



BACHELOR THESIS

Unmasking evidence-based policymaking:

A comparative case study of civic epistemologies concerning pandemic mask use in Austria and the Netherlands

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Abstract

This comparative case study explores the factors explaining policy variation between Austria and the Netherlands concerning public mask-wearing during the COVID-19 pandemic. The framework of civic epistemology is applied to create a deeper understanding of both explicit and implicit dynamics of the evidence-based policymaking process. The Austrian COVID-19 taskforce and the Dutch Outbreak Management Team play a central role as expert advisory committees. A systematic analysis of, inter alia, expert committee meeting reports, policy recommendations and media publications identifies the most relevant elements influencing national policy contents and cross-national differences. These elements include (1) differences in form and substance of expert assessment, (2) the varying influences of formal and informal relationships in the science-policy nexus, (3) differences in relationships with society at large as reflected in expectations of public behavior as well as public pressures, and (4) variations in external circumstances like shortages in mask supply. In particular, results reveal significant differences in the position and independence of expert committees, the highly divergent characteristics of evidence use and, consequently, of expert recommendations for policy, as well as an observed effect of public pressures that equalizes national policy differences.

Abbreviations

BMSGPK Bundesministerium für Soziales, Gesundheit, Pflege und Konsumentenschutz. Federal

Ministry for Social Affairs, Health, Care and Consumer Protection (AT)

CE Civic epistemology

Clb Centrum Infectieziektebestrijding. Centre for Infectious Disease Control (NL)

EBP Evidence-based policymaking

FFP2 Filtering face pieces, type 2

ICU Intensive care unit

MUV Medical University of Vienna

RIVM Rijksinstituut voor Veiligheid en Milieu. National Institute for Public Health and

Environment (NL)

OMT Outbreak Management Team (NL)

OSR Oberster Sanitätsrat. Uppermost Sanitary Council (AT)

VWS Ministerie van Volksgezondheid, Welzijn en Sport. Ministry of Health, Welfare and

Sports (NL)

WBSC Wissenschaftlicher Beraterstab COVID-19. Scientific Advisory Committee COVID-19

(AT)

WHO World Health Organization

1. Introduction

1.1. Science and Policy in the COVID-19 Pandemic

"Why, in progressive, rational, Enlightenment societies, do the same scientific facts and technological artifacts so often elicit such different political responses?"

Sheila Jasanoff (2005, p.270)

Few events in recent history have begged this question so ostensibly as the current pandemic. From its onset, the global health crisis around COVID-19 has entailed a governance crisis as well (Serikbayeva, Abdulla, & Oskenbayev, 2020). It poses a unique challenge to individuals and societies, as well as serious dilemmas for experts and governments in responding to it. Policy makers have faced particularly tough choices weighing public health concerns against other societal interests. In an effort to slow down or even stop the spread of viral infections, the last one and a half years have been characterized by drastic restrictions of personal freedoms and social life in many parts of the world.

In order to make these decisions in an informed and justified way, policy makers have to a large extent drawn on expert advice. Science is needed to solve the issue at hand, and ignoring it can have devastating consequences: if Chinese authorities had acted only 5 days earlier on arising evidence of the emergent virus, the global COVID-19 health crisis would effectively have been averted by nipping it in the bud (Zhang, Chen, & Zhao, 2020). Hence, virologists, epidemiologists, as well as other medical experts play an important role in shaping policy responses to COVID-19. Although some have even been given emergency powers of decision-making themselves (Windholz, 2020), scientists have typically been invited to take seat in advisory expert committees. With longer duration of the pandemic crisis, the consultative role of experts from several other scientific fields also increased. The COVID-19 crisis illustrates the dependance of governments and policymakers on scientific experts to create appropriate policies.

Yet even though scientific evidence is central in combating the pandemic in a strategic and well-informed way, there are vast differences in how evidence is translated into actual policy. For example, since the rise of the pandemic, there has been considerable variance around the globe in whether, where and for whom the wearing of facial masks is obligatory or advised. While in the beginning it was unclear how exactly Sars-CoV-2 particles would behave, virologists could build on existing knowledge of the spread of previous coronavirus variants, influenza and other (respiratory) viruses. They quickly recommended the use of facial masks among the general population as a precautionary measure to

prevent more infections (Greenhalgh, Schmid, Czypionka, Bassler, & Gruer, 2020; Javid, Weekes, & Matheson, 2020). At the same time however, other experts warned that resulting shortages could cripple the safe provision of health care (Wu, Huang, Zhang, He, & Ming, 2020). Accordingly, also the World Health Organization (WHO; 2020b) was hesitant at first, emphasizing the need to reserve masks for medical professionals. In early June 2020, the WHO officially changed its advice to embrace and promote mask-wearing among the world's general population (BBC News, 2020). Today, after the specific circumstances of COVID-19 have received ample expert attention, there is a strong tendency within the scientific community to embrace masks as at least *helping* to decrease viral spread: in a meta-review, Ortelan and colleagues (2021) find that out of 93 scientific (bio)medical publications issued in the first half of 2020, 72 show results favorable to public use of even simple cloth masks. This is in contrast with 17 studies showing mixed or unclear results, and only four opposing instances.

Many countries consequently adopted mask-wearing policies in a timely manner, whereas others remained hesitant. Two cases that differ considerably in their mask-wearing policy are the Netherlands and Austria. Going against WHO recommendations at the time, Austria was very quick in mandating mask-wearing in public indoor venues on March 30, 2020 (Deutsche Welle, 2020). The Netherlands was more reluctant but required mask use in public transport as of June 1, 2020 (NOS, 2020c). After issuing an urgent advice to wear masks in all public indoor places, an obligation to do so was finally introduced per December 1, 2020. Meanwhile, since January 25, 2021, Austria also requires the use of FFP2-masks (filtering face pieces) which, contrary to cloth or surgical masks, do not only decrease the risk for bystanders by containing viral material within the mask, but also protect the wearers themselves by filtering out at least 94% of aerosols from surroundings (Huet, 2021). By the time FFP2-masks in public places were mandatory for the general population of Austria, labor unions in the Netherlands were still pleading their national government for FFP2-masks to be provided to medical staff, as not even personnel handling confirmed COVID-19 patients were standardly supplied with them (Te Lintel Hekkert, 2021).

1.2. Understanding Evidence-Based Policy Variance

So, which factors explain these considerable differences in mask policy? The present research adds to the academic knowledge about policy creation by examining the formal and social processes and circumstances of evidence-based policymaking (EBP). Insights on relevant EBP mechanisms are obtained through a comparative case study of Austrian and Dutch mask-wearing policies. This entails the qualitative analysis of policy documents, expert advice as well as other relevant information collected from newspapers or governmental websites. A sound understanding of the factors determining evidence-based policies is highly relevant for public administration studies. This research

contributes to that by examining the COVID-19-related civic epistemologies of both countries, and by providing idiographic explanations of how the national mask policies came to be. In the interest of protecting democracy and keeping technocratic developments in check, the influence and power of non-elected experts in the case of the pandemic warrants close scrutiny both politically and academically (Windholz, 2020).

Moreover, this thesis is societally relevant: in the interest of the general public being able to hold governments accountable, this approach can illuminate and help understand the specific choices made by Austria and the Netherlands regarding pandemic response. In terms of evaluation of policy (processes), a governments' self-awareness of civic epistemology (CE) dynamics, which is furthered by direct comparison (Jasanoff, 2005), helps to understand both strengths and weaknesses: shining a light on otherwise often invisible dynamics in the science-policy nexus opens up the possibility to examine and, if desired, revise or renegotiate implicit traits of national CE cultures. That includes (in)formal practices but also institutional landscapes. This can improve future policies, inform emergency protocols as well as help identify and surmount challenges in other policy areas.

