Another societal change, which is in connection with the weaker party loyalty, is that the identities of Swedes aren't formed through social cleavages and social groups as much as they used to in the past decades. The class affiliation of voters is much less significant today than it used to in terms of party choices. There are a few reasons for this development: individualization, economic development, the expanding welfare state, and accessible education. This has meant that ideological differences between social groups have decreased. (Hagevi 2022)

Increased mobility has created space for new ideological dimensions and new parties. Parties like Sweden Democrats, Christian Democrats, and Green Party have been established in recent decades and they have gained more and more support over time. Especially Sweden Democrats and Green Party have been seen as representatives of the cultural dimension of politics which emphasizes values more than economic issues. The rise of new parties has meant that traditional parties like Social Democrats have lost support among voters. More and more people also decide who to vote for during election campaigns. One shouldn't be too dramatic about the change since people are changing their party preferences mostly within the two blocs: the left and the right block. This is true even though there have been changes in the formation of blocs. (Hagevi 2022) Changes in the party system and increased mobility still underline the need for applications that help voters decide who to vote for in elections in Sweden.

## 2. NORDIC VOTING ADVICE APPLICATIONS IN COMPARISON

### 2.1. VAA features in comparison

Before I move on to compare different VAAs in the Nordic countries I want to introduce the different features I want to concentrate on in my project paper. VAA researchers have laid out the minimum standards for applications in Lausanne in 2013. According to the Lausanne declaration, every party and candidate ought to have the possibility to take part in VAAs. This means that VAAs should be available to all voters and they should include as many parties and candidates as possible. If somebody or someones are excluded from a VAA the reasons ought to be publicly available and justified. Nobody should be excluded because of ideological reasons. (Garzia & Marschall 2014)

VAAs differ when it comes to matching users with candidates and parties. Some VAAs concentrate on matching voters with candidates and others with parties. I assume that electoral rules have an impact on how VAAs work in different Nordic countries. Strict list systems might encourage media companies to concentrate more on the parties who hold the power to define who is the most likely to get into the parliament from their list. Another dimension relates to how the party stances are defined in a VAA. Some of the developers ask stances directly from parties and others will define answers by themselves after they have been closely following domestic politics. According to the Lausanne declaration both these practices are acceptable but developers should be open and transparent about their chosen method. (Garzia & Marschall 2014) These two ways of defining answers have different temporal perspectives. The latter concentrates on the past since previous actions define the answers and these VAAs hold parties accountable for their previous actions. The first alternative gives parties a chance to represent their stances as they would be outside the constraints of daily politics, which many times requires compromises with other parties. The first alternative also allows parties to change their minds. This is the reason why these VAAs concentrate on the present and future as well.

The statements are the most important part of VAAs. The quality of VAAs depends largely on the quality of the statements because these questions directly define the voting recommendations. (Isotalo 2020) There are different definitions for good statements but the most widely used one in the Finnish context comes from researchers Haukio and Suojanen (2004) who laid out five different features for good statements. According to them, good statements should entail at least one of these features: 1) relevant for the upcoming election, 2) easy to understand, 3) capture inter- and intra-party differences between parties and candidates, 4) connected to the agenda of the electoral body's next term and 5) provoke emotional responses in voters or concern important economic issues. (Haukio & Suojanen 2004, Isotalo 2020) These criteria are in line with the Lausanne declaration. According to the declaration, VAAs should entail relevant statements that reveal the different dimensions of political competition. (Garzia & Marschall 2014) In my experience, VAA developers also try to balance between different themes or political dimensions and try to formulate statements in a balanced way. This means for example, that people from different political spectrums can equally often answer 'yes' to different statements. This is based on the widely held view that it is easier to say "yes" than "no" to questions.

Researcher Veikko Isotalo (2020) writes about the most common mistakes that VAA developers make when they are formulating statements. The VAA statements should embrace concreteness and avoid double-barelledness, qualifications, and quantifications. Concreteness means that there should not be any vagueness in the statements so that everybody can interpret the statements in the same way. Double-barelledness means that a statement can be divided into several statements. This poses a problem in that users can interpret the statements in different ways and might be answering a different question even though they are looking at the same statement. Qualifications and quantifications should be also avoided. Qualification means that a statement entails additional information which is not necessary which leads to a situation where users pay attention to the additional information and not to the statement itself. Quantified questions usually contain words like “increase” and “decrease”. (Isotalo 2020) One example of such a statement could be the following sentence: “Government should increase expenditure on healthcare services”. There might be two reasons why one might disagree with the statement. Users might think that the current level of expenditure is enough, and that's why the government should not increase expenditure. Another respondent might want to make cutbacks on healthcare services.

It is also important to pay attention to composition of the statements as a whole. If the composition is unbalanced, a VAA might be argued to favor some parties over others. If a party and its candidates have a clear profile in certain political questions and those topics are over-represented in a VAA they are prone to get more matches with voters than other parties. The statements should also relate to important political dimensions which are relevant to the party competition. Clear idea of relevant political dimensions helps developers to avoid biases when it comes to the structure of statements. The more questions a VAA has in different dimensions the better it is for the reliability of matching users and candidates. A balanced set of questions also helps to differentiate candidates from each other in important issues. (Isotalo 2020) This of course creates pressure on developers who should be aware of the most important ideological dimensions in domestic politics. On the other hand, this can be seen as part of the journalistic process where professionals continuously pick and choose the most important topics and questions. VAAs are in many ways journalistic products.

Different VAAs provide different ways of answering questions. Usually, people are asked to agree or disagree with statements. There might just be two options to choose from which basically means yes or no alternatives. Often developers in the Nordic countries have ended up using a five-point Likert scale. However, some of them have excluded the chance to use the option in the middle. There are also other scales that provide either fewer or more options for the users. In addition, sometimes candidates and users can choose which statements are important for them. Salience weights are quite common in Nordic countries but not every VAA entails them. (Isotalo 2020) Another interactive element of VAAs is a chance to skip some of the questions. (For example Yle 2023, SVT 2022) These kinds of features are important in terms of abiding by the Lausanne Declaration. It states that “if applicable, voters should be able to express their issue salience by weighting or deciding on which issues they want to be compared to parties and candidates.” (Garzia & Marschall 2014) These kinds of elements empower users since they give some say to voters on how the match between them and candidates is counted.

Finally, VAAs provide results, which mostly means voting advice to users. In many cases, a VAA matches the scores between users, candidates, and parties. Often such scores are presented in percentages from 0 to 100 percent and the matching candidates are shown to users in descending order. Users can also read candidates' answers in greater detail. (Isotalo 2020) This is an important feature of VAAs since it allows users to get to know candidates' or parties' arguments for their stances. Political scientists Sami Borg and Kari Koljonen (2020) think that VAAs should also provide links to other applications and in-depth materials. (Borg & Koljonen 2020) These features serve also a pedagogical purpose since written arguments and other materials give users the chance to learn more about societal topics and political arguments.

