# Moral Polarization and Vaccination Against COVID-19 – a Study of Attitudes Toward Unvaccinated

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# Abstract

This thesis examines attitudes related to non-vaccination against COVID-19 from a moral psychological perspective. Specifically, the aim was to examine moral polarization on the issue of vaccination, namely which attitudes that people, who are vaccinated against COVID-19, have toward people, who are not vaccinated, and how these attitudes are related to morality. First, the overall research aim, the cultural psychological approach, and key terms were outlined, after which a theoretical framework was constructed based on theories related to moral psychology. Specifically, Moral Foundations Theory, the theory of upward social comparison (moral reproach), and moral framing theory provided a theoretical basis for understanding polarization and vaccination from a moral psychological perspective. This theoretical framework laid the foundation for the construction of a moral pluralist framing study, intended to examine the attitudes of vaccinated toward unvaccinated, and if these attitudes are related to different moral framings and values, and how this relates to political ideology. Data was collected online, by recruiting respondents for a questionnaire, involving both ratings and open-ended questions (N=109). Afterwards, the data was analyzed both quantitatively to identify general tendencies in the data, and qualitative with Qualitative Content Analysis to gain an in-depth perspective on the moral dimensions of the attitudes exhibited in the text-answers. The most consistent findings were that, in line with the theory, the moral foundation of harm/care was the most understandable moral foundation, while purity was the least understandable. Additionally, it was consistently found that respondents, who identified as moderate or far right, were more understanding of non-vaccination than were people who identified as any other political leaning. In the qualitative analysis, it was found that the primary reasons for being supportive of vaccination were related to showing care for others/preventing harm, and displaying trust in authorities. It was also found that negative attitudes toward unvaccinated were prevalent, particularly among the moderate and far left, supporting the interpretation that non-vaccination is a morally polarizing social issue. The main reason for being understandable of non-vaccination was related to the moral foundation of liberty, particularly considering vaccination to be a matter of personal choice, but also individual concerns related to the vaccine were present. Meanwhile, reasons related to skepsis regarding the vaccine and the authorities' handling of the pandemic was limited. After the data analysis, reflections related to the methodology of the study were outlined, along with considerations of limitations that should be considered when interpreting the results of the study. The findings and their implications were related to and interpreted

through the theoretical framework and compared to relevant existing literature, with which the results were generally consistent. These implications were used to construct theoretically and empirically grounded suggestions for counteracting polarization in relation to non-vaccination, but also polarization in society in general. Additionally, relevant areas for future research were suggested. Above all, it is suggested that promoting understanding of the values that motivate others can increase empathy and tolerance of other people and thereby reduce moral polarization.

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# 1. Introduction

Human beings are inclined to think and act morally – we view ourselves, each other, and the world around us and make assessments of right and wrong, we try to act in accordance with what we believe to be good and right (moral) – and we encourage others to do the same. Yet, what one person believes to be moral, another can see as immoral. Moral values are seen as universal, therefore what is moral is universally good, what is immoral is universally bad (Haidt, 2012), and for this reason we struggle to be understanding of moral values that conflict with our own. Morality underpins a vast number of political, social, and ideological issues, and this can explain why so many of these issues often are hotly debated.

An example of a social issue with moral components is the global COVID-19 pandemic, which has impacted most people's lives. From early on, it was clear that there were different perceptions about what the best response would be. Many agreed with the restrictive measures imposed in many countries, including Denmark, which were aimed at reducing the spread of the disease, such as social distancing, mask mandate, lockdown, and a strong encouragement for people to get vaccinated. Others believed that these measures were overblown over a disease that seemingly did not pose a large threat to the majority of the population, and instead concerns about the consequences and implications of these restrictive measures were raised. These different views of the "right" behavior in response to COVID-19 is likely related to the moral perspective that somebody has on the crisis. For example, some people consider it a moral obligation to get vaccinated against COVID-19 to help protect themselves and others and do what is in one's power to halt the spread of the disease. Meanwhile, others believe that whether one decides to get vaccinated or not is entirely a question of personal choice; the rights of the individual are non-negotiable, it is up to the individual alone, and nobody should be blamed or feel bad about choosing to not get vaccinated. Others, again, may be against getting vaccinated as it goes against their beliefs, relying either on a religious moral system or beliefs about the sanctity of the human body, viewing vaccines as something that is unnatural.

These different perspective on vaccination are rooted in the different moral values. To some, it is a given that you should do whatever you can to prevent the spread of a potentially harmful disease to protect others. To others, the most important thing to consider is that the threat of the disease is not used to pressure people into changing their behavior or being persuaded into doing something that they do not want to do. These moral differences mean that the same issue is viewed from different angles, which often leads to frustration between people who cannot fathom how the other part can see the issue the way they do; we are blind to the moral values of others, which leads to hostility and polarization.

## 1.1 The problem of polarization

Polarization is problematic because it furthers the divide between people. Political polarization is defined as "the extent to which citizens hold strong and moralized attitudes about political and societal issues" (van Prooijen, 2021, p.2) and is very closely related to moral polarization. In an article, political polarization researchers Thomas Carothers and Andrew O'Donohue (2019) argue that "severe polarization damages all institutions essential to democracy", and state that polarization destroys norms of tolerance and moderation. Therefore, polarization can lead to extremism, political violence, erosion of trust in the institutions of society, and hostility toward those with different views. The less tolerant people are of others with diverging views, the more polarization will increase, with potentially negative consequences for open, democratic societies that are based on values of tolerance and acceptance of different values.

The issue of vaccination against COVID is one societal event that has been polarized, with much divisive discourse aimed toward people who have been reluctant to get vaccinated. The consequence of this polarization is that legitimate concerns, skepticism, and curiosity is drowned out by people who are quick to categorize people as either pro- or against vaccinations. People who raise concerns about the vaccination are considered selfish, ignorant, or associated with conspiracy theories, even if they have legitimate concerns. Christine Stabell Benn, who is a vaccination researcher and a clinical professor at Syddansk Universitet, argues that the polarization of the vaccine debate is damaging, and that there are valid concerns brought up by people who are hesitant to get vaccinated (Jessen, 2022). By problematizing the attitudes of people with conflicting views, the opportunity for open and constructive debate is lost, and instead both sides become further entrenched in their beliefs. There is a need for the possibility of open, critical discourse, where different points of view are acknowledged if we are to compromise and gain an understanding of others' lived reality.

The aim of this study is to examine the attitudes of people, who are vaccinated against COVID, toward people, who are unvaccinated, and how their attitudes toward unvaccinated are influenced by morality, and to examine how these tendencies relate to polarization in the vaccine debate (and society in general) and what can be done to counteract it.

## 1.2 Structure of the project

The overall research question is defined in the following part, along with an outline of the metatheoretical approach, followed by a specification of key terms. Then follows a construction of the theoretical framework intended to provide the foundation for an inquiry into the concept of morality in cultural psychology, and how it relates to vaccination attitudes. Next, a study design methodology will be outlined based on the research aim and theoretical framework and

carried out. Afterwards, the data material is analyzed, and these findings make up the foundation of the discussion, where the methodology will be considered, the results will be related to the theoretical framework and existing literature, and prospects for future research will be explored.

## 2. Research questions and aim of study

The general aim of this thesis will be to examine how people, who are vaccinated, see people, who are unvaccinated and the moral dimensions that influence these attitudes, and how this relates to moral polarization, including in a broader social context. The overall research question for the present study is based on the above reflections, and is as follows:

*What attitudes do people, who are vaccinated against COVID-19, have toward people, who are unvaccinated, how understanding are they of the different moral reasons that people may choose to not get vaccinated, which moral resources do they themselves draw upon when justifying their position, and how do these issues relate to political ideology? Do these tendencies relate to polarization in society in a broader context, and if so, what can be done to counteract this polarization?*

These overall research questions will be approached through a cultural psychological perspective. The anthropologist Richard Shweder defines cultural psychology in the following way:

> "Cultural psychology is the study of the way cultural traditions and social practices regulate, express, transform, and permute the human psyche, resulting less in psychic unity for humankind than in ethnic divergences in mind, self and emotion. Cultural psychology is the study of the ways subject and object, self and other, psyche and culture, person and context, figure and ground, practitioner and practice live together, require each other, and, dynamically, dialectically, and jointly make each other up." (Shweder, 1990, p. 1).

The aim is to examine how different moral reasons influence the attitudes toward unvaccinated people, whether some moral reasons are more effective than others, which moral reasons they themselves would produce in favor of vaccinations, and how these tendencies relate to political ideology. Cultural psychology is a particularly appropriate approach in that morality is considered to be a fundamental concept to understanding human behavior and differences in values and attitudes, and these moral differences are believed to be culturally determined (Shweder, 2012).

The topics of moral and political polarization will also be explored in a broader, societal context, and these discoveries will be used to work toward a way to counteract negative

polarization between people, both in the specific context of vaccination and in society in general.

## 2.1 Operationalization of morality

Here, the concept of morality as understood in the present article will be described. The description will mirror the definition used in the literature review which preceded this thesis (see: Olesen, 2021). Fundamentally, morality relates to the beliefs that human beings hold about right and wrong, good and bad. This is a broad, but somewhat static description of the concept, which fails to encompass the psychological, lived reality and experience of a human being. Our conscience means that we are constantly evaluating everything around us as good or bad, which is the result of our inherent sense of morality. Morality is considered to be a central aspect of the lived reality, something that permeates our lives and plays a major role in influencing behavior and attitudes. It is thus an all-encompassing part of experience, rather than a philosophical concept pertaining to the ethics of good and evil. Jonathan Haidt describes moral systems the following way:

> "Moral systems are interlocking sets of values, virtues, norms, practices, identities, institutions, technologies, and evolved psychological mechanisms that work together to suppress or regulate self-interest and make cooperative societies possible." (Haidt, 2012, p. 289).