While examining the differing approaches in these two countries, several similarities notably increase the overall comparability. For example, when compared on a global scale, cultural propensities of these two countries are relatively alike: think of the role of close physical contact in social life, a level of carefulness or fear of infection, or how rule-abiding a population is. Moreover, comparable economic capacities are relevant because the mandatory use of facial masks can be costly to a state and/or its inhabitants. The first COVID-19 infections in both countries were officially registered within two days in late February, 2020. Keeping in mind the population sizes of about 9 million in Austria and 17 million in the Netherlands, by May 2021, registered COVID-19 infections covered about 7% of the population of Austria, with 0,11% dead, and 9% of the Netherlands, with 0,10% dead (WHO, n.d.-a; n.d.-b). Despite some variance, pandemic progression roughly adheres to similar general trends in both countries. Furthermore, the political systems allow for a meaningful comparison to be made: both countries are representative democracies, with liberal-conservative parties dominating a broader governmental coalition at the time. In this specific policy field, both countries are centrally administrated, and policymakers were supported by expert committees specially tasked with giving regular advice on COVID-19.

It is widely assumed that scientific evidence is directly implemented into governmental policies (Baekkeskov, 2016; Jasanoff, 2005; Parkhurst, 2017). But as one might then expect more uniform policies as a result, this technical-rational model does not add up with the observed policy variance. One possible explanation could be offered by differently rated values (Baekkeskov, 2016; Donovan,

2021; Parkhurst, 2017). But this model is limited as it implies an indifference of governments towards preventing disease, lockdowns or both. As mentioned, expert committees have a crucial role in relaying scientific evidence to policymakers. Their specific expertise, the selection, interpretation and communication of evidence, and the relationship between advisors and policymakers are all likely to be influential. Moreover, policy could be affected by the relationships that society holds with both government and science. These and more potentially influential factors are summarized under the framework of civic epistemologies (Miller, 2008). This third model will be used to answer the central research question of this thesis, which reads:

Which factors explain the differences between the Netherlands and Austria in evidence-based policy concerning public mask-wearing during the COVID-19 crisis until March 2021?

To answer this question and facilitate an in-depth understanding of the relevant mechanisms, this paper will be structured in the following way. First, an overview of the most relevant applicable theories of EBP and how they explain policy variance will be given. Thereafter, a discussion of the operationalization of the presented theory and the methodology applied will ensue. Next, the central analysis of the respective civic epistemologies of both countries in the context of COVID-19-related mask-wearing will be presented. In the final section of this paper, the findings will be discussed and related back to the theoretical framework introduced in the following section.

2. Theory

In this section, the two most common models of EBP will shortly be discussed along with their expected shortcomings. This will serve to better grasp the general academic discourse and set the scene for the introduction of a third theoretical model, civic epistemology, which will later form the basis for analysis. This chapter will then proceed by examining civic epistemologies in greater detail and discerning several dimensions relevant to policy variance. Concludingly, four hypotheses are presented.

2.1. Models of EBP

2.1.1. The Technical-Rational Model

One dominant, basic assumption is that science is neutral (Parkhurst, 2017). Indeed, the technical-rational model of EBP assumes that objective knowledge is directly translated into similarly objective policy (Baekkeskov, 2016; Jasanoff, 2005; Owens, 2015, as cited in Donovan, 2021). However, the relationship between science and policy is not factually this straightforward. If science is indeed neutral and intermediating factors in EBP absent, the observed variance in policy is inexplicable. As long as

scientific insights are not inconclusive or highly contested within the academic community - and thus not neutral in the first place -, a greater similarity of policies would be expected. As stated above, a search of the evidence available at the time shows that even though there are some mixed results, the use of masks per se is and was not highly contested but generally recommended by scientists (Javid et al., 2020; Greengalgh et al., 2020; Ortelan et al., 2021). On the contrary, it was recommended for medical professionals treating patients with COVID-19, who therefore ran high risks of infection themselves (WHO, 2020b). Hence, there must be other factors at play that the technical-rational model does not account for. A more intricate theory is therefore needed to explain the occurred policy variance.

2.1.2. The Value Model

Oftentimes, values interfere both in the making of science and in creating policy (Baekkeskov, 2016; Donovan, 2021; Miller, 2008; Parkhurst, 2017). The value model assumes that evidence is cherrypicked to justify pre-determined policies - indicating "policy-based evidence" instead of evidencebased policy (Owens, 2015, as cited in Donovan, 2021; Parkhurst, 2017). Policy variances can thus be understood in terms of differing or conflicting values when governments balance different societal values, needs and risks. This line of reasoning could fit the present case to some degree: as we have seen, a global mask shortage forced decision-makers to prioritize medical staff over the general public when it came to mask-provision. Because of limited availability and the value-based choice to prioritize these professionals, evidence warranting public mask use might have been disregarded. Contrary or mixed evidence on mask use could have been highlighted to put the public at ease. But shortages did not apply to (improvised) cloth masks, which scientists advised instead (Javid et al., 2020; Ortelan et al., 2021). However, compared to many other measures that were taken at the time – and that restrict economic activity as well as civic liberties more drastically – masks entail relatively small societal costs. Because most governments highly value economic welfare, if not civic liberties, it follows that they would prefer to maximize the effects of less invasive measures like mask-wearing. The economic sector, individual citizens, and policymakers would likely rather choose mask-wearing over lockdowns. In the absence of malicious intent or a conscious choice to let the pandemic run free, the actual policy variance is therefore once again hard to explain through this value-oriented reasoning. As a matter of fact, there are many other aspects that influence the relationship between evidence and policy as well.

2.1.3. The Alternative: the Civic Epistemology Model

A powerful theoretical framework of the evidence-policy relationship is offered by the concept of civic epistemology (Jasanoff, 2005; Miller, 2008; Donovan, 2021). CE, highly indebted to University of Twente honorary doctor Sheila Jasanoff, is a concept that "refers explicitly to the social and

institutional practices by which political communities construct, review, validate, and deliberate politically relevant knowledge" (Miller, 2008, p.1896). Knowledge is the result of complex judgements that are made through dynamic social processes of careful consideration, debate and appreciation. Not only do scientists and policymakers learn from each other in an interactive way, but this dialogue also results in the co-production of knowledge and social order: knowledge shapes social order while also being contingent on it (Jasanoff, 2004a; Jasanoff, 2004b; Miller, 2008). On one hand, knowledge is formed by social order through institutions, funding and laws, as well as different styles of knowledge-making. These consist of socially negotiated criteria of objectivity, societally accepted forms of expertise, norms of presentation, public accountability and visibility (Jasanoff, 2005). Such shared values and practices are not only characteristic to national cultures, but are even fundamental elements to nation-making and identity (Jasanoff, 2004b). On the other hand, social order is constructed through the allocation of power that knowledge entails (Jasanoff, 2004a). Pivotal to the context of this thesis, science shapes social order through its role in interpreting emergent phenomena, settling controversies, and establishing norms (Jasanoff, 2004a).

Compared to the two previous models of EBP, this theoretical framework accounts for a plethora of otherwise 'invisible' but influential elements. Rather than offering a singular perspective, this theoretical framework deals with "the constant intertwining of the cognitive, the material, the social and the normative "(Jasanoff, 2004a, p.6). The making of knowledge and of social order are essentially social processes. Viewing them together holds much explanatory power, although the framework is more useful to understand than to predict (Jasanoff, 2004a; 2005): The multifaceted nature of CE renders meaningful forecasts of likely outcomes problematic. Nevertheless, CE is highly valuable in contexts where the objective is an in-depth inquiry of specific cases (Miller, 2008). After all, this framework illuminates how "in any well-ordered democratic system, certain relatively unquestioned social practices serve as a backstop to normal politics" (Jasanoff, 2005, p.288). While CE has predominantly been used in the context of biotechnology (Jasanoff, 2005) and climate policies (Miller, 2008), its application to other policy fields like crisis management leads to a more exhaustive appreciation of EBP and science-policy relations. In conclusion, this theoretical framework offers a promising approach to constructing an answer to the research question of this thesis.

2.2. Civic Epistemology and Policy Variance

Civic epistemology influences policy content. In the context of expert committees, scientists' interpretations and representations of evidence partially depend on individual characteristics like expertise, personal opinions or communication skills (Jasanoff, 2005). This is further modified by the specific setting of the advisory process and, more generally, the relationships between experts and

policymakers on formal and informal levels. Moreover, citizen-government relationships, the public understanding of science, and general attitudes can all influence policy (Jasanoff, 2005). In addition, particular local circumstances, should not be neglected in the analysis as they serve as an important control as well as backdrop for other relevant factors. These circumstances can vary considerably across time and place.