Users are matched with candidates and parties through algorithms. There are basically three algorithmic options available for VAA developers: 1) Manhattan 2) Euclidean 3) Mahalanobis. (Isotalo 2020) From these three, the Manhattan distance metric is the most common among Nordic VAAs and usually its use is justified with reference to transparency. The Manhattan distance metric has the longest tradition in the Nordic VAAs and familiarity might make it the easiest for users to understand. The most important thing is that the algorithm ought to be documented and clearly explained to users. And of course, it should be methodologically sound. (Garzia & Marschall 2014)

Next, I will go through some of the most prominent Nordic VAAs in the latest parliamentary elections and describe their design choices. The media companies behind these VAAs are The Finnish Broadcasting Company, Helsingin Sanomat, Danish Broadcasting Corporation DR, Jyllands-Posten, Politiken, The Norwegian Broadcasting Corporation NRK and Swedish Public Service Television SVT. I will shortly describe how different VAAs were designed and what were the reasons behind the different choices. For this purpose, I have interviewed developers from each of the companies mentioned. I will concentrate on the following features:

1. Candidate or Party VAA?
  - a. How were the answers gathered?
  - b. Who is able to take part in the VAA?
2. Statements
  - a. Theoretical background
  - b. The balance between statements and ideological dimensions
  - c. Possible problems in the statements
  - d. Temporal perspectives
  - e. Answer scales
3. Algorithm
  - a. Which algorithm does the VAA employ and why?
4. Different features
  - a. Additional information
  - b. Arguments for and against the statements
  - c. Possibility to skip a statement
  - d. Saliency weight
5. Results
  - a. Format of match
  - b. Real-time results

- c. Possibilities to browse the result

## 2.2. The Finnish Broadcasting Company - Mix of candidates and parties

Finnish VAAs have concentrated on candidates in the past and still, the emphasis is on individual politicians. This is connected to the Finnish electoral system in which votes are given to individual candidates. The cognitive burden has led developers to downplay matching between voters and parties. This is in contradiction with the role of parties in the Finnish political system. Parties are major actors when it comes to using power in the parliament and holding a party line. The Finnish Broadcasting Company's VAA in the last parliamentary election in 2023 consisted of two different sections. The first section matched users with parties and the second one with candidates. VAAs were provided in Finnish, Swedish, English, Russian, Sami, and Arabic. (Yle 2023)

Every party on the party register and every candidate were given a chance to answer the VAA. All in all 20 parties filled in The Broadcasting Company's application. Before the user was able to start searching for the most fitting party or candidate for themselves they needed to choose their electoral district. The number of parties and candidates varies per district. For instance, in the Helsinki district, 18 different parties competed for parliamentary seats. (Yle 2023)

Users were given a chance to answer 14 different statements with "yes" or "no" options when they were searching for the best possible party for them. The candidate VAA entailed 30 statements. (Yle 2023) If users wanted to use both applications they had to answer altogether 45 statements which is a lot of work. One could argue that the application could have matched users with both candidates and parties based on a single set of questions. That would have been simpler for users.

Users answered questions on a four-point Likert scale which didn't entail a "neutral option". (Yle 2023) Eliminating the middle option has been an evolutionary process in The Finnish Broadcasting Company and the problematic nature of the option became apparent in the presidential election 2012. Incumbent president Sauli Niinistö was running against challenger Pekka Haavisto in the second round of the election. According to VAA answers, Niinistö did not hold strong opinions in most of the statements whereas Haavisto was more opinionated. This of course meant that Niinistö was closer to many more voters than Haavisto since the middle option was closer to both extreme opinions. (Ryynänen 2024)

Users could also skip questions but The Finnish Broadcasting Company's VAA did not provide a chance to put weight on the questions that the user deemed most important for themselves. Users were not given additional information about the contents of the statements in the party VAA and the application did not provide arguments for and against the statements. (Yle 2023) The developers' idea was to provide statements that are general and so easy to understand that there is no need for additional explanations. There was additional information available for some of the statements in the candidate VAA. (Yle 2023) The decision to provide additional information was based on a consideration of which were the statements that the users needed most help with.

# Suomen pitää ottaa käyttöön kolmas virallinen sukupuoli.

 Mistä on kyse?  Ohita kysymys



Caption 1: The Finnish Broadcasting Company's VAA employed a four-point Likert scale. The options were totally disagree, partially disagree, partially agree, and totally agree. Source: The Finnish Broadcasting Company.

The statements in both party and candidate VAAs were based on emeritus professor Heikki Paloheimo's (2008) theory of the seven most important ideological dimensions in the party competition in Finland. These dimensions are as follows: 1) Left–Right, 2) Center–Periphery, 3) National–International, 4) Elite–Common people, 5) Finnish speaking–Swedish speaking, 6) Conservative values–Liberal values, and 7) Ecological values–Materialistic values. (Paloheimo 2008, Isotalo 2020) Suuronen et al. (2020) pointed out that Paloheimo's analysis lacked a dimension that has grown in importance in recent years: anti-immigration and pro-immigration attitudes. On the other hand, Suuronen et al. analysis did not include center-periphery and national-international dimensions (Suuronen et al. 2020) The Finnish Broadcasting Company included all the dimensions in its work process of forming VAA statements. At the same time, the company was open to other topical issues that didn't necessarily fit any of these dimensions.



The Finnish Broadcasting Company's party VAA entailed 14 statements of which two were dedicated to left-right, conservative-liberal, center-periphery, ecological-materialistic, national-international and immigration dimensions. Elite-people and bilingual dimensions got one statement. Party VAA seems to be in balance and in line with a common understanding of the relevant and big dimensions in Finnish politics.

The candidate VAA entailed 30 statements. There were two dimensions that had five statements: Left-Right and Ecological-Materialistic values. Topical issues had four statements. By topical issues I mean political issues which were salient at the time of the election but did not fall into a specific dimension. Next in line with three statements were immigration, conservative-liberal, center-periphery dimensions, and regional statements. Regional statements covered issues that were specifically important to different electoral districts. One statement each was devoted to Bilingual, Elite-People, and National-International dimensions. One could argue that there could have been a better balance between different dimensions especially when it comes to the National-International dimension.

VAA's answers were gathered directly from parties and candidates. Both of them were given a chance to explain their stances. (Yle 2023, Yle 2023b) This of course means that the VAA concentrated on the present and future since both parties and candidates were given a chance to change their mind. Both party and candidate VAA employed the Manhattan algorithm which basically meant that they calculated the distance between answers from users and candidates. (Yle 2023b) One major reason why The Finnish Broadcasting Company is still employing the Manhattan algorithm relates to transparency. It is easy to understand because users will get a 100 percent match candidate if they answer exactly the same way to a statement. If an answer differs a notch the match percentage will be 25 percentage points lower and it will reach the lowest point if the answers are extreme opposites. Other algorithms are more difficult to explain to users. (Ryynänen 2024)

The results in both VAAs were provided with percentage points from 0 to 100. Candidates and parties were presented in descending order. While users were filling in VAAs they could also see what kind of impact each answer had on the result in real-time. The users also had a possibility to hide the real-time result bar. (Yle 2023) One reason why the Finnish Broadcasting Company provided a real-time result bar relates to transparency. Users were able to see how different answers affected their result. (Ryynänen 2024)

If users clicked open the page of the recommended party they could read a brief introduction of the party. Text's purpose was to give especially young people a sense of what the most important stances for a party are. One could also read the parties' reasoning for their answers. The candidate VAA entailed the same kind of elements. There was also a result of how the 200 seats of parliament would be divided among parties according to the answers that the user gave. One could also browse which candidates were the best matches in different political fields and which candidates were the best fit within different parties. The result also entailed a chance to go through candidates' arguments for his or her answers, election promises, compatibility in different political topics, and watch a short clip of the candidate. (Yle 2023)

Party VAA was designed because The Finnish Broadcasting Company wanted to provide a convenient tool especially for young voters to get to know what are the biggest differences between parties. This was also a reason why the number of statements was narrowed down to 14 with just two options to answer. (Ryynänen 2024) One could argue that because of the design choices the party VAA was not able to separate parties as well as it should have been. For example, The Greens and The Left Alliance had the exact same answers in the party VAA. A way to tackle this problem would be to provide more statements or options for answering the questions.