This is a descriptive and functionalistic conception of moral systems. It includes the emotional, behavioral, and, especially, social and cultural aspects of morality and its influence on the lives of human beings. Morality is related to our values; it guides our behavior and is a key basis for how we act with and toward others. It includes both the internal, psychological aspects of morality, closely related to our emotions, and also the social dimension, wherein morality is considered to be pro-adaptive, by contributing to prosocial behavior, including cooperation. We constantly make moral judgments and assessment, and in this way our sense of morality is fundamental to understanding human behavior.

## 2.2 Operationalization of polarization

The Cambridge dictionary definition of polarization is: "the act of dividing something, especially something that contains different people or opinions, into two completely opposing groups." (Cambridge University Press, n.d.). Thus, moral polarization refers to polarization that is based on differences in moral beliefs, behaviors, norms, or values. As mentioned, this is closely related to political polarization, as political polarization is based on disagreements regarding political ideologies or behaviors, which are based on (moral) values.

Moral polarization is also related to Moscovici's (1992) concept of group polarization, which refers to how attitudes within groups get increasingly polarized over time, which furthers the divide between groups. Moral polarization thus relate to the division that occur between people or groups of people who subscribe to different values, norms, or ideals. In combination with the definition of morality above, these circumstances combine to make attitudes on moral issues very rigid and differences particularly difficult to overcome. Polarization becomes self-reinforcing, because the more polarized we are the less open we are to conflicting perspectives on our beliefs, we get further entrenched in our views. An attitude can be polarized, which refer to an attitude that is considered to be more extreme than the norm.

## 2.3 Understanding of non-vaccination

In this project, the term *unvaccinated* refers to a person (any person) who is unvaccinated against COVID-19. Thus, unvaccinated is broad and inclusive term, compared to a description such as "anti-vaccination" or "anti-vaxx", which is often associated with people, who are staunchly against vaccinations (often of all kinds), but who most likely represent a vocal minority of the large group of people, who are unvaccinated (Yong, 2021). Many people who are unvaccinated against COVID-19 do not share the sentiment that all vaccinations are dangerous, or subscribe to conspiracy beliefs regarding vaccinations and those that have developed them. Rather, they have decided to not get vaccinated for other reasons; some do not think they are threatened by COVID-19, others are afraid of needles. There can be many reasons to be unvaccinated, and unvaccinated in this project refers to anyone who is unvaccinated, regardless of their reason.

Conspiracy beliefs are defined as beliefs that consider COVID-19, and/or the vaccination, and/or other initiatives or events related to COVID-19 to have been caused by powerful agents with hidden agendas to pursue goals. There is a distinction between conspiracy beliefs and misinformation, in that misinformation refers to information regarding COVID-19 or vaccines that is incorrect, while conspiracy beliefs that there are hidden agendas or motives related to COVID-19 or vaccinations.

In the following section, a theoretical framework based on morality will be built, to get a clearer idea about the relationship between morality, polarization, and vaccination attitudes.

## 3. Theoretical framework for the study

Here, the theoretical framework of this article and research design is outlined. This chapter consists of a brief outline of the concept of morality in human history, how it has been used and how it is used in modern moral psychology. This is followed by a description of the Moral Foundations Theory, along with its relevance in the context of vaccination attitudes and

polarization. Additionally, the theory is used to explain the blindness to the morality of others, which can lead to misunderstandings and a lack of tolerance of the views of others, resulting in moral reproach, which further divides people. Lastly, the theory of moral framing and its implications is outlined.

## 3.1 Perspectives on the concept of morality

Historically, morality has often been considered to pertain to the discipline of philosophy, related to metaphysical discussions about ethics, good and evil, virtue and sin (e.g., Kant's "Metaphysics of Morals", 1797). Many famous philosophers, such as Plato and Immanuel Kant, argued that the way to uncover the true moral values about what is good and true was through the use of rigorous logic and reasoning. Reason and rationality have often been elevated as the traits that made human beings unique, compared to the "lower" mental structures, such as our emotions and instincts. Morality has often been linked to reason, believed to be made up in our "thinking" brain, which stood opposite our "emotional" brain, which was considered primitive and animalistic, and which was the cause of the irrationality and impulsivity of human beings. The implication of this perspective is that if we could set aside our emotions, we would be able to become completely logical and rational beings. However, this separation of reason and emotions has been challenged, and instead it has been suggested that emotions and rationality are closely connected and intertwined (Haidt, 2012).

## 3.2 Morality and emotions

In his book *Descartes' Error*, the neuroscientist Antonio Damasio studied individuals, who had suffered brain damage to the ventromedial prefrontal cortex, which resulted in the subjects experiencing an almost complete loss of their emotionality. Their IQs showed no sign of deficits, and they were still able to reason morally, but they did not respond emotionally to stimuli. What happened was not that they became supremely rational beings, who could coolly make the most logical decision in every situation they found themselves in. Instead, their lives fell apart. Without emotions to guide them, to put value on things that mattered to them, deciding between different courses of action was impossible, as every goal to pursue seemed equally valuable (Haidt, 2012). This implies that our ability to discern right from wrong (our sense of morality) depends largely on our emotions, rather than our ability to reason rationally alone. The philosopher David Hume argued that: "reason is, and ought only to be the slave of the passions, and can never pretend to any other office than to serve and obey them" (Hume, 1969/1739-40, p. 462, as cited in Haidt, 2012, p. 40). Rather than being primarily reasoning beings, we are guided by our emotions, and our reasoning is subject to our emotions. In an analogy, Haidt compares our emotions to an elephant, and our reason to a rider perched on top

of the elephant. The rider can often influence which direction the pair (or person) will go, but if the two disagree, the elephant is far more powerful and usually gets its way.

Some emotions are considered to be highly linked with morality, as these *moral emotions* are involved in forming moral judgments and motivating moral behavior in ourselves and others. These moral emotions are defined as: "emotions that are linked to the interests or welfare either of society as a whole or at least of persons other than the judge or agent." (Haidt, 2003, p. 853). Previously, empathy and guilt were considered to be the moral emotions, but these have later been expanded to include other emotions, including anger, contempt, and disgust – the three of which are related to moral condemnation of others – but also emotions such as shame, embarrassment, compassion, gratitude, awe, and elevation.

The linking of morality and emotions is related to biology and an evolutionary perspective on morality. More than 150 years ago, Charles Darwin suggested that morality was a byproduct of evolution, which plays a crucial role in the extensive sociality of human beings. In his book, *The Descent of Man*, Darwin wrote: "I fully subscribe to the judgment of those writers who maintain that of all the differences between man and the lower animals, the moral sense or conscience is by far the most important." (Darwin, 1871, p. 66). Our conscience (that we think in terms of good and bad, judge things or behaviors as right or wrong, feel good when we behave the "right" way, feel bad when we behave immorally) is based on our sense of morality. This sense of morality enables us to form large societies, it makes us able to cooperate and act toward a common cause and makes it possible for us to get along with others with similar values; moral belief systems are at the center of every human culture (Shweder, 1990).

This uniting power works in reverse way as well. Throughout history, countless wars and atrocities toward other human beings have been conducted in the name of what was morally right against those who held different ("wrong") moral beliefs. People with different moral belief systems can clash over which moral values are "right". These value systems may be irreconcilable as they can be based in mutually incompatible belief systems. For example, on the question of abortion, a feminist, who thinks that the option of abortion is a human right, and a highly religious conservative Christian, who thinks that the teachings of the Bible is the highest moral authority and therefore considers human life (including that of a fetus) to be sacred, would be unable to find a compromise, because their values are fundamentally incompatible. Each view is anchored in irreconcilable moral belief systems, is it impossible to find a solution that satisfies both perspectives. We tend to consider our own moral values to be universal, but people with the opposite moral views feel the same about their values. In the following, a theory examining these different moral values of people is laid out.

## 3.3 Moral Foundations Theory

Traditionally, moral psychology was based upon the works of Kohlberg (1969) and Turiel (1983), who had studied how children develop a sense of morality, and what morality is in a psychological sense. While they disagreed on some areas, the general implication of both of these theories was that morality was about rationality and treating people well, which essentially meant to not cause harm or treat others unfairly, pertaining to the rights of the individual (Haidt, 2012). Kohlberg and Turiel subscribed to the idea of *moral universalism*, which refers to the notion that morality is a question of universal values which are always true in any context, and which are "discovered" rather than developed. Actions are universally right or wrong, and no conditions can change this. Moral universalism represents one perception of morality. At the other end of the spectrum is the concept of *moral relativism*, which posits that morality is relativistic and contextually dependent. This means that morality can only be judged within a given context, it is impossible to create universal principles for right or wrong. A third perspective was pioneered by the anthropologist Richard Shweder, who argued that the theories of Kohlberg and Turiel were produced by – and for – people in individualistic cultures, where morality pertained to the rights and proper treatment of individuals, and he questioned whether they would apply in other parts of the world, where the worldview (and values) were sociocentric. Haidt refers to the individualistic cultures as WEIRD, which is an acronym for Western, Educated, Industrialized, Rich, and Democratic.

Shweder argued there were three distinct types of belief – moral – systems that all cultures were built upon, which he called moral languages (ethics); *autonomy* (related to harm, justice, and rights, which aims to protect individuals), *community* (related to duty, respect, and loyalty, which aims to preserve social order and institutions), and *divinity* (related to purity, sanctity, and sin, which aims to protect against various types of degradation) (Graham et al., 2013). All culture value systems around the world, he argued, were anchored in at least one of these three ethics, and all can be equally valid. This is the fundamental idea of *moral pluralism*, which is, in a sense, a combination of universalism and relativism. In a moral pluralist view, moral value systems are based on one of the universal belief systems (ethics), but they are highly contextual and culturally embedded, which means that moral social practices may vary greatly; "universalism without the uniformity" (Shweder, 2012, p. 97). Shweder describes how, among the Oriya Hindu Brahman of Bhubaneswar, it is seen as morally despicable for a son to get a haircut and eat chicken in the days after his father's death. This may seem puzzling to Westerners, but upon learning that this behavior shows severe lack of respect for the loved one due to the religious beliefs of the Oriya Brahman, the disrespect displayed by son is

understandable. Conversely, the Oriya Brahman might scratch their heads if they were told that it would be considered deeply unacceptable to show up for a funeral in the West in an unbuttoned Hawaii-shirt and sandals. Both behaviors would be seen as morally wrong for reasons related to cultural (moral) norms, which are not immediately obvious to outsiders, but which can be understood when considered to be related to the universal perspective of sanctity related to showing respect for deceased loved ones. The particular cultural rituals related to the death of a loved are numerous and vary greatly across different cultures but having rituals for deceased loved ones is common across numerous cultures.