Policy variance is "based on divergent framings of what is at stake, and correspondingly different assessments of the risks, costs, and benefits of various possible trajectories" (Jasanoff, 2005, p.255). For example, in his comparison of three countries' 2009 "swine flu" vaccination strategies, Baekkeskov (2016) found that policy response depended strongly on how both the problem and the possible solution were initially conceived: the goal of preventing illness led to mass vaccinations, whereas a focus on preventing deaths resulted in targeted risk group vaccinations. How experts and/or policymakers perceive or frame the challenges at hand is influenced by a multitude of elements. These can roughly be grouped into the following four dimensions.

2.2.1. Expert Assessment

Differences in expert assessment can be profound (Lancaster, Rhodes, & Rosengarten, 2020). Criteria for what counts as objective knowledge (for example numerical, reasoned or negotiated knowledge) can vary from one country to another (Jasanoff, 2005). So do technical standards or opinions of what is deemed to be safe (enough). The selection of evidence to be evaluated is similarly crucial as the selection of experts (Lancaster et al., 2020). Scientists' recommendations can vary according to the expertise they hold in terms of substance as well as form: A virologist with a focus on theoretical knowledge might offer very different advice than a pulmonary specialist who is daily confronted with the impact of COVID-19 on intensive care patients. Such differences are not always explicit or deliberate(d) (Jasanoff, 2005). Additionally, knowledge in emergencies such as this pandemic crisis is more often incomplete and based on simplified scientific models; a higher degree of scientific uncertainty is present (Donovan, 2021; Lancaster et al., 2020). A truthful portrayal of the uncertainty involved can diminish the authority of evidence and even cause policymakers to dismiss it entirely (Donovan, 2021; Lancaster et al., 2020). Moreover, the heightened urgency of a crisis severely complicates careful analysis of evidence and time-consuming, thorough deliberations (Baekkeskov, 2016; Donovan, 2021).

2.2.2. The Science-Policy Nexus

The specific connection between experts and policymakers plays a vital role (Miller, 2008). The science-policy nexus is about the position of an expert committee as well as the permanent or ad-hoc

relationships and (in)formal culture between scientific institutions and governments. The formal position of an expert committee could range from incidental advice to policymakers when being called upon, to scientists actively soliciting their input on a regular basis. As with all human endeavors, personal relationships can also determine the climate and quality of collaboration, and by extension policy contents (Miller, 2008). When Jasanoff (2005) discusses different styles of knowledge-making as a crucial aspect of CE, she stresses the importance of how knowledge is conveyed and how it can be challenged: do expert recommendations have (in)formal binding authority or is there still room for discussing and weighing them with or by policymakers? The communication between experts and policymakers also deals with the risks and uncertainties that evidence, especially in crisis time, could entail (Donovan, 2021). Such uncertainty might already be incorporated in the expert advice, become part of the negotiations between experts and policymakers, or be left for policy-makers to decide upon.

2.2.3. Government-Citizen Relationships

The citizenry matters in the EBP process because "in democratic societies, the holders of policy-relevant knowledge must find ways of persuading onlooking publics of their credibility" (Jasanoff 2005, p.261). Communication to the public, as well as visibility, transparency and trustworthiness are all influential but can be valued differently in various countries (Jasanoff, 2005). Moreover, differences in the relations between a government and its citizens can contribute to the formation of emerging policies (Donovan, 2021): national traditions and governing styles factor into the balance that policymakers maintain between individual freedoms and the predicted effects of more rigorous interference. With the formal and informal powers it holds as democratic sovereign, society can influence the EBP process and resulting policies through public debate and pressures. This can also occur indirectly through experts' and/or policymakers' expectations about whether citizens will accept and comply to certain policies.

2.2.4. Contextual Circumstances

Lastly, a difference in contextual circumstances or local particularities needs to be accounted for (Baekkeskov, 2016; Donovan, 2021; Miller, 2008). Think for example of local health care capacities, the availability and stock of masks or the specific dynamics of viral infection among the population. They set the material background and challenges to be overcome, and can vary greatly from one polity to another. Although oftentimes the subject of policies, they are external to the EBP process. Whereas the aforementioned dimensions describe local variance in the EBP setting, contextual circumstances deal with hard factors, i.e., the policy problems that need to be solved or influence other policy

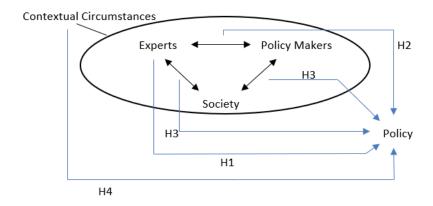
problems. Including these elements in the analysis essentially provides a control vis-à-vis the previously discussed dimensions and their impact on policy variance.

2.3. Hypotheses

In summary, this leads to the following hypotheses:

- H1: The variance in policy outcome can be (partly) explained by differences in expert assessment, which is in turn determined by the judgments, expertise and composition of expert committees.
- H2: The variance in policy outcome can be (partly) explained by differences in the science-policy nexus, which is established by the formal and informal relationships as well as communication and negotiation practices between scientific experts and policymakers.
- H3: The variance in policy outcome can be (partly) explained by differences in government-citizen relationships, influenced by governing styles, transparency, public pressures and experts'/policymakers' expectations of public behavior.
- H4: The variance in policy outcome can be (partly) explained by differences in the local circumstances and specific challenges a country faces.

Figure 1
Visualization of hypotheses 1-4



3. Methodology

This section deals with the analytical methods employed in this thesis. After some general considerations of the strengths and weaknesses of the research design, an account of the documents studied is given. The theoretical framework presented in the previous section is then carefully operationalized into a coding scheme to serve as the basis for the analysis. Lastly, a short description of the practical analysis process follows.

Generally speaking, the qualitative research design of this thesis supports the development of an indepth understanding of EBP making processes and the selected cases specifically. It leaves room for the discovery of factors influencing policy variance that were not foreseen by theory, and therefore enables a true exploration of the cases in question. Comparative approaches, like in this thesis, have yielded much success in civic epistemology research by highlighting a polity's distinctive particularities (Jasanoff, 2005; Miller, 2008). Although this juxtaposition is useful, the direct comparison of these specific cases might to some degree emphasize other aspects than contrasting either country with yet other cases would do.

The comparison will be realized through an extensive document analysis. While this has generally proven to be an efficient and effective way to obtain evidence, another advantage is that it is unobtrusive, stable and reproducible (Bowen, 2009). A possible threat to the validity of this research the dependence on the accuracy, transparency and completeness of expert committee documents. Consequently, it is important to collect evidence on both manifest and latent contents. This is facilitated by the comparative method that puts indirect emphasis on implicit or possibly missing elements by considering the alternative approach in another country. Additional information gained from media coverage of the EBP process is useful, but not necessarily objective in scientific terms. Another disadvantage is of this study is its limited generalizability in terms of content. But the thorough understanding of the EBP processes of the cases studied are valuable in informing EBP theory more broadly.

3.1. Operationalization

The analysis uses coding as a method to systematically review and order the evidence encountered within the various official documents and media articles. The theory section of this thesis demonstrated how civic epistemology is a broadly composited concept. Focusing on the relevance in explaining the policy variance across different countries, the following four major dimensions have been discerned: expert assessment, the expert-policy nexus, citizen relations and local or contextual circumstances. Several concrete facets of these dimensions and their indicators have already been hinted at but need to be explicitly operationalized. In the following section, the coding themes for each dimension are discerned and summarized in table 1.

First, pertaining to expert assessment, significant insights can be gained from the composition of the committee as well as specialties (i.e., academic fields) and types of expertise (academic vs. practical) of experts. The substantial recommendations will be coded for, as will be way evidence is used and the experts' role in creating new evidence. The analysis furthermore looks, wherever possible, at criteria, norms or thresholds handled by experts or policy-makers. Another category deals with the

representation of risks and uncertainties and examines in how far such uncertainties are relayed to policymakers or already covered in the experts' substantial assessments.