### **2.3. Helsingin Sanomat - reforming the algorithm**

Helsingin Sanomat has launched one of the most prominent Finnish VAAs in recent years and the media outlet reformed its application in many ways for the last parliamentary election in 2023. All the candidates in the election had a right to give their answer for the VAA and unlike the other content which is largely behind a paywall, the VAA was free for users. Since candidates' opinions were asked directly this meant that the time perspective of the statement was here and now. First, a user had to choose their home municipality from a list and then had a chance to choose which topics he or she wanted to answer. If the user didn't choose any of the topics then the VAA guided them through the complete list of different statements. The different topics were security, the welfare state, economics, environment, and climate, personal economy and values. (HS 2023) The idea behind the different topics was that users could choose to fill in a "mini-VAA" in their selected topics of interest and match with candidates according to their answers. (Salminen 2024)

The VAA entailed 15 statements about personal values, 4 about the welfare state and environmental issues, 3 about the public economy, and 2 related to national security issues and voter's personal economy. (HS 2023) This of course means that the VAA put a strong emphasis on the statements measuring values of the candidates and users. This was done because of two reasons. First, Helsingin Sanomat was able to create a map of values based on the statements and answers of candidates and users. People were placed on a map that measured two dimensions: left-right and GAL-TAN orientation. The abbreviation GAN derives from the words green, alternative, libertarian, and TAN on the other hand traditional, authoritarian, and nationalist. The second reason relates to young voters. According to the paper, questions about values are more approachable for people who do not follow politics closely than statements about concrete issues. Usually young voters follow domestic politics less than older generations. (HS 2023b, HS 2023c)

Helsingin Sanomat took advantage of Heikki Paloheimo's (2008) analysis of seven ideological dimensions in party competition in Finland. The media outlet also collaborated with researcher Veikko Isotalo who took Paloheimo's work even further. (Salminen 2024) If statements were measured in the same way as the Finnish Broadcasting Company's statements, we can see the left-right dimension was measured with 9 statements. (HS 2023d) Conservative-liberal and ecological-material had 6 statements each and national-international dimension had 4. Topical issues had 3 statements, center-periphery 2 (HS 2023d) and immigration 1. One could argue that there could have been more statements about bilingual issues, immigration, and the center-periphery dimension but this was a journalistic decision made by Helsingin Sanomat.

Users were able to give answers on a five-point Likert scale which included an option to “not agree or disagree” with the statement. (HS 2023) Helsingin Sanomat ended up keeping the middle option available for users and candidates because there might be valid reasons why candidates have not decided their minds on different issues, even if this also gives candidates a chance to give tactical answers. (Salminen 2024)

Helsingin Sanomat VAAs biggest reform concerned their choice of the algorithm. The media company introduced a new algorithm that aimed to match users with candidates according to a statistical method. This method puts more emphasis on value statements and the connection between them. Helsingin Sanomat justified this approach by saying that nobody can foresee what kind of decisions politicians have to make while they are in power and thus it is more important to know what are the values of decision-makers than their stances on specific issues. The new algorithm calculated the distance between users' and candidates' values. (HS 2023d)

One could criticize this approach for a lack of transparency since the function of the VAA is harder to understand than applications that are based on the simple Manhattan algorithm. To Helsingin Sanomat's credit one can say that the media outlet was open about changes in the algorithm and published its source code for everybody to see.

According to producer Juho Salminen, Helsingin Sanomat was able to match users' and candidates' values better with the new algorithm. Another upside was related to development work, as now the company has something to learn from and develop their ideas even further. (Salminen 2024) All in all, there is no one right way of deploying algorithms. Still, the media companies have to make a choice between simplicity and refining the algorithm which might lead to fewer people understanding how the results have been calculated.

When it comes to value-based statements one can argue that issues are also attached to values and you can measure candidate's and users' values with issue-related statements as well. Interestingly, Helsingin Sanomat noticed that 10 of the issue statements measured the same values as the value-based statements. (Salminen 2024) Many times issue statements are easier to understand in the same way than value statements. One example of an understandable issue statement that measures values is as follows: “Finland should introduce a third official gender.” (Yle 2023) While an example of a classical value-based statement is “Christian values provide a good foundation for political decision-making.” (HS 2023) One can criticize that the latter for being open to various different interpretations

Helsingin Sanomat VAA provided additional information for every issue-based statement. Users had to click open a box if they wanted to know more about the statement. On the other hand, there was no additional information for value-based statements. (HS 2023) According to the statistics of Helsingin Sanomat, every third user clicked an additional information box. (Salminen 2024) This gives hope for VAA developers since people do not just click to answer but they do also want to acquire more information from the applications. This means that the applications can function as an educational tool for politics as well.

The results in the VAA were provided with percentage points from 0 to 100 and matching candidates were presented in descending order. Users had a possibility to get to know more about which issues they agreed or disagreed on with the candidates and how candidates

justified their stances. The VAA also provided a value map where users and candidates were placed on left-right and GAL-TAN dimensions according to their answers. According to Juho Salminen (2024) the map gives a good understanding of where voters stand on questions that have separated parties for long periods of time. The VAA also matched users with parties but the result was based on how parties' candidates answered the statements on average. (HS 2023, HS 2023c) Researcher Isotalo (2024) prefers the approach where parties answer statements directly. This is because calculations don't take into account the situations where parties' candidates are scattered on certain issues and because of that the mathematical equation shows that the party has a moderate stance. In these cases, it would be better that a party would clearly define its line even though some of its members might have a different opinion on the issue. In other words, sometimes the average answer misrepresents the party's line.



Caption 2: Helsingin Sanomat provided a value map where users and candidates were placed on left-right and GAL-TAN dimensions according to their answers. The star on the map represents a user's place on the map and other squares parties. Source: Helsingin Sanomat.

Helsingin Sanomat wanted to provide a match with parties, since around half the voters base their voting decisions primarily on parties. For these voters, it is important to know whether their stances match with parties' opinions. Lack of time and resources was the key reason

why the media company did not ask for answers straight from the parties. After all, Helsingin Sanomat reformed its VAA in many ways for these elections. (Salminen 2024)

The VAA also provided a chance to skip statements but there was no chance to put weight on certain questions. Helsingin Sanomat's VAA did not entail the feature of arguments for and against the statement. (HS 2023) VAA developers think it is important to have an opportunity to skip questions since every answer has an impact on the result and if users don't know their stances before answering questions the result is arbitrary. The option of skipping questions avoids the prospect of ending up with a meaningless answer (Salminen 2024)

#### **2.4. Jyllands-Posten/Politiken - same statements for parties and candidates**

One of the biggest Danish media outlets Jyllands-Posten collaborated with another large mediahouse Politiken with its' Voting Advice Application in the last parliamentary election in 2022. This collaboration meant that both media outlets used the same application to serve their audiences. On the front page of the application, users were offered a choice to either start to fill in the application or browse information about candidates or parties. Users could see who they could vote for in their district, how candidates had answered the VAA, and how they introduced themselves. Users could also get to know the basic statistics like average age, educational level, and occupation of each party's candidates. (JP&Politiken 2022)

The Danish electoral system had its impact on the Jyllands-Posten and Politiken's application since it provided the user with a result of matching candidates as well as matching parties . As mentioned earlier it is estimated that 50 percent of the Danes cast a vote to a particular candidate on a party list. The other half gives their vote to a party list as such. (Eiklit 2011) Developers of this VAA say that the application would not be complete if it would just provide a match between users and parties or users and candidates. Then half of the users wouldn't get the result that they are expecting. (Rytgaard 2024)

Another argument for this choice relates to the role of parties in Danish politics. MPs are expected to hold a party line in the parliament which means that parties have a strong role in Danish decision-making. Thus there are strong arguments why VAAs need to provide a match between users and parties. (Rytgaard 2024) One can also argue that it isn't enough to calculate a match between users and parties based on how a party's candidates have answered on average since a party's official line might differ from this result. It is the official bodies of each party that defines their stances when it comes to voting in the parliament.