Based on the work of Shweder and others (Fiske, Schwartz & Bilsky, Brown, de Waal), Jonathan Haidt and Craig Joseph (2004) attempted to combine these theories into an integrated model for human morality, which became the Moral Foundations Theory (MFT). This model combines a cultural and an evolutionary understanding of human behavior, arguing that both nature and nurture play central roles in the development of moral values (Graham et al., 2013). MFT is based on Haidt's Social Intuitionist Model. This theory posits that we judge intuitively, we either like or dislike something, and moral reasoning is added post hoc to rationalize our intuitive (emotional) reaction. When we experience something, we automatically like or dislike it before we have rationally considered it, and this moral intuition is shaped culturally (Graham et al., 2013). Other research has similarly argued that human thinking rely predominantly on heuristics and happen automatically, in what is called "system 1"-thinking (as opposed to "system 2"-thinking, which is a slow, more deliberate process) (see: Kahnemann, 2011). Furthermore, Haidt and Joseph argue in favor of a nativist perception of morality, meaning that we are biologically predisposed to think morally, to create moral values, norms, and behaviors, morality is considered to be "organized in advance of experience" (Graham et al., 2013, p. 61). While we are "wired" to have a sense of morality, the moral belief system of the individual is shaped by the culture in which we grow up, which is in line with Shweder's notion of moral pluralism. These innate mental modules of morality are believed to have evolved to serve a prosocial purpose and aid us during adaptive challenges. As many widely different sorts of challenges were encountered by our ancestors, it is only natural that the scope of morality spans across many different areas, rather than being exclusively related to concerns related to individual concerns, such as earlier Western-centered theories had proposed. Put together, MFT adopts a nativist, cultural-developmentalist, intuitionist, and pluralist conception of morality (Graham et al., 2013). In extension of Shweder's notion of belief systems based on distinct moral languages, Haidt and Joseph found that there were, at least, five distinct domains that human beings perceive to be related to morality. These original five moral foundations were:

care vs. harm, fairness/justice vs. cheating, loyalty vs. betrayal, authority/subversion vs. autonomy, and sanctity/purity vs. degradation. Later, an additional foundation, liberty vs. oppression was suggested (Haidt, 2012). Here follows a description of each moral foundation along with their socio-evolutionary purpose

- (1) *Harm/care*: human beings have evolved to be sensitive to the suffering of others, not just the suffering of ourselves and our kin. We dislike those that cause harm to others and favor those that prevent harm, as those that cause harm to others pose a threat to us and people around us.

- (2) *Fairness/reciprocity*: we rely on our ability to create alliances to reach common goals, our inclination toward fairness means that we can cooperate and that those who break social convention (the rules) are punished and excluded from the social collective, which serves the purpose of preventing free-loaders or ego-centrical individuals from taking advantage of others. We believe that people should "get what they deserve".

- (3) *Ingroup/loyalty*: We are biased in favor of those of our own group (or ingroup), which helps us in forming strong groups that are robust and can work together to achieve common goals. We tend to dislike those that are perceived as posing a threat to the group.

- (4) *Authority/respect*: due to human societies being organized in a hierarchical structure, our minds are shaped to navigate in hierarchical communities. People who value this moral foundation highly are inclined to be obedient, trust in authority, and follow the leaders' orders, while consider dissent and going against leadership to be morally wrong.

- (5) *Purity/sanctity*: this foundation relates to our sense of disgust and degradation. Disgust is a "guardian of the body" (Haidt & Graham, 2007, p. 106), which prevents us from engaging in unhealthy or unnatural activities that seem to threaten us, such as eating spoiled meat when we transitioned to eating meat. This expands into the social area, for example some religions have strict rules about some foods (e.g., pork) being forbidden to eat because they are impure. Much other behavior can also be considered degrading and impure, for example if somebody is driven by hedonistic desires rather than more culturally sanctified values, they might be viewed negatively (Haidt & Graham, 2007).

- (6) *Liberty/oppression*: this foundation relates to the desire for personal freedom, the unwillingness to be oppressed by others by others and a dislike of being told what to do, and also to a sense of equality and resisting discrimination. This foundation likely

evolved as a response to the threat of being dominated and used by others (Haidt, 2012). There is a balance between this foundation and authority, which lies in accepting a leader's authority, but an unwillingness to accept tyranny or domination.

All moral values and beliefs are thought to be based upon these six foundations, although Haidt points out that there could be more foundations, but these six are most widely accepted. While these six foundations are perceived to be universal, the relative importance placed on each of these modules vary greatly across different individuals and cultures. For example, some individuals might strongly consider issues that relate to fairness to be a moral issue, based on right and wrong, but without considering ingroup loyalty to be a moral matter. The relative importance that people place on the different moral foundations is referred to as their *moral profile* (Graham, Haidt, & Nosek, 2009). An individual's moral profile can be measured with the Moral Foundations Questionnaire (MFQ). By administrating this scale to a large number of people across different cultures, general and robust tendencies have been found. One central finding is that moral profiles are highly related to political ideology (Graham, Haidt, & Nosek, 2009). On a left-right political scale, those on the left (liberals) tend to place more importance on the moral foundations of harm/care and fairness/cheating (these two make up the *individualizing* foundations, as they relate to the rights of the individual), but much less importance on three others, namely authority, loyalty, and purity (these three make up the *binding* foundations, as they relate to strengthening (or binding of) the group and promoting cohesion), while conservatives score lower on the individualizing foundations, but higher on the binding foundations. Conservatives (right-leaning) tend to draw on all five moral foundations, while liberals predominantly draw on harm/care and fairness/justice (Haidt & Graham, 2007). Liberty is important to both sides, but it represents something different to different people (Haidt, 2012). To liberals, the liberty foundation relates to equal rights by resisting forces that seek to oppress and discriminate. Meanwhile to conservatives, liberty relates to the individual's rights, the right to be left alone, to not have others impede upon one's personal freedom. The differences in moral profiles between left- and right-leaning individuals have been found to be consistent across different cultures, in a study using a large number of participants (Graham, Nosek, Haidt, Iyer, Koleva, & Ditto, 2011). This data showed that the range of importance for liberals on a 0-5 rating scale ranged from 1.27 for purity, to 3.74 for fairness, while harm/care was 3.62, and authority and ingroup loyalty were 2.26 and 2.27 respectively. Interestingly, conservatives scores ranged from 2.89 on purity to 3.28 authority, which suggest that conservatives place similar value on all five moral foundations measured

here (the moral foundation of liberty was not part of the study). "Moderates" have a similar moral profile to liberals, except that it is more balanced, ranging from 1.99 purity to 3.39 on fairness. While there are some differences between cultures (for example, Eastern cultures tend to place slightly more importance on ingroup and purity), the relative differences between left-right were consistently stronger than the cross-cultural differences. This implies that left-leaning individuals valuing individualizing foundations higher than the left and right-leaning individuals valuing binding foundations higher than the left within the same cultures are universal tendencies.

### 3.3.1 MFT and attitudes toward vaccination

How the above circumstance relate to vaccination attitudes will be examined here. Studies have suggested that people with anti-vaccination attitudes have a distinct moral profile. These individuals tend to score high on purity and liberty, and low on authority (Amin et al., 2017; Rossen, Hurlstone, Dunlop, & Lawrence, 2019; Schmidtke et al., 2022). Liberty, in the context of vaccinations, is related to the conservative interpretation of the foundation, as it relates to the sense of personal choice, the individual's right to choose for themselves without being pressured or coerced by pressure to get vaccinated. This means that the moral profiles of people with anti-vaccination attitudes are more in line with right-leaning moral foundations, which might explain why it has been found that right-leaning individuals in the US are less likely to decide to get vaccinated than their left-leaning counterparts (Kirzinger, Kearney, Hamel, & Brodie, 2021; Baumgaertner, Carlisle, & Justwan, 2018). Similar data in a Danish context is not available, but the HOPE Project, which investigate how Danes are coping with COVID-19, asked people from different political parties if they agreed with the following: "I would follow the advice from the health authorities if they recommended that people like myself get an authorized vaccine against COVID-19", and found that the voters of two parties were far more likely to disagree with the statement than others, namely those that voted either Liberal Alliance or Nye Borgerlige (Bohr, 2021). This question is directly relevant for moral concerns of authority and liberty in the right-leaning sense. A survey by TrygFonden similarly found that people who voted for these two parties were far more likely to be concerned regarding the restrictions of personal freedom due to restrictions (Andersen, Andersen, & Hede, 2020). These two parties are generally the most right-leaning parties on the area of personal freedom, and both share a preference for a low degree of state involvement in people's lives (right-leaning liberty). While right-leaning individuals are consistently found to be less supportive of vaccination, ideological extremism toward both left and right is associated with lower willingness to get vaccinated (Debus & Tosun, 2021).

### 3.3.2 Moral blindness to the values of others

We tend to think of our own moral beliefs as universal, and we struggle to be understanding of people who hold different moral values. In Haidt's (2012) words "morality binds and blinds" (p. 207), which means morality unites us with others with similar moral values, but it makes us blind to values that do not align with our own. This is central to understanding the divides and polarization between people with different moral values and beliefs.