Table 1

Overview of coding themes

Expert assessment	Expert-policy nexus	Citizen relationships	Contextual
			circumstances
Differences in	Differences in formal	Differences in	Differences in
composition of	task and position of	transparency and	infection rates
expert committee	expert committee	visibility	
Differences in	Differences in	Differences in public	Differences in health
specialties and types of expertise	broader national culture	debates/ pressures	care capacities
Differences in use of	Differences in	Differences in	Differences in mask
evidence	informal relationships	expectations about the public	shortages
Differences in	Differences in	Differences in	Differences in testing
criteria, thresholds and norms	communication	national governing styles	capacity
Differences in	Differences in	30,103	Other differences
treatment of risk and	challenge/negotiatio		
uncertainties	n of expert advice		
Differences in			
creation of evidence			
Differences in			
substantial expert			
assessment			

Second, the expert - policy nexus relates to the formal and informal relationship between experts and policymakers. Coding will therefore include the official task and formal powers of expert committees and their position within the policy process. As far as can be discerned from the documents under study, informal relations and the broader culture in relationships between science and policymakers are accounted for. The communication of expert advice to policymakers will be considered as well as the practice of challenging or renegotiating evidence-based recommendations.

Third, citizen relationships entail an analysis of the transparency and visibility of the policymaking process. Public debates or pressures, forming a backdrop to the decision-making process, are coded for. Furthermore, expectations that experts or policymakers have of public behavior or attitudes are accounted, as well as the broader differences in national governing style and government-citizen relations.

Fourth, differences in circumstances and contexts, as outlined in the theory section, deal with the possibly broad variance in national situations. Coding themes for this dimension were least preconceived, although differences in infection rates, mask availability, health care and testing capacities are expected.

As indicated, during the process of coding, attention is not only focused on the more substantial contents of the documents, but also to latent or unwitting contents. That is, for example, the general tone or form of expert committee meetings, implied opinions, or things that were notably not discussed. The evidence is then used to construct an account of the differences in policy contents of both countries. The coding scheme presented here serves as a guide in what types of features to look for and was adjusted for unforeseen factors that were encountered during the review of evidence.

3.2. Documents

The core of the documents used for this analysis consists of online reports and recommendations of the expert committees, which were retrieved online. These meeting reports contain valuable data for all four of the theoretic dimensions of CE. The end of March 2021 formed the cut-off point for the inclusion of official documents, although later media reports were included.

The responsible national advisory board in Austria is the Coronavirus taskforce; meeting transcripts were published by the Federal Ministry of Social Affairs, Health, Care and Consumer Protection (BMSGPK). This amounts to a total of 22 publicized reports between February 2020 and March 2021 (BMSGPK, n.d.-b). However, several meetings were held without reports being published. Unfortunately, these could not be obtained from the BMSGPK upon request. Additional insights were gained from an extensive document by the BMSGPK that catalogued the pandemic and policy developments until early 2021 (BMSGPK, 2021f).

In the Dutch case, the responsible Outbreak Management Team (OMT) regularly devised documents containing the committee's recommendations to the national government, 43 in numbers, between the beginning of 2020 and the end of March 2021. These are accessible via the website of the National Institute for Public Health and Environment (RIVM; RIVM, n.d.-b). Four documents by the distinct but overlapping zoonoses OMT were included in the analysis, as they contain recommendations on mask use in the context of Sars-CoV-2 spread between humans and animals on mink farms. OMT meeting reports themselves were not published.

Further information, such as on the experts involved, was procured from the websites of the BMSGPK and the Dutch RIVM. Additional evidence such as appendices or publications mentioned was analyzed as far as available. Furthermore, governmental documents concerning the functioning and formal role

of the two expert committees were analyzed to gain information on the formal side of the expertnexus dimension. Moreover, homepages of governmental or other health sector institutions were consulted to compile more relevant data. Documentation of the informal relationships between experts and policymakers could be found through media articles.

For the CE dimensions relating to expert assessment and science-policy nexus, most evidence was obtained through official documents by the BMSGPK and RIVM. For the citizen relationships dimension, data were originated predominantly from media coverage. Information sources on the local circumstances dimension were mixed.

Selection of specific documents from media or governmental outlets depended on their relevance in dealing with mask-wearing policy and other factors significant to civic epistemology in the context of COVID-19 expert advice. Hence, sampling was theoretical, meaning deliberate and driven by theory, as well as a focus on face masks. In the case of expert meeting reports and recommendation documents, all available documents were included and no selection took place. A list of all analyzed documents can be found in the document appendix at the end of this paper.

3.3. Conducting the Analysis

The starting point of the analysis was a review of the official task descriptions of the two respective expert committees, which set the scene to create an understanding of what the essential differences of these committees were in terms of formal tasks, capacities and composition. From that, a chronological analysis of Austrian meeting reports and Dutch recommendation documents was conducted in parallel for both countries. This way of operating highlighted the differences in approach and methods in the two countries as time evolved, the pandemic developed, and connected scientific knowledge and policy experience was accumulated around the globe. While these documents served as a red thread throughout the analysis, they were also used as departure points: additional expert reports or other publications which the central documents referred to were accumulated. Additionally, newspaper articles and other publications from governments or other health-related agencies were collected, which were useful in shedding more light on the context of EBP processes and contents. The overall focus of the analysis was on expert recommendations and policy-decisions about mask-wearing, although evidence pertaining to other COVID-19-related policy problems helped create a picture of the general dynamics and processes in EBP.

The overall aim of this process was to systematically collect and review evidence on why certain policy steps were taken in order gain an in-depth understanding of the underlying rationales and dynamics in both cases, which could then be related to the differences in policy.

This chapter discussed some general advantages and disadvantages of this qualitative analysis, gave a description of the documents used and outlined how the analysis was structured in practice. The following chapter presents the substantial insights and some of the data that was gathered in this way.

4. Analysis

After this description of how the analysis was conducted, this section turns to its substantial contents. The presentation of findings is structured along the four theoretical dimensions discerned earlier. In the course of this systematic discussion, the four hypotheses of this thesis will be revisited one by one and assessed at the end of each subsection.

All coding themes for which relevant differences were revealed by the evidence are systematically discussed. Some coding themes were merged and others even omitted (e.g., the broader national tradition of science-policy relations and governing styles) because the analyzed documents contained no or only thin evidence on them. For some themes, like the central strategy and framing of the policy problem or evidence creation, the uncovered data revealed no substantial differences between the two countries.

4.1. Expert Assessment

4.1.1. Differences in Composition of Expert Committees

The Austrian Coronavirus taskforce consists of an internal crisis team of BMSGPK policymakers advised by a team of experts forming the Wissenschaftlicher Beraterstab COVID-19 (WBSC; BMSGPK, 2021h). During the course of the pandemic, two more advisory teams concentrated on psychosocial effects and legal questions, as opposed to the (bio)medical focus of the WBSC/taskforce (BMSGPK, 2020r). Meetings were held with both experts and policymakers present and were presided by the BMSGPK minister (BMSGPK, 2020r). In some cases, up to three more ministers, including the Austrian chancellor, were also present (e.g., BMSGPK, 2020d). No indications were found that the WBSC convened independently to discuss evidence or recommendations. WBSC members were selected and personally invited by the health minister for a period of six months (BMSGPK, 2020r), but composition varied as more experts joined, and some quit, during the course of the pandemic. When the Taskforce was formed in February 2020, the initial number of experts was 6 (Heschl, 2020); present membership includes 10 civil servants and 17 experts (BMSGPK, 2021h).

By contrast, the Dutch OMT is a permanent committee falling under the RIVM. Its close ties to other RIVM departments dealing with infection control, such as the Center for Infectious Disease Control (CIb), are reflected in OMT membership. For example, the CIb director doubles as OMT president

(RIVM, 2020aq). In addition to some other permanent members, experts from different medical fields are invited to join depending on a meeting's topical focal point. For COVID-19, there were 26 recurring participants, while more experts joined incidentally. Notably, there is also a zoonosis OMT which brings together specialists from human and veterinary medical fields. Dutch policymakers were not directly involved in OMT meetings, but facilitating RIVM personnel was (RIVM, n.d.-b). Whereas Austrian experts work in honorary capacity (BMSGPK, 2020r), their Dutch counterparts are remunerated with 200€ per meeting (RIVM, 2020aq).