Jyllands-Posten and Politiken's application entailed 20 statements which candidates and parties had answered as well. This meant that users could see how well their stances matched with different candidates and parties. According to the developers' analysis, the application was able to make a distinction between parties and candidates with just 20 statements. (JP&Politiken 2022, Rytgaard 2024) One reason for going with the small number of statements relates to the short attention span of users. According to the developers people have shorter attention spans than they used to and this forces them to make more compact VAAs. (Rytgaard 2024) There might be cultural differences between countries since The Finnish Broadcasting Company's user tests say that Finns want to fill in a thorough VAA before they can trust the result. Usually, Finnish applications entail 30 statements. (Ryynänen 2024) Jyllands-Posten and Politiken's VAA had the fewest statements among the

compared applications and thus the users' workload in this application was lighter than other VAAs. For example, in the Finnish Broadcasting Company's VAA users had to answer 45 statements before they were matched with the most suitable candidate and party.

The answers for Jyllands-Posten and Politiken's VAA were gathered directly from parties and candidates. Everybody who was running for the parliament could fill in the application and it was available for everybody to use. Since the answers were directly collected from parties and candidates the statements concentrate on the present and the future. (Rytgaard 2024) Jyllands-Posten and Politiken did not take advantage of studies that concentrated on the most relevant political dimensions in the party competition. Developers came up with the statements incrementally. First, the journalists looked at a poll that laid out voters' agendas. That is, which topics are the most important for voters. The higher an issue was on that poll the more questions there were on the topic. Journalists discussed with parties and gathered their thoughts about elections and what they considered to be the most important topic for them at the time. Then political journalists brainstormed and came up with the statements. In the last stage, the VAA developers contacted two experts to review whether there were biases in the statements and whether the statements were ready to be published or not. (Rytgaard 2024)

It is interesting to note that Jyllands-Posten's and Politiken's VAA concentrated heavily on economics with 6 statements. The economic statement entailed questions about retirement issues, inflation and the state's budget. There were 3 statements about education. 2 statements were given to climate and environmental issues, immigration, and social and healthcare topics. The media outlets covered equality issues, defense politics, EU relations, gender issues, and government formation with 1 statement. (JP&Politiken 2022) The reason why the media outlets put a heavy emphasis on the economic statements could be because of Russia's aggression in Ukraine. The war has been the main reason for rising inflation in Europe and this of course concerns people.

There were different principles that Jyllands-Posten tried to apply to their statements. First, the statements had to separate left and right-wing blocks from each other. Then the statements needed to make the same distinction within the blocks. Second, the media outlets tried to have a sensible mix of value-based statements and more specific statements about topical issues. Thirdly, Jyllands-Posten wanted to avoid biases. This basically meant that each side of the block got a possibility to answer "agree" as often as the others. (Rytgaard 2024)

Jyllands-Posten and Politiken employed the Likert scale which entailed five options: totally agree, partially agree, neither-nor, partially disagree, totally disagree. Interestingly, users could choose whether the statements were interesting to them or not: important, neutral, or not important. However, the VAA did not entail the possibility to skip statements. (JP&Politiken 2022) One can argue that the "not important" option has the same role in the application as the possibility to skip questions. Another hand, if users choose many times that the statement is not important for them it is difficult to calculate valid results especially when there are only 20 statements to begin with.

Interestingly, the application entailed additional information about questions and arguments for and against the statements. Users had to click information boxes open in order to read

more about statements. (JP&Politiken 2022) Developers put a lot of effort into making thorough and compact explanations for the statements. Reasoning for this was that especially young audiences are using VAAs and many times they follow less politics than older generations. Jyllands-Posten and Politiken had the idea that the application could serve as an educational tool for younger audiences. Developers used as much time to formulate the questions as to come up with the additional information and arguments. (Rytgaard 2024)

## 10. SU'en på kandidatuddannelser skal omlægges til lån

Hvordan skal spørgsmålet vægtes?

Vigtigt  Neutralt  Ikke vigtigt

Helt enig	Delvist enig	Hverken- eller	Delvist uenig	Helt uenig
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Information om spørgsmålet ^

Fakta: SU'en er 6.397 kr. per måned før skat for en udeboende på en videregående uddannelse. SU'en bør ifølge Reformkommissionen omlægges til et lån for universitetsstuderende på kandidatuddannelsen, så de studerende de sidste to år på uddannelsen i stedet kan låne op til ca. 12.500 kr. per måned. I de øvrige skandinaviske lande er SU'en markant mindre. I stedet kan man optage lån.

For: Staten vil spare ca. 2,1 mia. kr. ved sådan en omlægning. Penge, som kan bruges på at investere i uddannelserne i stedet for. Forslaget vurderes at skaffe 2.900 fuldtidspersoner til arbejdsmarkedet, fordi de studerende ventes at komme hurtigere gennem studierne og vil arbejde mere i studietiden.

Imod: Omlægning kan få unge til at fravælge en kandidatuddannelse. I forvejen er sandsynligheden for at gennemføre en kandidatuddannelse væsentlig større, hvis man kommer fra et velstillet

Caption 3: Jyllands-Posten and Politiken provided additional information about each statement in the VAA. In addition, the VAA also entailed arguments for and against each statement. Source: Politiken.

It seems that Jyllands-Posten and Politiken employed the Manhattan algorithm in their application since the VAA counts distance between users and candidates' views. (JP&Politiken 2022, JP&Politiken 2022b) The Manhattan algorithm was employed because developers tried to make an application that was as simple as possible for users so that everybody could understand how the result was calculated. (Rytgaard 2024) The simplicity of design can also be seen in the small number of statements that provide results on the most fitting parties and candidates.

Once users have answered the VAA the closest matches with candidates were presented on top of the result page. The page used percentage points in order to show which are the best matches with users. Users could click on the candidate's page where politicians can introduce themselves to voters and lay out the three most important societal issues for them in the election. Under the introductory section were candidates' answers to different statements in comparison with users' answers. There was also a list of similar candidates with the candidate the user was studying (JP&Politiken 2022, Statistics Denmark 2024)

The result page also entailed information about how well users matched with different parties. All the parties that had candidates in the election were introduced on the result page. Users could open parties' pages where there was more information about a party. One could read more about for example the history of the party, topical issues for the party, and the party's ideology. There were also answers that parties had delivered to Jyllands-Posten and Politiken. These results were compared to users' answers. There was no real-time result bar for users. (JP&Politiken 2022, Statistics Denmark 2024)

## **2.5 Danish Broadcasting Corporation - candidates under scrutiny**

The Danish Broadcasting Corporation (DR) concentrated on candidates in its VAA. Every running candidate was able to take part in the VAA and answer the same statements as the others. Interestingly, this VAA didn't match users and parties with each other. (DR 2022) This is interesting because approximately every second Dane chooses to cast their vote for a party list instead of an individual candidate. (Elklit 2011) However, there are differences between elections since the candidates are more well-known in the parliamentary and EU elections than in the local elections. The more known the candidates are, the more people choose to vote for candidates directly. (Silberbrandt 2024) Still, the lack of this feature can be seen as a shortcoming of the VAA as it does not provide information that is valid for many voters.

However, DR published stories about each party that was running in the election and these stories were linked to the VAA. They made this choice because the experience from previous VAAs showed that content about the parties did not interest users as much as the candidate content. Thus the developers were led to think that people weren't as interested in party matches as in candidate matches. In the previous VAAs party content had been presented in connection with the candidate results as sort of background information to the candidate (Lomholt Woolridge 2024, Silberbrandt 2024) It remains unclear whether the problem in the party related content was indeed in the subject matter or in the execution of those elements.