Regarding left-right differences, conservatives tend to favor the status quo and resist change. They strive to preserve the existing institutions and traditions, and they believe that these should not be tampered with (Haidt & Graham, 2009). In the West, the market, marriage, or the church are all instances of institutions that are central to the base of society for many conservatives, and making changes to these basic structures of society can appear threatening. For example, conservatives might fear that legalizing gay marriage could: "destroy marriage as we know it" (Haidt & Graham, 2007, p. 112), or that stem cell research is unnatural and against God's will, thus undermining the purity and sanctity of marriage and religion which are deeply ingrained values in conservative morality. Yet these concerns are often disregarded by liberals, who do not recognize these moral values of conservatives. This leads to the belief that conservatives, who resist against progressive ideals, are homophobic, racist, bigoted, or just plain evil. As mentioned, conservatives have been found to place a relatively balanced importance on all of the moral foundations, whereas liberals place little importance on the binding foundations. This means that while these moral issues are often ambiguous and morally conflicting to conservatives (Haidt & Graham, 2009), to liberals, concerns related to the binding moral foundations are disregarded, and therefore they do not understand the moral reasons for conservative to be against progressive ideals. Haidt and Graham (2007) investigated the moral blindness of liberals, moderates, and conservatives by asking groups of each to fill out the MFQ as a "typical" person of the other ideologies would. Interestingly, they found that conservatives were the best at assessing what was morally important to the other ideological groups. While liberals accurately estimated that the binding foundations were important to conservatives, they severely underestimated the importance that conservatives place on harm/care and fairness. Liberals place low value on the three binding foundations, so when conservatives are hesitant to prioritize concerns related to the individualizing foundations due to concerns of the binding foundations, liberal interpret it as though the individualizing values must be of very low importance to conservatives, even though they value them similar to the other foundations. The authors describe this as a sort of "moral colorblindness" of the left. Liberals assume that if someone does not do everything in their power to prevent harm to others, it must mean that this

value is unimportant to them. Sometimes a liberal may be quick to rationalize that somebody who is against immigration is a racist, but in reality, the person may be conflicted between wanting to help people but being afraid that immigration of people from another culture could pose a threat to their own cultural traditions, which are essential values to them. This is particularly the case as conservative morality aims to promote cohesion and stability of communities by adhering to traditionalistic views of social conventions. These conditions are no excuse for discrimination of any kind. However, it is important to note that moral reproach and anger toward those who hold different views is not only ineffective at convincing them that they are wrong but may in fact be counterproductive.

### 3.3.3 Theory of upward social comparison (moral reproach)

As our own moral values are usually seen as true, right, and universal, the moral emotions anger and contempt will often be directed toward those with different perspectives on moral issues. This can take the form of moral reproach, which refers to berating others for their lack of proper moral values or perceived immoral behavior. As many people would likely acknowledge, telling somebody that they are wrong and that their values are bad is not an effective way to get them to change their beliefs. In fact, moral reproach may be outright counterproductive. While shaming people into changing their behavior may intuitively seem like an effective tool to influence others, research suggests that the perception that one is being reproached increases the resistance to change one's behavior (Monin, 2007). Benoît Monin's theory of upward social comparison posits that when we compare ourselves to those who appear (or try to appear) as superior to ourselves, we are either elevated or threatened. This is especially true on matters of morality because morality makes up our fundamental values, which are important for our self-image and identity. By being presented to someone who behaves as though they are morally superior, one can feel that they are being attacked by this believing-to-be-morally-superior individual, or feel that one's own moral beliefs are being threatened. As a response, we react defensively, by thinking that these people may have ulterior motives, that they are not actually meaning well, and/or we take a dislike to them, resent them and distance ourselves from them; we are not interested in socializing with people we expect to berate us for our values or views. This perceived moral reproach makes us distance ourselves from people who behave condescendingly toward us for our views. In the context of COVID-19, unvaccinated individuals may experience being morally reproached by vaccinated people and authorities, who may deliberately or inadvertently make unvaccinated feel that they are being morally reproached for their vaccination attitude. How this perceived moral reproach influences vaccination attitudes has been studied by Rosenfeld and Tomiyama (2022). They found that

unvaccinated individuals perceived a moderate degree of moral reproach from vaccinated people, and that this perception contributed to their unwillingness to get vaccinated, supporting the claim that moral reproach is counterproductive if the aim is to make people reconsider their attitude. This is in line with the thoughts of Haidt (2012), who argues that moral righteousness is not a solution to the moral divide. Haidt points out that the main way to overcome moral disagreement is to try to fully empathize with another person's views, to try to understand their reasons for believing what they believe. It requires a conscious effort to be open and understanding to overcome moral disagreements. The discourse surrounding (non-)vaccination is also influenced by the moral framing used in the communication on this topic.

### 3.3.4 Moral framing

Framing refers to the way in which the wording and construction of sentences and communication influences how a reader perceives a message. Framing considers how a message is being presented (or framed) as the key to information sharing, rather than what is being shared. Moral framing is a type of emphasis framing, where a message is framed in a way that is intended to appeal to moral values. Framing can be used both to promote support for and opposition against an initiative, it is a powerful tool in communication. Several studies have shown how effective moral framing can be in influencing attitudes, even attitudes that are considered to be rigid. In studies examining MFT and moral framing, it was found that by framing messages on climate change around moral foundations important to conservatives, conservatives were equally willing to act to fight climate change, an issue otherwise not seen as a moral issue to conservatives (Wolsko, Ariceaga, & Seiden, 2016; Wolsko, 2017; Rossen, Dunlop, & Lawrence, 2015; Feinberg & Willer, 2013). After reading a framed text message on climate change intended to appeal to the moral values of conservatives by making fighting climate change about maintaining the purity of nature and stating that acting on climate change and preserving nature was a patriotic act, conservatives were as willing as liberals to do something to accommodate climate change. These findings suggest that what are often considered deeply entrenched stances on political issues are connected to which moral principles we consider to be relevant in the context of the issue. Deliberate framing to appeal to the values of the receiver is very common in many types of communication, for example in political value-based rhetoric. Another notable finding by Rossen et al. (2015) was that media communication on climate change was predominantly framed in a way that was based on the moral foundation of care/harm, i.e., showing care for nature and avoiding the potential harm and threat of climate change. This implies that the way that media frames the issues influences which political groups get highly interested in the topic. This is also relevant on the question of

vaccination, as communication regarding vaccines have similarly been highly focused on the care/harm foundation, as the reasons used to promote vaccination have often been related to avoiding the risks of COVID-19, and particularly the need for people to display "samfundssind", and other communicative strategies that underline the importance of showing care for others and preventing harm, which has likely contributed to the left being more supportive of vaccines. Vaccine communication is also related to the moral foundation of authority, as the recommendations regarding vaccines are typically communicated from a position of authority by the health authorities and/or the government.

In summary, moral values are based on (at least) six distinct moral foundations, but the distribution and importance ascribed to each of these vary between people. Additionally, we tend to be blind to the moral values of others, which leads to frustration toward others who fail to follow moral norms we ourselves often take for granted. This contributes to the moral reproach of others with different moral worldviews, and the experience of being morally reproached for one's attitudes lead only to an entrenchment of attitudes and a rigidity and unwillingness to change. Difficulty understanding others is a key contributor to the polarization between people over moral issues, and it is thought that moral values and moral reproach will be present among the attitudes of how vaccinated view unvaccinated.

In the following, reflections on a moral pluralistic framing study design will be outlined, and a study design will be constructed on the basis of the theoretical framework described above. The aim of the study is to examine how people, who are vaccinated against COVID-19, view people who are unvaccinated, how their views are influenced by moral reasons based on distinct moral foundations, which are more (or less) effective, which counter-arguments the participants will give in support of vaccination, and how these tendencies relate to political ideology.

# 4. Method

In this section, the methodological reflections that preceded the research design will be outlined. This will be followed by a detailed description of the research approach, alongside reasoning for the decisions made in the development of the research design, including considerations related to sampling, and the implications of the research methodology. This will be followed by a description of the analytical approaches used to analyze the data material.

## 4.1 Study design reflections

The aim of the research design was to construct a way to examine the overall research question of the present article.

The decision to use both quantitative and qualitative measures was made on the basis that the two approaches could complement each other to broaden the understanding of the phenomenon, without interfering with one another. The quantitative measures were made up of survey questions based on Likert-scales and the qualitative inquiries were based on open-ended survey questions. Specifically, the quantitative approach to the study contributes with descriptive statistical overview of the data, expressing numerical tendencies in the data. This serves the purpose of examining the mean scores and standard deviations (SD) of the different questions, depending on condition and political ideology. This statistical presentation of the data provides indications of these tendencies based on numerical values, which makes the data easy to interpret and understand. It is worth noting that the study design is not fit for inferential statistical analysis, which could have been interesting, but would require a larger sample. Instead, the statistical data is to be considered as valuable in pointing to some general tendencies and presenting them in a clear fashion (Wagoner, 2009). This numerical measuring is conducted by asking participants to provide a rating on a 7-point Likert scale to a number of questions which will be outlined in the following section.

The qualitative aspect of the questionnaire consists of asking participants to explain their attitudes after providing a rating answer for the three questions described above, and an additional that is purely qualitative. The purpose is to examine the meaning-making construction process behind the rating, how the (moral) justification of the respondents is constructed (Wagoner & Valsiner, 2005). The purpose of this approach is to examine the moral dimensions of the attitudes of the respondents, how they use moral resources in their own reasoning, whether this is related to political ideology, and whether it fits the theorical framework provided in the previous chapter. This perspective contributes to a deeper understanding of the respondents' attitudes toward the moral reasonings and values than what is available through strict statistical analysis. Ratings are not simply a reflection of static state of mind or an attitude but are rather the result of a meaning-making process, in which a person reflects on and constructs their reasoning through a process of making sense (Wagoner, 2012). Words and language are unfixed, and though researchers may try to specify meanings, the process of making sense of what is being said is not something that can be reduced to revolving around a specific word with a specific meaning, because this meaning is negotiated in the respondent. Examining the reasoning through which the respondents justify their attitudes, based on their moral values – and their attitudes toward unvaccinateds' values – is the area of interest for this analysis.