4.1.2. Differences in Specialties and Types of Expertise

It is unclear who exactly was involved with the Austrian taskforce over time, because only current members are listed (BMSGPK, 2021h) and meeting reports are anonymized. All current WBSC members have ample practical expertise and hold leading positions in the medical field. This includes care providers like hospitals or ambulance services, professional societies such as the national medical board and pharmaceutical society, and health-related NGOs like the national health agency and hygiene institute (BMSGPK, 2021h). Most members have an academic background in medicine, virology or microbiology, almost half additionally pursued academic careers next to their practical commitments. One expert specializes in mathematical modeling and simulations, one in youth psychiatry and another in bio ethics. Although the personal selection of experts by the minister seems to focus on individuals, the taskforce predominantly consists of high-standing officials of important national institutions or professional associations from within the health sector. This indicates that institutional expertise is highly valued, more so than scientific expertise per se.

The Dutch OMT includes a mixture of institutional representatives and 'ordinary' experts: About half of the members seem to be included on personal instead of institutional merit (RIVM, n.d.-b). Aside from general practitioners and intensive care specialists, no other professional organizations were represented as such, but one member specializes in health and safety in professional circumstances. A notable difference to Austria is the broader range of medical specialties, including several geriatric experts, a pediatrician, a cognitive disabilities expert, as well as pulmonary specialists. The bigger number of scientific experts and the inclusion of multiple experts from certain specialties indicates more capacity for the assessment of evidence - and possibly a more balanced representation of different academic viewpoints. Overall, a similar distribution of academic and practical focus of expertise is present: about half of the members hold university professorates in addition to being health care providers. Expert attendance is transparent for each meeting, although just like in Austria, individual opinions are not disclosed (RIVM, n.d.-b).

4.1.3. Differences in Use of Evidence

Surprisingly, Austrian taskforce meeting reports do not indicate that scientific debates during meetings were frequent, nor that members commonly used scientific evidence in their discussions. Data on the treatment of risks and uncertainties which such evidence contains were therefore not found. In two instances, scientific articles were referred to in the meeting reports (BMSGPK, 2020a; 2020i). News articles on scientific insights (e.g. Tufekzi, 2020) were also discussed twice (BMSGPK, 2020p; 2021c). Of great importance is a paper by scientists from the Medical University of Vienna (MUV) that was briefly discussed in one meeting (BMSGPK, 2020i): it contains different scientific prognoses as well as policy recommendations, among others also public mask use (Beiglböck, Grohs, Hermisson, Nordborg, & Schachermayer, 2020). Apparently, this type of in-depth evidence evaluation and policy advice is not routinely a WBSC task, but, in this instance, was consciously or coincidentally left to external experts. Yet, discussions of non-scientific evidence in the form of best-practice examples from abroad, with the intention to replicate their success, are frequent (eg. BMSGPK, 2020b; 2020d; 2021c).

By contrast, scientific evidence is central to the assessments of the Dutch OMT. Although specific publications are only identifiably referenced in appendices (LCI, 2020a; 2020b; 2020c), all OMT documents habitually mention currently available scientific knowledge. Uncertainties of evidence are explicitly portrayed to policymakers: "Considering the instruction to advise on the basis of scientific evidence and insights, the OMT cannot recommend nor discommend the use of non-surgical masks" (RIVM, 2020k, p.7). However, as one OMT member pointed out, social distancing was recommended earlier despite a lack of supporting evidence (Feenstra, 2021). Similarly, the assumption that mask-wearing leads to less social distancing, which in conclusion led to a negative mask advice, lacks scientific justification (RIVM, 2020k). Reevaluation of questions pertaining to mask use occured repeatedly, for example in light of changing WHO recommendations (RIVM, 2020n), renewed inquiries by policymakers (RIVM, 2020o) or public discussion (RIVM, 2020y). Notably, this did not result in substantially different conclusions: the OMT, citing new evidence that indicated mask use in fact increased the distance kept between individuals, nonetheless reiterated its previous stance (RIVM, 2020o). The quality of the new evidence was seen critically as worries of a false sense of security were still prevalent among OMT members (Feenstra, 2021; RIVM 2020o).

4.1.4. Differences in Substantial Expert Assessment

Remarkably, there is no evidence of the discussion of public mask use by the Austrian taskforce prior to its initial introduction to supermarkets. Instead, the policy was launched on the basis of the previously mentioned MUV paper (BMSGPK, 2020i). According to these external experts, "even though the individual protection of masks may not be very high, the statistic effect on the spread of the sickness seems to be considerable" (Beiglböck et al., 2020, p.5). All MUV recommendations were

publicly announced by the Austrian government on March 30, 2020, but WBSC members were asked their opinions only after the televised press conference (BMSGPK, 2020i). Meeting reports reflect their agreement, although not undivided (ORF, 2020g), as one member concludes public mask use "rather makes sense" according to an unspecified article in scientific journal The Lancet (BMSGPK, 2020i, p.3). For a positive effect to be achieved, WBSC members stress the utmost importance of giving clear instructions for the safe handling of masks by the public. Months later, WBSC experts reconfirm the usefulness of public mask-wearing as they point out the milder disease progression in patients that were infected in spite of wearing masks (BMSGPK, 2020o). In January 2021, WBSC members advised FFP2 mask use, again emphasizing the necessity of high quality information campaigns (BMSGPK, 2021c).

OMT documents first mention public mask use well over a month after its introduction in Austria (RIVM, 2020k). The team referred to inconclusive and contradicting evidence concerning the success of non-surgical masks in preventing individual infections. Instead, the preference for general hygiene rules, social distancing and home isolation with symptoms was emphasized, as well as the need to save surgical masks for medical personnel. Mask-wearing was repeatedly presented as the very last of measures to be taken (RIVM, 2020k; 2020m; 2021e). Only where none of these measures would be possible, mask use was advised, but only for individuals working in such settings (RIVM, 2020k; 2020m). No recommendations for or against public mask use in under these circumstances were made. Where 1,5 m distance could be kept, the OMT explicitly advised against general mask use (RIVM, 2020k), although internal disagreement on mask policy caused severe tensions (Feenstra, 2021). In this, the assumption was decisive that a false sense of security would cause people to stop social distancing: "In that case, the use of non-surgical masks, which only offer limited protection, can lead to a surge in COVID-19 infections" (RIVM, 2020k, p.5). Public use of FFP2 masks was never reflected on in OMT documents. The OMT thought these extra protective masks were only necessary for staff dealing with COVID-19 patients during medical procedures which released incresed amounts of aerosols (RIVM, 2021e).

4.1.5. Conclusion regarding hypothesis 1

Hypothesis 1 predicts that variance in policy outcome can (partly) be explained by differences in expert assessment, which is in turn determined by the judgments, expertise and composition of expert committees. This hypothesis is strongly supported by the results of the analysis.

One important difference between the two countries regarding expert assessment is the presence of (very senior) Austrian policymakers during the meetings in which expert opinions were discussed and recommendations given. This makes independent expert assessment of evidence problematic. The

contents discussed by the Austrian taskforce are significantly more oriented towards practical steps to provide health care and reduce viral spread, and expert advice seems somewhat haphazard and incidental. By contrast, in the Dutch OMT, scientific evidence was more prevalent and structured methodically. Crucially, also substantial assessments differed. The OMT discommended general public mask use while emphasizing the inconclusiveness of evidence in preventing individual infections. WBSC members however agreed with MUV experts who focused instead on the expected cumulative preventive effects in society as a whole. The effects of differences in specialties and expertise on policy variance remain less clear. But with this exception, all other coding themes pertaining to the expert assessment dimension were found to influence the difference in national policy.

4.2. Differences in the Science-Policy Nexus

4.2.1. Differences in Formal Task and Position of Expert Committee

The official tasks of the WBSC of the Austrian COVID-19 taskforce is threefold: provide general updates on the situation in the field; follow new scientific developments around Sars-CoV-2; and give feedback on questions, policy proposals or other documents presented by the BMGSKP minister (BMSGPK, 2020r). The minister also convenes the meetings, which are attended by experts and policymakers alike. Tasks are clearly separated as policymakers have the final say. Transcription of advice or decisions into guidelines for the health care sector is generally done by BMSGPK, although sometimes outsourced to one of the independent agencies represented in the taskforce (e.g., BMSGPK, 2021c). Remarkably, for 149 years, Austrian governments were advised by an expert medical board specifically dedicated to epidemics, the Oberster Sanitätsrat (OSR). The committee ceased to exist when in 2019, the 3-year nomination of experts expired and was not renewed by an interim cabinet consisting of unelected public servants who expressly refrained from longer-term decisions (Nimmervoll, 2020b). However, its non-existence not only coincided with the heaviest pandemic in Austria's recent history, but was an illegal breach of duty by the succeeding BMSGPK minister (Nimmervoll, 2021a). According to a former OSR and current WBSC member, the OSR would have been more independent and more transparent in comparison, and operated under well-established conditions (Druml, 2020). The WBSC on the other hand was created ad hoc during a crisis situation, operated as an extension to the BMSGPK, and its legal position was only finalized almost two months into the pandemic.