There were altogether 25 statements in the DR's application, categorized under different topics. Statements were formulated by DR and the media outlet Altinget which is specialized



in VAAs and Danish politics. The most important underlying principles for these companies were impartiality and broadness of political issues covered in the VAA. (DR 2022, DR 2022b, Silberbrandt 2024) One interesting feature of the collaboration relates to the Danish electoral system. Since snap elections are a constant possibility in Denmark, Altinget has to have 30 statements ready at all times for publishing a parliamentary VAA. (Lomholt Woolridge 2024) Once snap elections have been declared by the prime minister there is usually only three weeks before the actual election day. (Hopmann, Karlsen 2020)

DR and Altinget didn't rely on any scientific analysis regarding the ideological dimensions relevant in Danish party competition when they started to think about their statements. Their process started with journalists who tried to figure out statements that would separate parties at that time. The developers sent the statements to candidates and based on the received answers they prioritized a final list of statements that managed to highlight the differences between candidates while representing a balanced range of issues (Silberbrandt 2024, Lomholt Woolridge 2024)

It is always useful to consider which topics are most widely represented in any VAA. There were 8 different themes represented in the application, of which labor market, economy and welfare issues were covered with 5 questions. Next in line with 4 statements were climate and energy, and international affairs issues. 2 statements handled educational, democratic, and health issues, while law and order was covered only with one statement. (DR 2022) It is important to notice that DR's approach differs from Finnish and Norwegian VAAs as they did not take advantage of studies about ideological dimensions in Denmark. One potential advantage of this approach is that the statements can be more topical than in Finnish and Norwegian VAAs. On the other hand, its pitfall might be that the most important dividing dimensions don't get as much representation as might be in order.

The answers for statements were gathered from candidates directly which means that DR's VAA concentrated on the present and on the future. Users and candidates were given four answer options: Agree - Slightly agree - Slightly disagree - Disagree. (DR 2022) DR has decided to leave out the middle option in order to prevent tactical answering. After all, it is safe to assume that candidates should be able to take a stance on important political questions. Other users on the other hand were given the choice to skip questions if they didn't have opinions about a specific statement or if it was irrelevant to them. (Lomholt Woolridge 2024, DR 2022)


DR has tested other algorithms in the past but so far have decided to stick with the Manhattan algorithm. Their reasoning was similar to that of colleagues in other companies: simplicity and transparency. Transparency is especially important when it comes to such a delicate matter as politics and elections. (DR 2022b, Lomholt Woolridge 2024)

DR's voting advice application did not provide additional information for users but there were arguments for and against each statement, which helped users to make their decisions. Decision on additional information was done because they didn't want to make the interface too text-heavy for the users. Their biggest fear was that if there was too much information on the application people simply wouldn't have filled it in all the way. Interestingly, DR has noticed that a significant number of VAA users click open the additional information boxes.

More so, than with other add-ons across their different services. DR also decided to leave out the option of salience weighting statements. (Lomholt Woolridge 2024)

## Your result

Here you see the six candidates in your constituency who answered the most like you.



**79 % agreement**

**Nanna W. Gotfredsen**  
The moderates  
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Caption 4: DR concentrated on candidates and its VAA matched users with 6 most compatible politicians. Source: DR.

On the result page users could see the six candidates who were the best matches for them. Users could click open the candidate's page where they would see how similar their answers are on different topics. Users could also learn more about the main issues for the recommended candidates and candidates' arguments for their given stances. This was done in collaboration with Altinget. There was no real-time result bar on the VAA. (DR 2022, Silberbrandt 2024)

## **2.6 NRK - parties under scrutiny**

Norway held its last parliamentary elections in 2021 when the left-wing Labour Party gained the most votes. In the lead-up to these elections, Norwegian public broadcasting company NRK introduced a VAA that was heavily focused on differences between parties rather than the candidates. (NRK 2021) Norwegian national electoral system puts heavy emphasis on parties who basically decide which candidates get elected from their ranks if they gain popularity in the election. (Government of Norway 2017)

Interestingly, parties don't get to answer statements by themselves. NRK's journalists follow domestic politics closely and just before parliamentary elections they conclude parties' stances on different topical issues according to their expert analysis. However, NRK's journalists do engage in a discussion with parties about whether the stances set by journalists are accurate or not. In most cases, parties agree with the journalists. The reasoning for this practice is that it eliminates tactical responses which might be tempting for parties in order to gain more popularity. NRK also feels that they have a responsibility to offer accurate answers for their users. (Grønli 2024) On the other hand, NRK's practice doesn't give parties a chance to change their mind ahead of the elections and outside the constraints of daily politics.

All parties were not included in the NRK's VAA. Only the stances of nine parliamentary parties were shown in the NRK's electoral map. In other words, smaller parties were not given the same salience in the application as the parliamentary groups. The choice was made because NRK wanted an easily readable VAA that contained only "relevant information" for their users. This caused a lot of criticism towards NRK and now the company is re-considering its approach regarding the small parties in the next elections. (NRK 2021, Grønli 2024) NRK's design choice was not in line with the Lausanne declaration which supports the idea of inclusion. As stated earlier, in a good VAA every running party and candidate should have the same possibility to take part and the applications should be available for everybody. (Garzia & Marschall 2014)

NRK came up with their statements in close relationship with The Institute of Social Research which is an independent research institute in Norway. NRK works closely with research leader Johannes Bergh who has studied the dividing dimensions in the Norwegian party competition. According to Bergh and NRK, there are six dimensions that separate parties in Norway, and these dimensions are all relevant for the party competition: 1) Left-Right 2) Ecological-Materialistic 3) Center-Periphery 4) Religious-Secular 5) Immigration 6) National-International dimension. NRK forms their statements in line with these dimensions and tries to come up with topical questions as well. (Grønli 2024, NRK 2021b) As one can see the dimensions are very similar compared to Finland.

It is difficult to say which dimensions are emphasized more than others in the NRK's VAA since their statements vary from one user to another. First, the application asks nine questions which are the same for everybody. Based on the answers, the VAA creates an initial prioritization of the parties. Then the VAA takes the user through a set of questions that are most important to each party on that list, starting from the bottom and moving all the way to the top. Then the VAA searches a question where the top two parties have different opinions and poses that statement to the user. The VAA keeps posing questions until it can figure out a result with more than 10% margin between the first and the second party. There is a maximum number of 30 questions asked, but users can also get a result with a smaller number of questions, if their result becomes clear enough. According to NRK, the Left-Right dimension has the most questions since it is the most defining part of Norwegian politics. (NRK 2021b) One reason for this is that Norway's politics has traditionally been based on left- and right-leaning blocks which form governments according to election results. (Hopmann & Karlsen 2020, Aardal & Bergh 2022)

NRK's VAA gave users four options to answer: completely disagree - slightly disagree - slightly agree - totally agree. (NRK 2021) Thus their design choices were similar to The Finnish Broadcasting Company, with the one difference that parties don't answer the questions themselves. Similarly to DR, NRK has left out the middle option, but allows users to skip questions. Their application did not entail the option of using salience weights in the statements as there is no single, definitive way to prioritize one question over others. (NRK 2021) Instead, they support the decision-making of the users by providing ample information about the parties' stances, with which users can try to discern for themselves how important each issue is for the different parties. Users had the chance to skip over questions five times and they could also read arguments for and against the statements. These arguments were presented just next to the additional information box if the users scrolled the page a bit downwards. (NRK 2021). One could argue that NRK's low-threshold way of offering help to their users is a positive thing.

NRK has employed the Manhattan algorithm in their VAA for many years now. Their developers have considered using both the Euclidean and Manhattan algorithm, but have ended up choosing the Manhattan based on equality. According to NRK the Manhattan algorithm is better when it comes to putting the same weight on each of the statements. Another reason why NRK has employed the Manhattan algorithm relates to the question of simplicity and dependability NRK has also published its source code in past years so that users can have a look and scrutinize it. (NRK 2019, NRK 2021b)

NRK did not provide a real-time result bar, but users could see how their answers matched with parliamentary parties after every answer. On the result page, the application showed three parties that were closest to the users' answers. One could also click open a page which showed how well the other parties matched with their answers. Users could also review their positions along the six different dimensions and which statements were taken into account when the results were calculated. One could also read about how big these parties were in the previous elections. At last, there was a section in which the VAA laid out proposals of the smaller parties that might interest the user. (NRK 2021)

11%

## Jeg er bekymret for at dagens skattenivå øker forskjellene.

Argumenter for og imot ↓



Neste →

Caption 5: NRK's VAA told after every answer how the parliamentary parties had answered the same questions as the user. Source: NRK

## 2.7. SVT - three VAAs at once

Sweden's Television's (SVT) VAA in the last parliamentary election of 2022 broke at least one record. Three million users completed the VAA and that is a big number in a country that has a bit more than 10 million residents. (SVT 2022b) Interestingly, SVT provided three VAAs at once since Sweden held three different elections in the same year: municipal, regional, and parliamentary elections. (SVT 2022) This was nothing new to SVT since these three elections have been held at the same time ever since the 1970s. (Riksdagen 2023, Hagevi 2022) I will concentrate here on the parliamentary VAA in order to make a valid comparison to the other Nordic counterparts.