The open-ended material will be analyzed by the use of *qualitative content analysis* to find themes and general patterns of categories and tendencies in the data, which can be used for a more general analysis related to the theoretical framework provided in the previous chapter. This will be elaborated in section 4.5 (Qualitative Content Analysis).

For the reasons described above, it was considered that combining descriptive statistical analysis with a qualitative analysis would contribute to as broad an understanding of the phenomenon as possible, with the two methodological approaches complementing each other well.

## 4.2 Questionnaire design

In the following, the research design will be described along with reasoning for the choices made in the design process. These decisions were made based on the reflections described above.

For the quantitative measures, a 7-point Likert-scale was chosen as the rating scale across the entire survey ("1" being the lowest score and "7" being the highest). The 7-point scale was deemed fitting for this study, as it offers a broad range of points, but with each being distinguishable, in addition to having a middle-point which makes up a neutral viewpoint, which was considered to be beneficial. The 7-point scale gives the opportunity to have a "slight", "moderate", and "moderate" positive and negative options in the scale. This produces more nuanced results than, for example, 5-point rating scales, where having three degrees of positive and negative answers is not possible.

Here, the specifics of the survey will be outlined (to see the questionnaire in full, see Appendix 1. Note: the "titles" of the questions and conditions are included in the appendix, but did not appear to the respondents). First, demographic information, political leaning, and vaccine status and support were measured. Specifically, these measures were age, gender, political leaning (left-right), asking people if they are fully vaccinated against COVID-19, and if yes, what their reasons (multiple answers were allowed) for getting vaccinated were ("to protect others", "to minimize risk of COVID-19", "because the authorities recommends it", "to avoid restrictions for unvaccinated", "people acquainted to me are recommending it", "I was pressured by my employer", and "other" which was accompanied by a text box to specify answers. Another option was "no" to sort the respondents into vaccinated and unvaccinated, and then followed a rating scale measuring support for vaccination against COVID-19. After these initial questions were answered, the participants were randomly selected to one of five different conditions, which resulted in each respond being shown one of five different texts at random. The text describes an unknown person, who believes that COVID-19 can be a potential

threat, and who also believes that vaccinations work, but who has decided against getting vaccinated against COVID-19, and the text explains the (moral) reasoning behind their decision. The person in the condition is described as acknowledging both the threat of COVID-19 and a belief that vaccinations work to ensure that the respondents consider that the decision to not get vaccinated was not made due to misconceptions related to the vaccine, but was the result of moral values.

The five different texts are based on one of four relevant moral foundations (plus one control condition) and explains a reason for not getting vaccinated, which is anchored in one of the moral foundations specifically related to the distinct moral profile of people with anti-vaccination attitudes, as suggested by Amin et al., (2017), and Rossen, Hurlstone, Dunlop, and Lawrence (2019). Specifically, one reasoning is related to a high degree of liberty (it is a matter of personal freedom), one is related to a high degree of purity (the vaccination is unnatural/the body should be kept pure), one is related to a low degree of trust in authority (one should not get vaccinated just because the authorities say so). In addition to these moral foundations, which are distinct to the moral profile of people with anti-vaccination attitudes, one condition is related to the moral foundation of harm/care (concern about potential harmful side effects). The decision to include the harm/care condition was made to be able to compare the other foundations to the harm/care foundation, which is one of the most universal moral foundations. It is hypothesized that this condition will be met with more understanding than the others, as these concerns should apply more broadly to the respondents. Finally, a control condition, which gives no moral reasoning for not getting vaccinated, but simply states that the person does not want to get vaccinated.

After having read the condition, the participant is asked to rate how understanding they are of the reasoning for not getting vaccinated described in the text (not at all understanding-highly understanding), how much they identify with the person in the text (not at all-highly), which counter arguments they would give in support of vaccination (this question is strictly qualitative), and finally, their general attitude toward people, who choose to not get vaccinated against COVID-19 (not at all understanding-highly understanding). The three questions are both answered by a rating score (1-7), and a text box, where participants are asked to explain their attitude, which must be filled out to proceed.

The questionnaire was constructed and distributed through Qualtrics, an online surveying tool. The decision to use Qualtrics over other surveying tools was made as Qualtrics included the option to randomize respondents into one of several conditions, which made it simple to collect the data with a single survey for all five conditions. This, in turn, made both the data

collection and data analysis more straightforward. Prior to distributing the final version of the survey, the study was piloted among several people acquainted to the author, who gave their feedback on how it was read and perceived, which led to some changes to make it more understandable before the final version was distributed.

## 4.3 Data collection

Data collection consisted of online recruiting, primarily through Facebook, through the author's personal Facebook, which was also shared by people acquainted to the author, and in a Facebook group where people can distribute surveys and questionnaire, in addition to a Danish online forum (Pokernet.dk), where a link was shared along with a brief description of the study subject and an encouragement to respond to it. A total of 109 responses were collected. As participants had one of five conditions randomly distributed to them, there are variations in the number of participants in each condition, ranging from 15 to 28.

Online recruitment was considered to be the most effective way of recruiting a sufficiently large number of participants to be able to analyze the data in a meaningful way. While efficient, there are limitations related to this type of recruitment. Particularly, the sample will be biased and not representative of a broader population, which limits the statistical generalizability of the results to a broader population (Field, 2017). However, the aim of this study is not to produce statistically generalizable results, but rather to examine how people are influenced by and use morality in their attitudes toward others (and vaccination). Qualitative analysis does not necessarily aim for generalizable results for broader populations but can focus on an in-depth understanding of a phenomenon and theoretical generalizations to other contexts (Flick, 2017). As mentioned earlier, the moral foundations are thought to be universal, and the left-right distinction of moral profiles has been found to be relatively consistent cross-culturally, and therefore the left-right differences should remain relatively consistent even in a non-representative sample.

Another consequence of the data collection strategy is the uneven distribution of people who are politically left- and right-leaning. The data collection resulted in more people, who were left-leaning, answering the survey than people who were right leaning. Particularly people to the far right were few, as only three people out of 109 identified as being far right on a left-right political scale. This is unfortunate, as having more participants in this group would have provided more nuanced descriptions of this group's attitudes, along with making comparisons between the groups more useful.

A total of 109 (M=67, F=41, 1 undisclosed) (age= 22-64, Mean=36.94) responses were recorded (for an overview of the data, see Appendix 2). Eight respondents had answered that

they were not vaccinated against COVID-19 and were excluded from the main analysis. This was done as the goal was to examine how people, who are vaccinated against COVID-19, view people, who are unvaccinated. The data material from the left-out respondents will be used in the qualitative analysis. Thus, a total of 101 responses (F=38.6%, M=61.4%, Age=22-64, Mean=37.5) were considered for the analysis. These 101 were all included for the quantitative analysis, but there were variations in who filled out the qualitative answers adequately. These differences will be described in the analysis chapter.

## 4.4 Analytical approach

The quantitative analysis will contribute with descriptive statistics, covering the rating scale scores, means of scores, and differences between scores. This makes the data easy to interpret and will make it possible to uncover patterns in the data, which will be related to the different conditions and political leanings by sorting the respondents into left and right leaning groups. The qualitative analysis will attempt to uncover themes in the responses to the open-ended questions, to examine the moral dimensions of the answers of the respondents and their thematic patterns in the open-ended questions, to examine which moral value underpin their views, which moral reasons they draw upon, and how they view unvaccinated. The specific method for the qualitative analysis will be qualitative content analysis.

## 4.5 Qualitative content analysis

Qualitative content analysis is a form of text analysis that aims to uncover themes in the text, which are then coded and combined into overarching, general categories. This type of analysis requires the analyst to interpret the meaningful reality through an understanding of the context of the text, not just an analysis of the verbatim meaning (Hsieh & Shannon, 2005). It is thus anchored in the field of hermeneutics, which is the study and theory of interpretation of text. Even though qualitative content analysis provides a step-by-step framework for analysis (either rigorous or loose), the process of analysis still relies on the researcher and their ability to reflexively interpret the text and code it accordingly (Mayring, 2014). Text analysis is more than processing manifest information from written words, it depends on interpretation and figuring out how the parts relate and add together; text can be conflicting and nuanced, somebody may first say they feel one way, but other things they say may imply that there is more to their attitude than their initial statement would lead one to believe. In such instances, one cannot simply code "they feel this way" but must rely on a reflexive interpretation of all parts and the context to assess what is really going on. This sets it apart from quantitative content analysis, which simply records and codes the content of the text as it is. Quantitative

text analysis looks at the text to say something about what the text is saying by itself, qualitative content analysis looks beyond the text, to examine what meaning is being conveyed, often through a theoretical framework.

Due to the nature of the studied phenomenon in the present article, interpreting the text responses "beyond what they say" is necessary, as the aim is to uncover how participants use moral reasoning and moral resources, which are unlikely to be expressed directly. For example, if somebody writes as a reason to get vaccinated that people ought to get vaccinated to protect elderly or sick people from the virus, this is related to the moral foundation of harm/care for others – even though the person does not explicitly describe it in such a general way. The same goes for someone who argues that not getting vaccinated is OK because it is nobody else's business whether they get vaccinated or not; they do not explicitly say that it relates to the moral principle of liberty, but clearly, they consider it to be a question of personal choice. Therefore, reflexive interpretation of the text data is necessary in this type of analytical work, to uncover what meaning is being conveyed beyond the text itself, which aligns with the views in Wagoner (2012); meaning-making is a process.