In the Netherlands, both the responsible minister (usually of the Ministry of Health, Welfare and Sports; VWS) and the RIVM can convene OMT meetings (RIVM, 2020aq). Typically, VWS poses questions or policy problems, to which the OMT is to give clear and concrete advice. The OMT needs to be fully transparent in reflecting risks and uncertainties, both generally and regarding its own proposals; disagreement among members should also be revealed. Written recommendations are

drafted after every meeting, and another opportunity for revisions or corrections is provided to all experts. Afterwards, the two most senior OMT members discuss the advice with policymakers of responsible national ministries and local administrative levels. This is where OMT recommendations are "evaluated on their political feasibility and desirability" (RIVM, 2020aq, p.14). Ministerial decisions are translated into concrete guidelines for local health management and health care providers by RIVM experts, or into general national policies by the responsible ministry.

4.2.2. Differences in Informal Relationships Between Actors

For each country, the three most important elements found concerning informal relationships are named here:

First, unfortunately beyond the reach of this analysis, Austrian taskforce meeting reports incidentally mentioned that (academic) articles, and perhaps also assessments thereof, were shared via email (BMSGPK, 2020a; 2020p). Second, several ministers and unknown experts over the weekend informally discussed the MUV expert paper that public mask policy was based on (BMSGPK, 2020i). The complete WBSC was informed of this later. Third, multiple experts strongly disagreed with the ministerial handling of the OSR issue. This even even resulted in the former OSR president quitting the WBSC (Druml, 2020; Lindorfer, 2020) – which, conversely, was initially created on his own informal initiative (Heschl, 2020).

For the Dutch case, firstly, cabinet members and various (OMT) experts informally met almost weekly on Sundays, outside of the official expert-policymaker conferences. Although officially, they only exchanged thoughts without making decisions (VWS, 2020), OMT members criticized how these meetings affected the OMT president's ability to separate the roles of scientist and policymaker (Feenstra, 2021). Second, as a consequence, policies were sometimes discussed ahead of the OMT giving advice. This caused some OMT members to anonymously vent their frustration over being sidelined to news media, in turn angering others (Feensta, 2021; Keulemans, 2020). Third, tensions between experts and policymakers also arose as confidential OMT papers were repeatedly leaked to the public (Van Heerde, 2021).

4.2.3. Differences in Communication Between Experts and Policymakers

As far as taskforce meeting reports - which are written and publicized by the BMSGPK – reflect, the nature of the conferences is relatively managerial: expert members share experiences and practical bottlenecks that their institutions faced on a day-to-day level, for example pertaining to shortages of resources for staff protection. Especially during the first pandemic wave, this appears to be the main focus of the committee. Exchanges seem relatively anecdotal and spontaneous. As for policy

recommendations, although different arguments and viewpoints are frequently reflected, meeting reports seldomly indicate a clear conclusion or commonly negotiated strategy. The reversed time order of policies being decided, publicly announced and only afterwards discussed in an official taskforce meeting, is a recurrent phenomenon (e.g. BMSGPK, 2020i; 2020o). This is obviously detrimental to a meaningful advisory process. In addition, according to one WBSC member, the persuasive abilities of individual experts were highly influential for policy contents (ORF 2020g).

In the Netherlands, communication between policymakers and experts in the form of official OMT advice documents is much more structured in comparison. Questions by VWS are systematically listed and answered, summary interpretations of available evidence provided, and policy recommendations, overall, clearly formulated. However, the rather confusing mask advice forms a notable exception to this (RIVM, 2020k; 2020o). The comparatively careful deliberation of evidence sometimes resulted in striking delays as requested advice or guidelines were postponed for several weeks (e.g., RIVM 2020h; 2020i; 2020j). When problems arose surrounding the reversed time order of informal meetings with policymakers and OMT conferences, the OMT's independent operating was effectively restored by moving the weekly expert meetings to a different day (Feenstra, 2021).

4.2.4. Differences in Challenge/Negotiation of Expert Advice

As mentioned, in Austria, expert advice was not independently formed prior to negotiations with policymakers. This makes it difficult to discern the stages of expert assessment and expert-policy negotiation in EBP. Two things follow from this. First, the government's being privvy to expert discussions significantly undermines the negotion position of experts as there is no clear-cut advice to be challenged or defended. Second, since the BMSGPK did not attribute challenges of arguments to either policymakers or other experts, nor always report concrete outcomes of the substantial discussions, possible policy deviations from expert advice are unclear. At any rate, negotiations were as spontaneous as the expert advice itself. Notably, chancellor Kurz once challenged experts publicly, stating many would downplay the situation (ORF, 2020f).

Around the same time, Dutch prime minister Rutte called OMT advice "sacred", indicating that it would be leading even though it is not legally binding (Den Hartog, 2020). Yet later disclosed text messages proved that he simultaneously harbored reservations vis-à-vis the RIVM (Hendrickx, 2021). Allegedly, Rutte wanted to handle a stricter containment strategy, when the OMT recommended focusing on mitigation instead (RIVM, 2020d). Several months later, roles were reserved when the OMT advised more stringent measures than cabinet was willing to take (Keulemans, 2020). Since then, recommendations were disregarded more often (Feenstra, 2021; Markus, 2021). Although meetings

between policymakers and experts could not be analyzed directly, this indicates that expert advice was not as inviolable as first suggested.

4.2.5. Conclusions Regarding Hypothesis 2

Hypothesis 2 states that the variance in policy outcome can (partly) be explained by differences in the science-policy nexus, which is established by the formal and informal relationships as well as communication and negotiation practices between scientific experts and policymakers. The insights presented in this section are partially in line with this expectation. Differences in the formal tasks and positions of expert committees, as well as in communication – keywords being reverse time order and speed of advising – have significant effects on the contents of national policies. But the effects on policy variation are less obvious as we do not know what Austrian experts would have advised if operating independently and consulted beforehand. Similarly, the exact effects of the difference in negotiation practices are difficult to establish. The same goes for informal relationships: Without additional information, the effects of the observed tensions on policy variance can only be speculated on.

To recapitulate, the differences in formal positions allow the Dutch OMT to systematically deliberate, formulate and revise their evidence-based recommendations before discussing them with policymakers. Notwithstanding some practical setbacks in this process, this facilitates the scientific grounding of their advice and safeguards the OMT's independent position. Even though OMT recommendations were not entirely "sacred", this certainly contributed to the government taking over the OMT's negative mask advice. Austrian procedures however condense expert assessment and negotiation with policymakers all in one step. The reduced independence and scientific rigor, in combination with the reversed time order of consultation and decision-making, suggests that the WBSC's role as a *scientific* advisory board is limited. In the most decisive moment for Austrian mask-policy, the WBSC was effectively sidelined. If the more independent OSR was promptly reinstated instead of creating this committee, the expert-policy nexus (as well as expert assessment) would likely have differed.

4.3. Differences in Citizen Relations

4.3.1. Differences in Transparency and Visibility

Although only limited data were encountered on this variable, and the hypothesized effects on policy variance are unclear, several facts are noteworthy in the context of transparency and visibility.

Evidence suggests that visibility somewhat influenced public mask policy in Austria. However, this refers to visibility as a policy strategy, and not an inherent characteristic of Austria's CE. As some

experts were skeptical of public mask use with doubts concerning safe usage (ORF, 2020g) the explicit focus on highly visible educational campaigns is a direct reaction to their concerns. With greater visibility, the slightly controversial mask policy was more agreeable to experts and policymakers (BMSGPK, 2020i).