All eight parliamentary parties and their candidates were invited to fill in the VAA. Of course, this meant that many of the small parties were excluded from the VAA. SVT's reasoning for this was that the VAA was built on the basis of pursued policies and parties without representation didn't have a track record in politics. Thus the users could not have estimated how well answers in the VAA matched with past performance if new parties had been allowed to answer the statements. Another reason why SVT did not allow all the parties and candidates to take part in the VAA was related to the workload. (SVT 2022c, Pettersson 2024) The practice of excluding some of the parties is not in line with the Lausanne declaration but on the other hand, it is understandable since Sweden is holding three elections at the same time. SVT's practice has a decades-long tradition so by now criticism towards it has mellowed. (Pettersson 2024)

SVT doesn't take advantage of studies that lay out the main ideological dimensions of the Swedish party competition. The work of forming statements started a year before launching the VAA. SVT's journalists came up with 100 statements which they then narrowed down to 50. After that, SVT asked the University of Gothenburg's Som Institute to test the statements among citizens to see whether these questions separated parties' supporters from each other or not. When the results were clear, SVT tried to form a set of statements that would be balanced in a way that all the important policy areas would be covered and the statements would lean in different directions in a balanced way. (SVT 2022, SVT 2022c, Pettersson 2024) The company also took advantage of Som Institute's annual survey which has studied how Swedes think about different societal issues since 1986. (Pettersson 2024)

In the last parliamentary VAA, SVT had 35 statements all in all, and because they collected answers to these questions directly from the parties their VAA concentrated on the present and on the future. (SVT 2022) Rather than focusing on the ideological dimensions, they decided to concentrate on people's attitudes toward societal issues. According to Som Institute's survey, the most important societal issues for Swedes in 2022 were the following topics in this order: 1) Law and order 2) Healthcare 3) Environment/energy 4) Education 5) Integration 6) Social Policy 7) Economy 8) Pension/Elderly care 9) Democracy/Human right 10) Labor market 11) Swedish foreign policy 12) Taxes 13) Family/childcare 14) Governance 15) Housing/construction. (Som Institute 2022)

When the statements of the VAA are put under scrutiny one will notice that they don't follow the order of what people think were the most important issues or problems in Swedish society. There were up to 7 statements about taxes and 6 about energy and the environment. 3 statements were about law and order and social policies issues. Healthcare,

education, integration, foreign policy, and governance were given 2 statements each. Economy, democracy and human rights, labor market, family and childcare, and housing and construction were given only 1 statement each. On top of these, SVT asked the users an additional question in which they could choose the most important topics for themselves. One possible reason why the statements didn't follow the order of citizen's concerns, is that many times it is difficult to come up with statements that are simultaneously highly important as well as divisive.. Many times parties and candidates have a tendency to agree on the most important issues.

SVT employed 3 different kinds of answer scales. Users, parties, and candidates could answer most of the questions with four options: very bad suggestion, pretty bad suggestion, pretty good suggestion, very good suggestion. SVT did not provide the middle option for most of the questions since they wanted to encourage users to express their opinions. If they didn't have one they could also skip the statement. Four questions had the following options available: much less, little less, same as today, a little more, and much more. As one can guess these questions measured quantities like the following statement: "How much should high-income earners pay taxes?" (SVT 2022, Pettersson 2024)

SVT employed the Manhattan algorithm in their VAA. In other words, the application measured how close or far parties' and candidates' answers were from users' answers. However, the algorithm wasn't that easy since SVT added salience weight to their VAA. Users, parties, and candidates could choose which policy areas and statements were the most important for them and then the VAA put a heavier weight on these questions than others in calculating the result. (SVT 2022c) Their reasoning for this decision was to compensate for the limited number of questions that were available on any given topic.

SVT's VAA provided also additional information for users. Under every statement, there was a short introduction that laid out the political context of the question with little or no threshold for the users. Users could see the box of additional information without clicking it open. SVT didn't write arguments for and against the statements as it would have required active choosing of political arguments by the public broadcasting company and they were afraid that this could have been viewed as a biased action. (SVT 2022, Pettersson 2024)

The application did not have a real-time result bar but users could read how the parties had answered different statements just below the questions. Users had to click a party's answer open if they wanted to see them. The answers were hidden so that they wouldn't have an impact on users. However, if users wanted help with a statement they could open the bar in which parties gave their stances to the statements. This feature was especially for those who lacked knowledge about politics. (SVT 2022, Pettersson 2024)

SVT's VAA provided a match with both the parties and the candidates which is understandable since many voters cast their vote for both. The final results were given as percentage point matches with different parties. Users had a chance to browse parties' answers and read how they argued their stances. Parties had also written their solutions to different societal problems. Users could also choose their home municipality on the result page and then the VAA provided a match with candidates from their own voting district. If users clicked open the candidates page they could see how the candidate had answered different questions and also read background information about the candidate. (SVT 2022)





## The Liberals



PARTY LEADER:  
**Johan Pehrson**

IN THE  
GOVERNMENT:  
**No**

RIKSDAG  
MANDATE:  
**20/349**

### Why should voters vote for you?

If you are a liberal and want a bourgeois government, there is only one party: the Liberals. We are needed for schools with a focus on knowledge. For integration and the fight against parallel societies. For Sweden to become the world's first climate-neutral welfare nation. Because more companies create wealth. For equality and tolerance. For strong social safety nets. Do you agree - choose the Liberals.

Caption 6: There was more information about matched parties and candidates on SVT's VAA. Many other media companies also provided more information about candidates and parties on the result page. Source: SVT.



### 3. CONCLUSIONS

#### 3.1. Electoral systems have a clear impact on VAAs in the Nordic countries

One thing is certain when it comes to the Nordic Voting Advice Applications. There is a clear need for cognitive shortcuts in the Nordic countries and this is because there are so many alternatives available for voters. Still, some of the electoral systems are more demanding for voters than others. A Finnish voter has to decide which candidate and party to vote for, which means that there are hundreds of options available for citizens. (Ministry of Justice 2020) In other Nordic countries, people can just cast their vote to a party list if they want to and in Norway there are only theoretical chances that votes for individual candidates would change the order of candidates on a party list. But weakening ties between citizens and parties as well as a large number of parties increase the likelihood of especially young people needing help with their decisions in Norway as well. (Hopmann, Karlsen 2020, Aardal & Bergh 2022)

Denmark and Sweden are somewhere between Finland and Norway. In Denmark every second voter chooses to cast their vote for an individual candidate and comparatively high voting turnout tells that there is demand for services which help people make up their minds. (Eiklit 2011) In Sweden, three elections at once creates a huge cognitive burden for voters and only around a quarter of the voters cast a vote for an individual candidate. At the same time, there is a similar phenomenon underway in Sweden as in the other Nordic countries. People have weaker ties with parties than before which means that they might vote for different parties from one election to another. (Riksdagen 2023, Hagevi 2022, Statistics Sweden 2023)