Specifically, the focus will be on the reasoning, the evaluation of the reasoning in the text, and which moral resources and reasoning the participants draw upon to justify their position, and their attitudes toward unvaccinated people, as conveyed by their text answers rather than the rating answers. It is important that this basic model of analysis is structured and laid out in advance, as content analysis is not the same as "free analysis", and maintaining the systematic approach is necessary (Mayring, 2014). It is also important in this type of qualitative analysis to show how the arguments and categories and patterns are theoretically grounded because this strengthens the usefulness and validity of the analysis. Quantitative elements can be brought in to support the analysis, for example by examining the frequency of different types of categories (Mayring, 2014). In the present study, this can be done by comparing the frequency of the distinct moral foundations used in the moral reasoning in support of vaccination (or support for non-vaccination).

In the following, a concrete procedural model for the qualitative analysis will be outlined. Content analysis should follow a theoretical orientation which is predefined, in this case the analysis will be theoretically founded in the theoretical framework outlined in the previous chapter, but also the overall aim of the study. What this means is that the themes identified in the text must be related to attitudes regarding vaccination and/or COVID-19, and people who do not get vaccinated. Each response can be coded multiple times if it touches on several relevant themes, and an answer can also not be coded if it is not relevant to the research area.

Each qualitative question explore a distinct nuance of the overall question of what people's attitude toward unvaccinated are. The first question, "Hvor forstående er du over for begrundelsen…" relate to the moral reasoning of the person in the condition. The second question "I hvor høj grad identificerer du dig med…" is about the respondent themselves, whether they identify with the person described in the condition, which implies comparing with their own reason(s) for getting vaccinated. The next question asks participants: "Hvilke modargumenter vil du give i støtte for vaccination mod COVID-19?", which is supposed to explore how the respondents draw upon their own (moral) resources when constructing arguments in favor of vaccination. The final question ("Hvad er din generelle holdning til…") is about a general attitude toward unvaccinated, which go beyond the conditions, to explore which themes relating to unvaccinated without the restrictions of the other questions emerge. First, an open and inductive coding will be done, to find the themes in the text material. These themes will be grouped into broader categories, which will be divided into two groups of either supportive or not supportive answers, depending on whether their answer shows support for the person in the condition or non-vaccination in general, or whether their answers support vaccination. The themes will be coded overall, after which the material will be coded by each condition separately. Finally, the coding will be done through the lens of political ideology, with the same grouping as in the quantitative analysis. These results will be summarized and related to the theoretical framework.

This section has outlined the methodological considerations behind the research design, along with a description of the approach to both construction of the survey, data collection, and the analytical approach. In the following, the results of the analysis will be presented.

# 5. Analysis

Here, the data material will be analyzed. First, the data is analyzed descriptively to give an overview of the data and relevant mean scores and tendencies. This is followed by the qualitative data analysis, where each question will be analyzed separately to examine the qualitative aspects of the text answers that respondents use in explaining their attitudes. Results will be related to the theoretical framework.

## 5.1 Quantitative analysis

The analysis was conducted by examining rating scores and how these are related to the different conditions and political leaning ratings. The respondents are grouped by political leaning in two different ways. First, respondents are sorted into "total left" and "total right" groups, where all three "left" and "right" ratings respectively are grouped. Afterwards, respondents are sorted into "polarized and moderate groups", where "far left" and "left" make

up a polarized left-leaning group, "slightly left", "central", and "slightly right" make up a moderate group, and "right" and "far right" make up a polarized right-leaning group. This is done to examine whether the more politically polarized groups have different attitudes than the more moderate groups.

### 5.1.1 Initial parameters

The majority of the respondents identified as left-leaning (52.5% left, 29.7% were right-leaning, 17.8% central). In addition, the people on the left are more polarized than those on the right. Specifically, half (15) of all respondents to the right are "slightly" right, with just two (of 30) being far right, while 33 (out of 53), who identify as left-leaning, are either moderate (24) or far left (9). This means that the left-leaning group is further to the left than its counterpart on the right, which must also be considered.

The figure below shows the reasons selected by respondents for getting vaccinated.

**Figure 1**: Reasons for getting vaccinated:
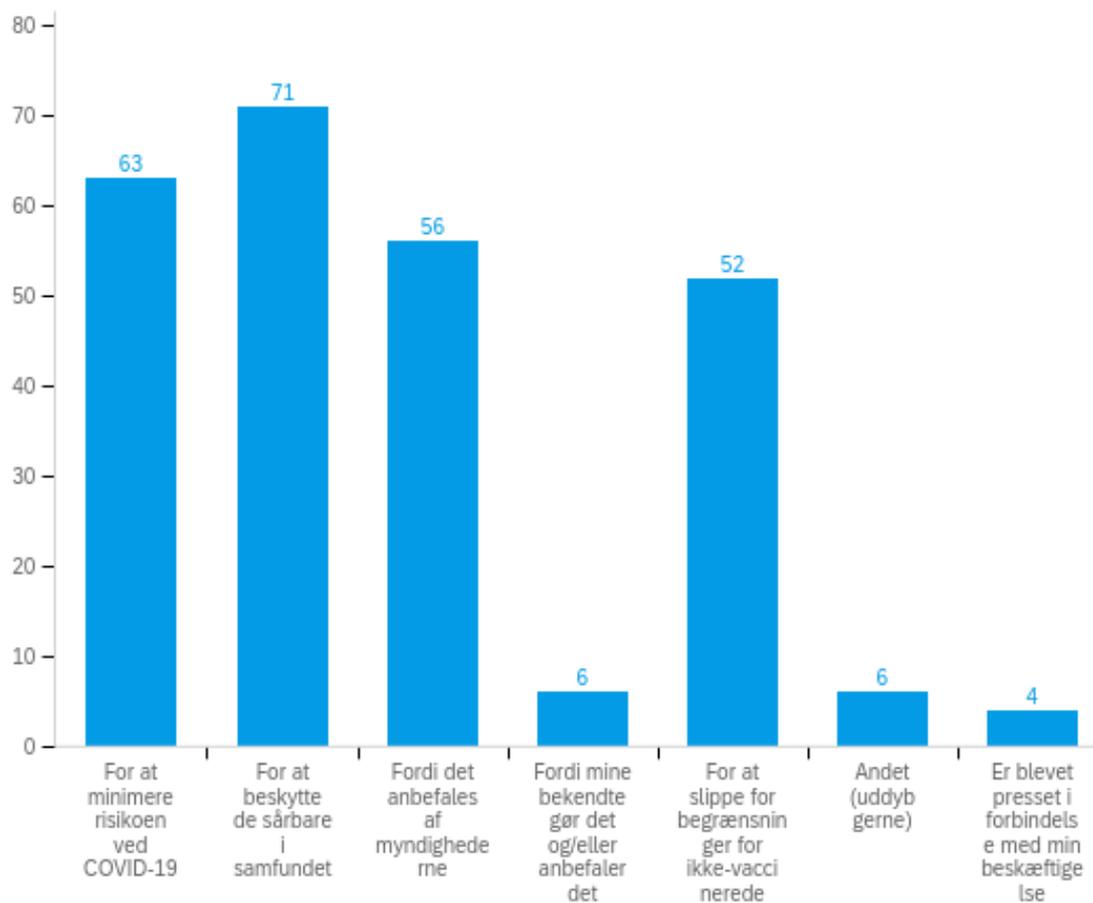


The four most cited reasons correspond closely to one of the moral foundations: protecting vulnerable people is based on the moral foundation of care/harm, following the authorities is related to authority, avoiding restrictions is related to liberty, and minimizing personal risk is related to personal harm. The mean left-right political leaning scores of people in the four most

prominent reasons for getting vaccinated was: to minimize risk 3.32, to protect vulnerable 3.38, because authorities recommend it 3.34, to avoid restrictions for unvaccinated 3.63. Three of these are very similar but getting vaccinated to avoid restrictions is further to the right than the remaining three, which is not surprising considering this reason's strong relation to the right-leaning version of liberty (personal freedom). Below support for vaccination against COVID-19 is shown:

**Table 1: S**upport for vaccination distribution:

| Support for vaccine against COVID-19: | N | Percent | Cumulative Percent |
|---|---|---|---|
| 1) I meget lav grad | 2 | 2,0 | 2,0 |
| 2) I lav grad | 2 | 2,0 | 4,0 |
| 3) I delvist lav grad | 3 | 3,0 | 6,9 |
| 4) Neutral | 5 | 5,0 | 11,9 |
| 5) I nogen grad | 8 | 7,9 | 19,8 |
| 6) I høj grad | 35 | 34,7 | 54,5 |
| 7) I meget høj grad | 46 | 45,5 | 100,0 |
| Total | 101 | 100,0 | |

In total, 88.1% of the respondents supported vaccines to some, a high, or a very high degree. Below, the mean support for vaccination based on the how the respondents identified politically is displayed:

**Table 2:** Support of vaccination against COVID-19 by political leaning:

På en skala fra 1-7, i hvor høj grad støtter du vaccination mod COVID-19?

| Political leaning: | Mean | N | Std. Deviation |
|---|---|---|---|
| 1) Meget langt mod venstre | 5,78 | 9 | 2,048 |
| 2) Mod venstre | 6,33 | 24 | ,702 |
| 3) En smule mod venstre | 6,05 | 20 | 1,234 |
| 4) Centralt | 6,17 | 18 | ,924 |
| 5) En smule mod højre | 5,87 | 15 | 1,922 |
| 6) Mod højre | 5,69 | 13 | 1,548 |
| 7) Meget langt mod højre | 4,50 | 2 | 2,121 |
| Total | 6,01 | 101 | 1,353 |

**Table 3**: Sorted by total left and right:

På en skala fra 1-7, i hvor høj grad støtter du vaccination mod COVID-19?

| Political leaning | Mean | N | Std. Deviation |
|---|---|---|---|
| Left | 6,13 | 53 | 1,210 |
| Central | 6,17 | 18 | ,924 |
| Right | 5,70 | 30 | 1,745 |
| Total | 6,01 | 101 | 1,353 |

**Table 4**: Same as above, but polarized groups:

På en skala fra 1-7, i hvor høj grad støtter du vaccination mod COVID-19?

| Political leaning: | Mean | N | Std. Deviation |
|---|---|---|---|
| Pol. Left | 6,18 | 33 | 1,211 |
| Moderate | 6,04 | 53 | 1,358 |
| Pol. Right | 5,53 | 15 | 1,598 |
| Total | 6,01 | 101 | 1,353 |

People on the right were slightly less supportive of vaccination against COVID-19 than the central, moderate and left groupings, but overall support for vaccination was high.