While collecting documents for this analysis, it has become evident that official information on the scientific motivation of policy decisions is much more easily available in the Netherlands than in Austria (cf. BMSGPK, n.d.-b; RIVM, n.d.-b). Although the scope of this research did not allow for a thorough assessment in this regard, there are many indications that in the Netherlands, expert discussions — and, importantly, disagreements — were more frequently conducted in the public arena (Feenstra, 2021; NOS, 2020b; 2020i). The magnification of expert disagreements by news media could have unsettling effects on the general public during a global crisis of this scale. In today's globalized world, the high visibility of other country's policy responses might also be influential. Since in most European countries, masks were long commonplace, citizens' doubts about the Dutch reluctance towards maskwearing increased (Markus, 2020).

4.3.2. Differences in Public Debate/Pressures

In Austria, no explicit evidence was found that the initial introduction of masks could was influenced by public pressures. However, federal government was extensively pressured to facilitate a normal skiing season in late 2020 (Glösel, 2021). Vital to many inhabitants and several federal states, winter tourism was partially allowed and mountain cableway use was permitted with FFP2 masks. Coming well ahead of the broader introduction of FFP2 masks, the decision can be seen as a compromise to balance economic interests and local lobbying pressures against public safety concerns (Süddeutsche Zeitung, 2020).

In summer 2020, as Dutch cities bustled again after months of lockdown, retailers and local policymakers publicly called for mandatory mask-wearing in busy areas (Keultjes, 2020). Although new scientific evidence contradicted the initial reservation that mask-wearers would keep less distance, the OMT did not change its recommendations (RIVM, 2020o). Nevertheless, a pilot was launched with local mask-wearing, which was not continued after a displacement effect occurred (NOS, 2020d; 2020e). Yet public discussion kept going until parliament finally endorsed a motion to require masks publicly on September 30, 2020 (NOS, 2020i). Consequently, government issued the "urgent advice" to use masks in public indoor places (NOS, 2020j). "We adjust to society. If it wants [mask requirements]: fine, we join in," stated prime minister Rutte (Markus, 2020), still unsure if he would use masks himself (Van Soest, 2020). Once more, expert advice was requested on the issue. While reiterating the substantial doubts, the OMT advised the government to create clarity once and for all, since public debates would "distort the message" of other COVID-related measures (RIVM, 2020y, p.8). Per December 1, 2020, the

urgent advice for mask use in public indoor venues became an obligation (Zoggel, 2020). Without public interference, this policy seems unlikely. Campaigns by medical professionals for extended FFP2 usage were not honored (RIVM, 2021e).

4.3.3. Differences in Expectations about Citizens

In Austria, the biggest doubts focussed on the correct and safe usage of masks (BMSGPK, 2020i; 2021c). These reservations were countered proactively: initial introduction of masks was a pilot project aimed at "rehearsing mask-wearing among the population" and evaluating citizen behavior (ORF, 2020e). Moreover, the effort to educate the public on safe mask handling was substantial (e.g., ÖGHMP, 2020a; 2020c; BMSGPK 2020s).

While Austria essentially decided to trust its citizens, Dutch expectations about individual behavior were highly skeptical of citizens' capacity or willingness to comply to social distancing rules (RIVM, 2020k). Reportedly, one main reason for the relatively late requirement of facial masks in the Netherlands were personal doubts of the OMT president (NOS, 2020k). As OMT members corroborate (Feenstra, 2021), this personal expectation tipped the balance in favor of negative mask advice. The cabinet trusted this opinion (Markus, 2020).

4.3.4. Conclusion Regarding Hypothesis 3

Hypothesis 3 states that the variance in policy outcome can (partly) be explained by differences in government-citizen relationships, influenced by governing styles, transparency, public pressures and experts'/policymakers' expectations of public behavior. There is mixed evidence to substantiate this hypothesis. Too little evidence on governing styles was found, but the other three variables definitely influenced national mask policies. Pressures from the larger public, in both countries represented by business interests and local policymakers, caused changes in mask policy. If not for public pressures, the Dutch mask requirement would seemingly never have been adopted at all. But this only partially contributed to policy variance; in fact, Dutch public pressures led to more level policies instead. Because public concerns in Austria later slightly increased policy variance, this variable appears to have mixed effects. The same is true for transparency and visibility: whereas transparency of Dutch expert debates contributed to public pressures that eventually equalized policy variance, visibility as a strategy supported the stricter policies in Austria that increased policy variance. Only the evidence on expectations of citizen behavior unambiguously support hypothesis 3.

4.4. Differences in Contextual Circumstances

4.4.1. Differences in Development of Infection Rates

Infection rates certainly played an important part in mask policies. In all instances that mask policies were tightened or relaxed in either country, this was to control the spread of Sars-CoV-2 among the population. As the graphs below indicate, the timing of the first and second waves in the Netherlands and Austria was very much aligned. Interestingly, when Austria initially introduced public mask-wearing on March 30, 2020, national infection rates were already in a downward trend (WHO, n.d.-a). Austria's FFP2 mask policy was, in addition to rising infection rates, also motivated by the advent of several, more dangerous virus mutations in January 2021 (BMSGPK, 2021c). However, higher infection rates did not automatically lead to stricter mask policies. Overall, differences in infection rates are not significant enough to explain the observed variance in mask policy.

Figure 2

Confirmed infection cases and deaths in Austria (WHO, n.d. -a)

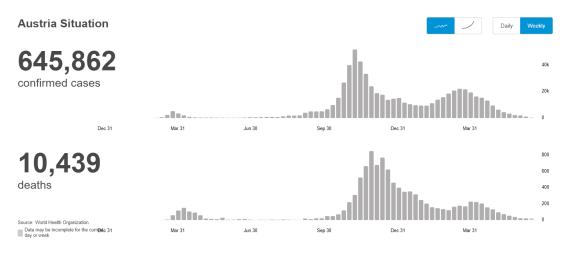
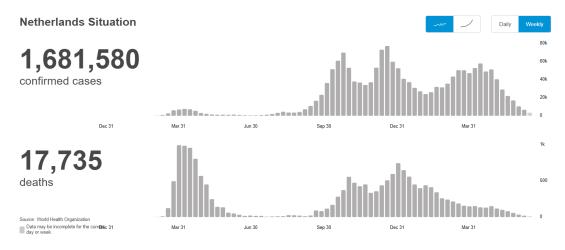


Figure 3

Confirmed infection cases and deaths in the Netherlands (WHO, n.d.-b)



4.4.2. Differences in Health Care and Testing Capacities

When mask-wearing became obligated in Austria, health care providers, most notably intensive care units (ICU's), had plenty capacity left (AGES, n.d.). Austria had 2547 available ICU beds at the beginning of the pandemic (ORF, 2020c). The Netherlands started out with a total ICU capacity of 1150 in Mach 2020, which was later extended to about 1700 (NICE, n.d.; AZ, 2020d). Despite a population size that is almost double in comparison, Dutch ICU capacities were less than half of Austria's. If health care capacities were leading in the decision to implement mask requirements, the Netherlands would be expected to have stricter policies than Austria. Similarly, the comparatively more dominant strategy of Austria to frequently test persons with or without symptoms (BMSGPK, 2021f) would presumably decrease the need for strict mask policies. This is the opposite of the policy variance that actually occurred.

4.4.3. Differences in Mask Shortages

When COVID-19 initially spread across the globe, a shortage of surgical and FFP2-masks followed (WHO, 2020b). Austria's reaction to this was seemingly successful. In an unbureaucratic, centralized process, an air bridge from China was installed and domestic production ramped up (BMSGPK, 2020i). From the beginning of April, 2020, supermarket visitors who did not bring own masks were supplied with disposable surgical masks. At that point, according to taskforce meeting reports, nationwide coverage with surgical masks was imminent and mask shortages essentially over (BMSGPK, 2020j).

In the Netherlands, shortages apparently lasted significantly longer. This is probably due to the relative severity of the first wave, resulting in a higher mask demand in health care. When masks were required in public transportation as from June 1, 2020, surgical masks were explicitly forbidden in order to avoid shortages in the medical sector (AZ, 2020a). Instead, use of cloth masks or non-certified disposable masks was advised. Another indication for the influence of shortages on mask policy are Dutch guidelines for elderly care homes. For months, it was claimed that mask use by staff was not required in "short contact" with infected patients (LCI, 2021). The RIVM adjusted this guideline in August 2020, who admitt that the change was not due to new evidence but because mask shortages no longer formed an objection (NOS, 2020h).