It's no wonder that many of the interviewed VAA developers claim that voting advice applications are one of the most important journalistic products in the elections. (For example Ryyänen 2024, Pettersson 2024) One fact to back up this claim is the sheer numbers of VAA users across the different Nordic countries. For instance, 57 percent of the Finnish voters used at least one VAA in the last elections and in Denmark, the number was 63 percent. This, of course, means that these applications create a lot of traffic to media outlets' online platforms. (Statistic Finland 2023, Sillberbrandt 2024, Wessel Tromborg 2024) Another important fact is that VAAs are the number one information source for young voters in the Nordic countries. This means that media outlets can reach young people and VAAs can work as an educational tool for young audiences about the differences between the political parties. Media outlets should be aware of this chance and provide valuable information for young people in order to keep them on board in a democratic society. Thirdly, VAAs are a source of news for media companies since most of the candidates and parties provide answers to their questions on topical issues. Thus media outlets can take advantage of these answers for example in election debates. (for instance Salminen 2024, Ryyänen 2024)

There is a clear connection between the design of VAAs and their respective electoral systems. Finnish VAAs have from the beginning concentrated on matching users with candidates, since voters have to make up their minds about their favorite candidate. Previous research has also suggested that citizens use VAAs more to find suitable candidates for them than to match themselves with the most suitable party. (Isotalo 2024) In

recent years, there have been more and more examples of VAAs that attempt to bring the parties more as a part of the equation. Parties and parliament groups have a strong position in Finnish politics when it comes to defining the party line in the parliament. One of the first media outlets that concentrated on parties in their VAA was Huvudstadsbladet in 2019. (HBL 2019) NRK, on the other hand, has concentrated on parties in the past because parties have a stronger foothold in the parliamentary elections than they do in Finland. SVT and Politiken/Jyllands-Posten have provided matches with candidates and parties since voters can cast their vote for both of them. (NRK 2021, SVT 2022, JP&Politiken 2022) DR's choice to concentrate on candidates can be interpreted as a shortcoming of the VAA in terms of providing valuable information for the electorate.

### **3.2. How well do Nordic VAAs follow the principles of the Lausanne declaration?**

All in all, the quality of the Nordic VAAs is high even though they differ from each other. In most cases, they follow the principles of the Lausanne declaration laid out by VAA researchers back in 2013. There are also a few exceptions when it comes to the features of the VAAs. If we first look at the availability of VAAs, we can notice that some of the applications have lower thresholds than others. The Finnish Broadcasting Company's VAA has the lowest threshold for parties, candidates, and users. All the candidates and parties were allowed to answer the statements as was the case with Helsingin Sanomat's VAA as well. One thing that sets The Finnish Broadcasting Company apart from Helsingin Sanomat is the language options. Users could complete the Helsingin Sanomat VAA only in Finnish whereas The Finnish Broadcasting Company provided their VAA in Finnish, Swedish, English, Russian, Sami, and Arabic. (Yle 2023, HS 2023)

Other media companies had bigger issues with relatively a higher threshold than Helsingin Sanomat. Only parliamentary parties were taken into account in NRK's and SVT's VAA which of course meant that users couldn't compare their answers with numerous small parties. SVT provided its' VAA only in Swedish and NRK in two official Norwegian languages. Every running candidate was able to take part in Jyllands-Posten/Politiken and DR's VAA but the media companies provided the application only in Danish. (Pettersson 2024, Grønli 2024, Lomholt Woolridge 2024, Rytgaard 2024)

The Nordic media outlets had two different approaches to statements. The Finnish media outlets and the Norwegian Broadcasting Corporation approached statements from an ideological dimension angle. These media companies took advantage of studies on which ideological dimensions are relevant for party competition in their countries. Other Nordic VAAs approached statements from voters' point of view. These media companies paid attention to surveys that told how important different political issues are for citizens. (For example Rynnänen 2024, Salminen 2024, Pettersson 2024, Grønli 2024, Rytgaard 2024) There might be different consequences from these approaches. Ideological dimensions might work as a more suitable tool providing information about the most important differences between parties. On the other hand, surveys about the most important topics for citizens could be a better tool for forming topical questions. Different starting points don't necessarily mean that the end products would differ that much from each other but developers should be aware of their approaches' possible consequences.

	Finnish Broadcasting Company		Helsingin Sanomat	NRK	SVT	DR	Politiken & Jyllands Posten
	Candidate VAA	Party VAA					
Who fills the information	• All candidates	• All parties	• All candidates	• Parliamentary parties	• Parliamentary parties and their candidates	• All candidates	• All candidates • All parties
No. of statements	30	14	30	max. 30	35	25	20
Types of questions	• Based on ideological dimensions • Both value & issue-based	• Based on ideological dimensions • Both value & issue-based	• Based on ideological dimensions • Emphasis on value-based	• Based on ideological dimensions • Both value & issue-based	• Mostly issue-based questions	• Mostly issue-based questions	• Mostly issue-based questions
Scales used	• 4-point Likert	• Yes/No	• 5-point Likert	• 4-point Likert	• 4-point Likert, 5-point Likert	• 4-point Likert	• 5-point Likert
Additional information	• Yes	• No	• Yes	• Yes • Arguments for and against statements	• Yes • Parties' answers can be clicked open	• No • Arguments for and against statements	• Yes • Arguments for and against statements
Algorithm	• Manhattan	• Manhattan	• Manhattan with modifications	• Manhattan with modifications	• Manhattan	• Manhattan	• Manhattan
Skipping / salience weighting	• Skipping, but no salience weighting	• Skipping, but no salience weighting	• Skipping, but no salience weighting	• Skipping, but no salience weighting	• Skipping and salience weighting	• Skipping, but no salience weighting	• Salience weighting, but no skipping
Displaying of results	• Real-time but can be hidden • Browsable results	• Real-time but can be hidden • Browsable results	• No real-time results • Browsable results	• No real-time results • Parties' answers after each response • Browsable results	• No real-time results • Browsable results	• No real-time result • Browsable results	• No real-time results • Browsable results

Caption 7: The Nordic VAAs in comparison. Many media companies don't employ salience weights any more. Source: Hannu Tikkala.

VAAs had different numbers of statements. Minimalists among the Nordic outlets were the Danish companies. Jylland-Posten's and Politiken's VAA entailed only 20 statements and DR coped with 25 statements. Finnish and Norwegian outlets had 30 questions and SVT's VAA entailed 35 statements. There might be cultural differences between countries since developers in Denmark have noticed that users' attention spans are getting shorter. On the other hand, The Finnish Broadcasting Company's developers have observed that Finnish users want to get a sense of a thorough exercise from their VAA. This helps them to believe that the application is actually able to provide a valid result for them. (Ryynänen 2024, Sillberbrandt 2024, Isotalo 2024) According to the developers, the number of statements these VAAs had was enough to separate parties from each other. There was one exception and that was The Finnish Broadcasting Company's party VAA which entailed only 14 statements with yes and no answer options. This meant that The Left Alliance and Green League had the same answers to all the questions and users could not make a difference between these two parties. (For instance Rytgaard 2024, Ryynänen 2024)

Most of the VAAs entailed issue-based questions but there was one exception since Helsingin Sanomat emphasized value-based statements. Their argument was that these statements are more approachable for young audiences than political issues. The media outlet also emphasized that it is more sensible to compare users' and candidates' values with each other since nobody knows what will be the most important issues in the next term. (Salminen 2024) On the other hand, value-based questions might be more ambiguous than questions about concrete issues.

NRK was an exception among the Nordic media companies in terms of the temporal perspective. NRK positioned parties' stances on the VAA by themselves based on their past behavior. In this way, parties were held accountable for their actions. (Grønli 2024) On the

other hand, parties did not have a chance to change their mind or tell their position without the constraints of daily politics which many times requires compromises with other parties.