### 5.1.2 Analysis of conditions

Here the data is interpreted in relation to the respective framing conditions, which will be interpreted through the lens of the theoretical framework.

**Table 5:** Distribution of participants by political score and condition:

| | Harm: | Authority: | Purity: | Liberty: | Control: | Total N per political leaning: |
|---|---|---|---|---|---|---|
| Far left: | 0 | 2 | 3 | 3 | 1 | 9 |
| Left: | 4 | 6 | 5 | 7 | 2 | 24 |
| Slightly left: | 3 | 3 | 8 | 4 | 2 | 20 |
| Central: | 4 | 3 | 4 | 1 | 6 | 18 |
| Slightly right: | 2 | 7 | 2 | 1 | 3 | 15 |

| | | | | | |
|---|---|---|---|---|---|
| Right: | 2 | 5 | 3 | 3 | 0 | 13 |
| Far right: | 0 | 0 | 1 | 0 | 1 | 2 |
| Total N per condition: | 15 | 26 | 26 | 19 | 15 | N=101 |

The mean support for vaccination based on each condition was also considered, as large variations would likely have implications for the results. There were some variations but support for vaccines were rather high across all conditions.

**Table 6:** Mean support of vaccination for responders in each condition:

| Harm: | Authority: | Purity: | Liberty: | Control: | Mean: |
|---|---|---|---|---|---|
| 6.13 (SD=0.915) | 5.92 (SD=1.262) | 5.77 (SD=1.818) | 6.47 (SD=0.697) | 5.87 (SD=1.552) | 6.01 (SD=1.353) |

It is somewhat surprising that the respondents in the purity condition were the least supportive of vaccinations considering this group were made up by relatively many left-leaning respondents. The mean scores of the first question ("Hvor forstående er du over for begrundelsen for ikke at blive vaccineret, som er beskrevet i tekststykket?) based on conditions were analyzed with the following results:

**Table 7**: Mean understanding per condition and overall:

| Harm: | Authority: | Purity: | Liberty: | Control: | Mean: |
|---|---|---|---|---|---|
| 4.2 (SD=2.077) | 3.65 (SD=1.979) | 2.96 (SD=2.126) | 3.68 (SD=1.857) | 3.67 (SD=1.676) | 3.56 (SD=1.972) |

As anticipated, the respondents were the most understanding of the harm condition and the least understanding of the purity condition. Along with fairness, harm/care is the moral foundation that people in general value the highest, therefore it is not surprising that reasoning related to concerns about harm seems to be the most understandable.

At the other end of the spectrum is the purity condition, which the respondents were the least understanding of (even though the respondents in this condition were the least vaccine-supportive). This was also expected based on the theory. Graham et al. (2011), who examined the moral profiles of groups of different political views, found that every political group placed the least importance on the moral foundation of purity than the other four foundations (liberty was not included).

The reasons described in the purity condition are more related to questions of beliefs that propose a different perspective, a critical view on science and medicine altogether, which can be more difficult to empathize with if you do not subscribe to these values. The purity condition challenges the basic premise that vaccines are necessary and useful, rather than acknowledge the usefulness but deciding to opt out for other reasons. Even if somebody disagrees with a person who considers vaccination to be a personal choice, that person is still fundamentally acknowledging that it is a choice between opting out of a useful vaccine or not. But the purity condition changes the premise; it does not assume the choice is the same as in the other conditions: a choice of whether to take a vaccine that is beneficial or not, but rather it is skeptical of the value of vaccination. It instead posits another alternative health perspective, wherein vaccination is questionable in itself, which people, who support vaccination and the scientific basis for it, may be inherently more against than they are against people who believe vaccines work but opt out for other reasons. Therefore, it may be considered more polarized to opt out for reasons related to purity than for other reasons, which are more likely to be a matter of personal preference.

The control condition was expected to promote low levels of understanding but turned out to be indistinguishable from several other conditions. It is possible that this condition, while not explicitly using moral reasoning, is still interpreted as relating to the moral foundation of liberty, as the reasoning for not getting vaccinated, "because they do not feel like it", also implies that it is a personal choice that they have made, which ought to be respected even if there are no other reason. However, it can also be related to the small sample size. The following table displays the mean ratings of the second question scores (identification with the condition), based on the different framing conditions.

**Table 8**: Mean identification by condition:

|  | Harm: | Authority: | Purity: | Liberty: | Control: | Mean: |
|---|---|---|---|---|---|---|
| Mean by condition: | 2.27 (SD=1.387) | 2.19 (SD=1.524) | 1.85 (SD=1.567) | 1.95 (SD=1.393) | 1.87 (SD=1.356) | 2.02 (SD=1.449) |

The identification with the person in the condition is much lower than the understanding of the reasoning for not getting vaccinated. This is not surprising, given that the respondents are themselves vaccinated. They may show some degree of understanding toward the reasons for opting out of vaccination, but identifying with them might be more difficult. Harm is still the highest and purity is still lowest, but the differences are small.

### 5.1.3 Analysis of political leanings

In this section, the participants will be grouped by their political leanings in the two manners described previously. The focus will be on examining patterns in how these answers from the different political groups match or diverge from the theory along with comparing differences between left and right to draw general tendencies for further inquiry.

**Table 9**: Grouped total left and right mean rating scores Question 1:

|  | Harm: | Authority: | Purity: | Liberty: | Control: | Mean: |
|---|---|---|---|---|---|---|
| Total left (N=53): | 4.43 (SD=2.070) | 4.00 (SD=1.483) | 2.94 (SD=1.843) | 3.57 (SD=1.505) | 3.00 (SD=1.225) | 3.53 (SD=1.694) |
| Central: (N=18) | 2.75 (SD=1.258) | 3.33 (SD=3.215) | 2.25 (SD=2.500) | 7.00* (SD=X) | 4.00 (SD=1.789) | 3.39 (SD=2.200) |
| Total right (30): | 5.25 (SD=2.363) | 3.43 (SD=2.193) | 3.5 (SD=2.811) | 3.25 (SD=2.630) | 4.00 (SD=2.160) | 3.73 (SD=2.318) |

*Indicates a single person

**Table 10**: Polarized and moderate groups:

|  | Harm: | Authority: | Purity: | Liberty: | Control: | Mean: |
|---|---|---|---|---|---|---|
| Polarized left (N=33 | 5.00 (SD=1.414) | 4.13 (SD=1.642) | 2.62 (SD=1.506) | 3.10 (SD=3.10) | 3.33 (SD=1.528) | 3.48 (SD=1.603) |
| Moderate (N=53) | 3.44 (SD=2.186) | 3.62 (SD=2.103) | 2.79 (SD=2.119) | 4.5 (SD=2.168) | 3.45 (SD=1.508) | 3.43 (SD=2.005) |
| Polarized right (N=15) | 6.00 (SD=1.414) | 3.00 (SD=2.345) | 4.25 (SD=3.202) | 4.00 (SD=2.646) | 7.00* (SD=X) | 4.2 (SD=2.541) |

Due to the low number of N in several of these cross-fields, the results will only be interpreted analytically in cases where there is at least multiple participants. Even so, analysis that consider both political leaning and condition must be considered with caution, and the interpretation of

the results will focus on the mean scores for all the conditions and groups. In general, people on the right were more understanding of the reasons for not getting vaccinated than both the central and the left leaning groups. This was expected based on the theoretical framework, as right-leaning individuals have been shown to generally place a more balanced importance on the different moral foundations than people on the left (and on average higher importance).

Both left- and right-leaning groups were more understanding of harm than the other conditions. It was expected to be the case for the left, while the right can possibly be explained by the frame being about the risk of personal harm, which may be more in line with right-leaning individuals' view on this foundation as opposed to showing care for others. The moderate group having a close to average degree of understanding of harm possibly reflects that they are more pro-vaccines than the right and less understanding in general, but place less value on the care/harm foundation than the left.

Based on condition means alone, the understanding of purity was well below the other conditions. However, for the right-leaning groups, purity was similar to several of the other conditions. The total right had a mean understanding of 3.5, and the polarized right had a 4.25 understanding of purity, which is similar to their overall mean, which indicates, in line with the theory, that the right tend to value the different moral foundations relatively balanced. Both right groupings had a fairly low understanding of authority, which was to be expected as the condition implies a low degree of trust in authority, while is a moral value that people on the right tend to put more importance on, generally disliking disobedience. Conversely, the left were quite understanding of the low authority condition, suggesting they may place less value on authority in general, in line with the theory. Additionally, the left were little understanding of the purity, liberty, and control conditions, which aligns with these two (or three, depending on whether control is interpreted to be associated with liberty) moral values appealing little to the left.