4.4.2. Other Circumstances

In addition to the earlier specified circumstances, two more reasons were encountered that possibly contribute to the observed policy variance. First, after the Dutch government - instructed by parliament - urgently advised public mask use, legal reasons were cited for the delay of several weeks in introducing binding obligations (Zoggel, 2020). This accounts for a 2-month delay but cannot explain the other 6 months in which masks were required in Austria but not in the Netherlands.

Second, when mask producer Hygiene Austria was found to benefit financially from fraud with FFP2 certifications, a scandal arose. In light of close personal connections of the company to chancellor Kurz, opposition members alleged ulterior motives for the introduction of general FFP2 mask requirements (Freiheitlicher Parlamentsklub, 2021). These allegations were not substantiated to date and are therefore discarded as evidence.

4.4.2. Conclusions Regarding Hypothesis 4

Hypothesis 4 states that he variance in policy outcome can (partly) be explained by differences in the local circumstances and individual challenges of these countries. The evidence procured does not clearly support this hypothesis. In both countries, infection rates and - particularly in the Netherlands - health care capacities served as an important motivation for the adoption of COVID-19-related policy measures, including mask use. Yet the variance in infection rates and health care capacity does not explain the observed difference in policy. The underlying assumption that more infections and smaller care capacity lead to stricter mask policy contradicts the actual policy difference.

It can be concluded that local circumstances, particularly infection rates, health care capacities, and mask shortages, were influential within a domestic context, but did not substantially impact the policy difference in these specific cases. While legal considerations extended the existing policy differences, mask shortages were found to be have the most significant influence on policy variance.

5. Conclusion

After reviewing the most relevant insights gained, this final section presents a concluding answer to the research question. This is done by discussing this study's overall findings and reflecting on the two national CE cultures more broadly. Finally, the strengths and limitations of this thesis are considered, and suggestions for further research made.

5.1. A Wider Perspective

The systematic analysis of the four hypotheses allows us to return to the main research question: Which factors explain the difference between the Netherlands and Austria in evidence-based policy concerning mask-wearing during the COVID-19 crisis? Hypothesis 1 on expert assessment was strongly supported by the evidence. The advice of national expert committees was pivotal for the difference in policy. Hypothesis 2 on the influence of the science-policy nexus was only partially substantiated, as it is not entirely clear how experts' exact involvement in the policy process contributed to policy differences. Evidence also partially supported hypothesis 3, dealing with relationships with citizens. Whereas transparency/visibility and public pressures had mixed effects, expectations of citizen behavior clearly increased policy variance. Hypothesis 4, explaining variance in terms of differing local

circumstances was found to be applicable only in the case of mask shortages. In addition to these results on policy differences, many important elements concerning the unique development of policy outcomes in both countries were discovered. These pertain to the specific national CEs of both countries and are as follows.

As for the Netherlands' CE culture, the overall diligent fulfillment of the OMT's role as scientific advisory board is reflected in the systematical presentation of the assessment of evidence, as well as carefully deliberated policy recommendations. On the downside, the OMT was sometimes comparatively rigid and slow in its responses, with potentially grave consequences given the high stakes and urgency involved. Conversely, the evidence-based approach and the need for clear policy advice, both official OMT's tasks (RIVM, 2020aq), created significant tension at times: The advisory process was left scientifically vulnerable and open to opinions or assumptions that were inadequately underpinned by evidence. Even though the assessment of evidence on public mask-wearing was ambiguous, a specific policy advice, reportedly determined by one individual's opinion, was given. Ironically, the OMT deviated from its usual evidence-based approach in the very case closely examined by this thesis. Instead, a recommendation to the government to contemplate public mask use on the basis of values, particularly the precautionary principle and individual freedoms, would better befit the independent and evidence-based position of the OMT.

In contrast to this, Austrian CE culture during the COVID-19 pandemic overall seems more flexible, quickly responsive — yet significantly less evidence-based. The ability for the taskforce, or specifically the WBSC, to operate independently and systematically assess evidence was severely limited by how the advisory process operated in practice. The fact alone that the WBSC did not exist independently outside of taskforce meetings, with policymakers present, speaks volumes. As public health specialists of the Vienna medical university warned in the context of the OSR's non-existence, "independent expertise is a necessary basic condition for evidence-based health policy" (Nimmervoll, 2021b). Since the early mask-wearing obligation was found to be based on a previously discussed MUV expert paper, in this incident, the work of these autonomous scientists corresponds better to the role of the Dutch OMT than the WBSC's. If the OSR existed instead or in addition to the WBSC, its position would likely compare better to the Dutch OMT. With limited independence and little use of scientific evidence, the question arises of whether the policymaking process in Austria can rightly be called evidence-based. Instead, the taskforce as an advisory body was highly practice-oriented. In essence, it is based rather on the 'evidence' of other countries' best-practice approaches to handling the pandemic than on academic knowledge.

In conclusion, Dutch COVID-19 mask policies up until March 2021 were determined by negative expert recommendations even in the face of scientific ambiguity, and the subsequent severe public disagreement. By contrast, Austrian mask policies was strongly inspired by a single MUV expert paper and the global recourse to mask-wearing. Although not explicit evidence was found, it would be in line with the Austrian government's general methods that FFP2 obligations were modeled after the same policy issued just days before in Germany. Taken together, mask policy in both countries was less evidence-based than one might have expected.

5.2. Strengths, Limitations and Additional Research

This analysis also contains a number of limitations, mostly pertaining to the set of documents that were analyzed. For example, reports were not published for all Austrian taskforce meetings. Accuracy of the data is further weakened by the fact that documents in both countries were redacted for public use by the BMSGP or the OMT and therefore do not reflect the full course of the meetings. Austrian email conversations could not be analyzed, just like formal and informal meetings between Dutch experts and policymakers. Presumably, having a better account of all these elements would bear results highly significant for the present research. For both countries, the documents studied offered only limited evidence for some of the elements that are influential according to CE theory. Most notably, data on the broader national traditions of the expert-policy nexus as well as the governance style in relation to citizens could have benefitted this analysis by setting the CE background to policymaking during the pandemic. As different parts of the EBP process remain obscured in both countries, comparison is more difficult and the validity of the conclusions diminished. Additional light was shed on these areas through consulting media articles. Yet a truly systematic approach to collecting and analyzing media representations of either national EBP process is a vast endeavor that would have gone well beyond the scope of this thesis.

Nevertheless, this research has succeeded in creating a well-founded understanding of the factors that influenced Dutch and Austrian mask policies and the differences between them. CE theory provided a powerful lens through which to understand and highlight differences in national EBP processes. This thesis could therefore illuminate many of the complex relationships that connect policy-making with both science and society. Although not all of these relationships could be studied thoroughly, many theoretical elements could be evidentially substantiated in this comparative case study.

When it comes to theory, some previous assumptions deserve additional commentary. First, the technical-rational model of EBP was dismissed due to a perceived scientific consensus on mask-wearing. But the effectiveness of masks can severely decrease through human behaviors like incorrect usage. Explicitly accounting for behavioral - thus not only biomedical - evidence, dilutes scientific

consensus on the topic, as was the case within the Dutch OMT. Clearly, the OMT also handled stricter criteria for what counts as scientifically contested evidence than those used in this thesis. Second, even though the value model was dismissed, the importance of values was still found to be considerable. As we have seen, preferences for certain policies in some respects came before evidence use in both countries. Values, in tandem with preconceived opinions and assumptions about mask policy – be it from experts, policymakers or the general public – were highly influential for the observed policy variance.

One obvious suggestion for additional research would be conducting open-ended interviews with expert committee members and/or policymakers from both countries in order to gain more evidence on the aforementioned obscured areas of the EBP process. Additionally, as the larger public caused a vast correction of mask policy in the Netherlands, the role of society deserves closer attention. Quantitative surveys or qualitative interviews with citizens could clarify how the general publics of both countries experienced evidence-based crisis management. Related, an extensive review of news coverage - contrasted with studies with a greater emphasis on the advisory and decision-making processes as well as citizen experiences - would reveal valuable knowledge on the connections between evidence and policy, and the public narratives that were developed thereof. CE theory could greatly benefit from a deeper comprehension of the role of the public and media on EBP processes and contents.

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