Most of the Nordic media outlets employ the four-point Likert scale as their answer options. In other words, the answer options don't entail the option to answer "don't agree nor disagree" with a statement. Only Helsingin Sanomat and Jyllands-Posten/Politiken's VAA had that option. Reasoning for the most common practice was more or less the same in different companies. Developers can expect candidates and parties to have stances on different issues and when it comes to users, they have the option of skipping questions if they aren't sure about their opinions. This is because answers in the middle also have an impact on the way that candidates and parties are matched, unlike the skipping of statements. On the other hand, Helsingin Sanomat argued that the middle option might sometimes be a more honest option for candidates. (Salminen 2024, HS 2023) It is hard to say which practice is the best one, but one can be more critical towards Jyllands-Posten's and Politiken's VAA which had only 20 statements and because of that the application did not provide the users a chance to skip statements. The application assumes that users have answers to all questions which might be quite demanding for users.

Another thing that was mentioned in the Lausanne declaration related to salience weights. The Nordic VAAs differed on whether they employed salience weights or not. For example, The Finnish Broadcasting Company, Helsingin Sanomat, DR, and NRK did not provide any salience weight whatsoever. (Yle 2023, HS 2023, DR 2022, NRK 2021) On the other hand, Jyllands-Posten/Politiken and SVT did offer a chance to emphasize certain questions or topics over others. (JP&Politiken 2022, SVT 2022) Media companies have noticed that not that many people use salience weights when they use VAAs. The question remains, whether media companies should nevertheless provide this option for users since it empowers them to underline issues or topics that are important to them? Instead of studying user behavior developers could make a normative choice. (Isotalo 2024)

There are two different developments in the Nordic VAAs in terms of algorithms. Most of the media companies stick with the Manhattan algorithm since it is easy to understand and explain to audiences. Developers think that the simplicity of algorithms relates to transparency since users have a better understanding of how the result is calculated. (For example Ryyänen 2024, Lomholt Woolridge 2024) Some of the media companies have started to develop their algorithms further. Prime examples are Helsingin Sanomat and NRK. Helsingin Sanomat wants to emphasize value-based questions in the result so that it can place candidates and users on a value map. On the other hand, NRK wants to make sure that the company's VAA can separate parties from each other and provide the best possible match for their users. This is done by providing different statements to different users. For example, if there is a user who has the same match with two different parties, NRK's VAA will prompt a question for the user in which these two parties' stances differ. (Salminen 2024, Grønli 2024) There is no clear answer to which is the best way of serving audiences and both approaches have their pros and cons. For NRK's and Helsingin Sanomat's defense one can say that the media companies have been open about how their algorithm works and they even published their source code. When many of the VAA developers are talking about transparency it has more to do with how easy the matchmaking process is to understand.

The result pages did not differ so much from each other. Each of the VAA provided matches with parties or candidates with percentage points. All the VAAs also provided additional information about candidates and parties. Most of the developers understood that VAAs can work as educational tools for young audiences who consume these applications more than older generations. This was the reason why all the VAAs provided additional information about statements as well. There was one difference between VAAs when it comes to results: The Finnish Broadcasting had a real-time result bar on top of the statements all the time so that users could see what kind of impact answers had on the result. Other companies were afraid that the bar would have an impact on users' answers. For example, SVT hid parties' answers but users were able to click them open if they wanted to do that. That way, users could see how different parties argue their stances on different issues. (Yle 2023, SVT 2022, Pettersson 2024)

### **3.3. What the future holds for VAAs?**

There is an easy answer to the question of VAA's future: they are here to stay for the foreseeable future. The reason is also easy to understand since everybody benefits from VAAs. Candidates can promote their stances in the elections, media companies attract people to their online platforms and voters get ideas about who to vote for. (Isotalo 2024) Nowadays, there are more VAAs available for users because development work requires fewer resources than in the past. This could be a good thing for democracy since VAAs will become more diverse. On the other hand, if polarization in societies continues it could be that people will only gravitate towards the VAAs that confirm their presumptions. (Silberbrandt 2024)

It is also interesting to notice that VAAs have been here for a while. The Finnish Broadcasting Company released its first VAA in 1996 and that was almost 30 years ago. Some of the Finns who started to use the application back in the mid-90s are now turning 50. (Isotalo 2024) Even though the initial idea of the VAAs still applies, many things have changed since then. The number of users has increased steeply and applications are more sophisticated than in the past.

Artificial intelligence (AI) might have a huge impact on VAAs. Some of the media outlets have taken first steps with AI in their election coverage. For example, the Swedish tabloid Aftonbladet released "Valkompisen" (Election Friend) just before the EU elections in 2024. The so-called "Election Friend" was a generative AI that was ready to answer users' questions about the elections. It based its answers on an archive that was verified by Aftonbladet's journalists and technology was provided by OpenAI who has developed perhaps the most famous AI application called ChatGPT. However, the Election Friend did not provide matches with candidates or parties but users could ask questions like "What are the biggest differences between Social Democrats and Sweden Democrats in immigration policy proposals" and then the Election Friend provided answers. (Aftonbladet 2024)

One problem with this approach is that usually, only knowledgeable users have the interest and ability to ask such in-depth questions from the AI. Citizens with less knowledge about politics and no party affiliation often lack the ability to ask questions in a way that would provide meaningful differences between candidates and parties. This kind of tool might be more useful for people who already know a lot about politics. (Isotalo 2024) Another problem

is reliability. Media companies have a big responsibility when it comes to developing VAAs since millions of people use them and there is evidence that VAAs actually influence people's voting behavior. If media companies start to use AI in their VAAs they have to be sure that it doesn't make mistakes, as such mistakes might have an impact on the election result. After all, the quality of VAAs is measured by the validity and accuracy of the advice the application provides. (Wessel Tromborg 2024, Isotalo 2024) Another issue is the lack of transparency regarding how the AI produces results and makes suggestions. Artificial Intelligence does not "think" in the same sense as humans, and it is near impossible to accurately describe how it arrives at the conclusions it does. Thus it is up to the user to discern whether the AI-produced results are useful for them or not, and this would be particularly difficult for the users who are not very knowledgeable about politics.

At the moment, the interviewed researchers and developers believe that AI could replace or add new features to VAAs. For example, AI could provide additional information about the statements and context to how things are going in the society at that point. It could also tell the users about the different arguments there are for and against different statements. It might be possible to provide users a chance to ask follow-up questions about parties' or candidates' stances from an AI if they want to know more about certain topics. (Ryynänen 2024, Wessel Tromborg 2024) AI could also help media companies go through candidates' and parties' arguments and make more thorough comparisons between them. (Isotalo 2024) Another way of utilizing AI relates to the personalization of the VAA experience. With the help of AI, developers could form far more statements, and different questions could be posed to users according to their preferences. (Grønli 2024) Despite having many high-level ideas about what AI could do in the future, there is no clear answer to how they could or should be realized in practice.

There are also other possible ways for developing VAAs in the future. At least some of the Finnish developers have thought about constantly updating VAAs. In this way, people could follow how the parties and politicians think about topical issues all the time. The media outlet Jyllands-Posten has some concrete ideas about this approach as well but they haven't released their VAA yet. (Isotalo 2024, Wessel Thomborg 2024) AI might come handy in developing this kind of "updated VAA". AI could go through different legal proposals within the parliaments and see whether politicians have voted for or against the proposals. It could also create statements entailing many proposals regarding a single topic, place MPs on a scale and match users with politicians based on the answers (Silberbrandt 2024) Even though AI could do many of the things that journalists are doing at the moment there should still be someone in charge making sure that the statements, parties' stances and matches between the two are solid. (Pettersson 2024)

Parties are becoming more professional when it comes to answering questions in VAAs. There are signs that parliamentary parties conduct surveys about VAA statements in order to answer them in a way that would please their supporters. Sometimes parties also provide guidelines for the candidates about how they should answer some of the questions. (Rytgaard 2024, Silberbrandt 2024) This of course diminishes a candidate's individual agency but on the other hand, tells a lot about what kind of party line the candidates have to follow if they get elected. If this development starts to undermine the validity of VAAs there are two ways for media companies to respond. They can choose to provide only party-based VAAs or place parties on the answer scale by themselves.

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