Here follows the tables of degree of identification with the person in the condition based on the different political groups:

**Table 11**: Mean identification, total left and right groups:

|  | Harm: | Authority: | Purity: | Liberty: | Control: | Mean: |
|---|---|---|---|---|---|---|
| Total left: | 1.57 (SD=0.535) | 1.82 (SD=0.603) | 1.75 (SD=1.390) | 1.64 (SD=0.633) | 2.2 (SD=1.643) | 1.75 (SD=0.998) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Central : | 2.5 (SD=1.291) | 3.00 (SD=2.646) | 1.25 (SD=0.500) | 3.00* (SD=X) | 1.17 (SD=0.408) | 1.89 (SD=1.367) |
| Total right: | 3.25 (SD=2.062) | 2.33 (SD=1.826) | 2.5 (SD=2.345) | 2.75 (SD=2.872) | 2.5 (SD=1.732) | 2.57 (SD=1.449) |

**Table 12**: Mean identification, polarized groups:

| | Harm: | Authority: | Purity: | Liberty: | Control: | Mean: |
|---|---|---|---|---|---|---|
| Polarized left: | 1.75 (SD=0.500) | 1.75 (SD=0.707) | 1.25 (SD=0.707) | 1.6 (SD=0.699) | 2.33 (SD=2.309) | 1.64 (SD=0.895) |
| Moderate : | 2.22 (SD=1.481) | 2.31 (SD=1.494) | 1.79 (SD=1.424) | 1.83 (SD=0.753) | 1.45 (SD=0.522) | 1.92 (SD=1.253) |
| Polarized right: | 3.5 (SD=2.121) | 2.6 (SD=2.510) | 3.25 (SD=2.630) | 3.33 (SD=3.215) | 5.00* (SD=X) | 3.2 (SD=2.336) |

The differences between left and right are clear in these results. Respondents on the right identify more with the conditions than the left. In either grouping, not a single condition in the left promoted as much identification as the corresponding lowest condition for the right.

A noteworthy result is that the total left group identified less with harm than any other condition, and identification was also relatively smaller compared to the other conditions than for the previous question. This is eye-catching considering that this group were the most understanding of the harm condition as a reason to not get vaccinated. The harm condition relates to the concern of potential harm suffered through side effects by getting vaccinated, thus the respondents are likely to empathize with and be understanding of the concern of harm. However, the person described in the condition does not themself display the moral foundation of care for others, as the person in the condition opts out of vaccination due to personal concerns. In this way, the person in the condition is putting their own concern of harm above getting vaccinated to protect others, which is effectively the opposite of showing care for others. This can explain why there is a relatively high degree of understanding of this condition, but a low degree of identification from the left-leaning individuals with this condition. By choosing

to not get vaccinated because of concerns of side effects, the person is making a choice to put their own perceived well-being over care for others, which people on the left unsurprisingly struggle to identify with. The fact that people are understanding of the concern of side effects may indicate that they themselves might have had concerns or at least acknowledged them – but they got vaccinated anyway, because they considered it the right (moral) thing to do. This may also relate to the high degree of understanding and identification of the right; an individual making the decision for themselves to not get vaccinated due to personal concerns may resonate more with the right's value of individuals' right to choose and decide for themselves without being affected by the advice of others. In both conditions, the right groups identified the least with the authority condition, which reflects that people on the right tend to place importance on authority, as this condition displays a low degree of value in authority. below, the mean scores of general attitudes toward unvaccinated people, were measured based on left and right groupings:

**Table 13:** Mean understanding of unvaccinated in general, total left and right groups:

| Total left: | 2.98 (SD=1.308) |
|---|---|
| Central: | 2.94 (SD=1.662) |
| Total right: | 3.57 (SD=2.223) |
| Mean: | 3.15 (SD=1.693) |

**Table 14:** Polarized groups:

| Polarized left: | 2.91 (SD=1.378) |
|---|---|
| Moderate: | 3.06 (SD=1.524) |
| Polarized right: | 4.00 (SD=2.563) |

These results support what has been found consistently across the other questions, namely that right-leaning respondents are generally more understanding of people, who are unvaccinated,

while those who identify as left-leaning or central are less understanding, and the differences between left and right is increased in the polarized groupings.

**5.1.4 Quantitative analysis summary**
The data suggest that differences between the right-leaning groups and the other political ideology groups exist. Generally, the more polarized groups to the left were less understanding and identified less with the condition/unvaccinated in general, and the more polarized right group were more understanding of and identified more with the condition/unvaccinated in general. The central and left leaning groups were closer to each other than either of these groups were to the right on all questions in both types of grouping across the questions, although the polarized left were on average slightly less supportive than the other groups, in line with the theory. When considering the political ratings individually, the "slightly right" respondents are similar to the other ratings, suggesting that the primary difference in support of non-vaccination is between those that identify as moderately and far right and the rest.

Another notable finding is that the respondents' mean understanding of the reasoning for not getting vaccinated described in the condition was 3.56, while overall the mean of understanding of unvaccinated in general was only 3.15. The purity was the only that promoted less understanding than the mean general degree of understanding. This difference may be the result of how the conditions were framed. The person in the condition was deliberately described as believing both that vaccines work, and that COVID-19 is potentially threatening, which meant that perceiving them as believing in conspiracy theories or other perceived "extreme" beliefs was discouraged, which may have contributed to the respondents considering the person in the condition moderate. This point will be discussed in depth in the Discussion section.

## 5.2 Qualitative Analysis
In this section the results of the qualitative content analysis coding will be outlined, to examine the qualitative aspects of the reasons that people provide in relation to their attitudes toward unvaccinated. A total of 109 qualitative responses were considered for this analysis. Eight were put aside as the respondents had answered that they were unvaccinated and thus did not meet the criteria for the main analysis. They will be considered on their own at the end of the analysis.

**5.1.1 Q1: "Hvor forstående er du over for begrundelsen for ikke at blive vaccineret, som er beskrevet i teksten?"**
In addition to the 8 respondents excluded because they were unvaccinated, an additional 11 respondents had not filled out the text box in a satisfying way (e.g., just putting a character to finish the questionnaire; it was mandatory to write something in the text boxes) and were

excluded. Thus, a total of 90 text answers were coded for the first question. The distribution of these 90 respondents across condition and political leaning is shown in the table below:

**Table 15:** Distributions of participants by condition and political leaning (Note: there are variations in participants per condition and leaning between the questions).

|  | Harm: | Authority: | Purity: | Liberty: | Control: | Total N per political leaning: |
|---|---|---|---|---|---|---|
| Far left: | 0 | 2 | 3 | 2 | 0 | 7 |
| Left: | 3 | 6 | 5 | 7 | 2 | 23 |
| Slightly left: | 3 | 2 | 7 | 4 | 2 | 18 |
| Central: | 3 | 3 | 3 | 1 | 6 | 16 |
| Slightly right: | 2 | 6 | 1 | 1 | 3 | 13 |
| Right: | 2 | 4 | 3 | 2 | 0 | 11 |
| Far right: | 0 | 0 | 1 | 0 | 1 | 2 |
| Total N per condition: | 13 | 23 | 23 | 17 | 14 | N=90 |

The first, inductive coding resulted in the following overall themes, sorted into groups that were understanding of the condition and reasons that were not understanding.

**Table 16:** Total themes coded for Question 1:

| Reasons in support of the person in the text | Reasons against the person in the text | Mixed: |
|---|---|---|
| Personal choice: 29 | Care for others: 16 | Information/misinformation: 4 |
| Fear of vaccinations (incl. side effects) is OK: 6 | Trust in authority: 11 | |
| Underlying conditions is OK: 2 | No good/valid reason/requires good reason: 11 | |
| Vaccines are unnatural: 2 | Selfish: 8 | |
| COVID not dangerous: 2 | Vaccinations is similar to other medicine/treatment, or no more unnatural than other medicine/things we do: 7 | |

| | | |
|---|---|---|
| Vaccines not effective: 2 | Other negative attitude toward unvaccinated/unvaccinated reasoning (dumb, hopeless, moronic, lazy, do not know what they are talking about): 8 | |
| Should respect people regardless of decision: 2 | Vaccines are safe/harmless: 5 | |
| People should not feel pressured to get vaccinated: 1 | Defiance: 4 | |
| Distrust of authorities: 1 | Knowledge/awareness of threats/vaccine being harmless demands responsibility: 3 | |
| | Worry about/consequences of loss of trust in authorities: 2 | |
| | Health care system collapse: I | |
| | Economic consequences: 1 | |
| | Obligation to others to have an opinion: 1 | |
| | Vaccines less dangerous than COVID: 1 | |
| | Cannot understand not seeing benefits: 1 | |
| | Person is uninformed: 1 | |
| | Vaccines not unnatural: 1 | |
| | Not understanding of conspiracy theories: 1 | |

Themes were grouped with similar themes to form broader categories. These categories were then sorted by whether they were understanding of non-vaccination or if they were not-understanding of non-vaccination. The two categories of answers that were understanding of non-vaccination were:

- (1) *individual factors* – related to the person's individual rights, their personal concerns related to the vaccine, generally reasons related to the individual. This theme is sorted into two subcategories:
    - o *Individual freedom/rights*: reasons related to personal choice, the individual's right to make their own decision, which should be respected, people should not feel pressured etc.
    - o *Individual concerns:* reasons related to concerns about side effects from the vaccine, fear of needles, underlying conditions.
- (2) *skepsis* – related to a sense of skepsis toward vaccination and/or the overall COVID-19 strategy. Can be related to skepsis about vaccine recommendations, vaccine

development, distrust of authorities, or skepsis of restrictions. Skepsis is not necessarily related to conspiracy beliefs.

The three categories that were not-understanding of non-vaccination were:

- (1) *common good/responsibility* – people should show care for others, they should be obliged to take responsibility for the safety of others, opting out of vaccination requires a good reason/there is no valid reason to not get vaccinated described in the condition.

- (2) *trust* – displaying trust in authority, in the safety of vaccines, that vaccines are less dangerous than COVID-19, trusts the recommendations.

- (3) *negative attitudes toward unvaccinated* – related to describing the person in the condition, their reasoning, or unvaccinated in general in a negative way, belittling them or their reason by attributing negative descriptions of them. For example, calling them selfish, defiant, ignorant, "dumb", or "lazy".

A total of 134 reasons were coded. Of these, 47 reasons were understanding toward the condition or non-vaccination, 83 were not understanding, and four were related to misinformation. Of the 47 reasons for being understanding, 40 related to the individual category, of which 32 related to freedom, eight to concerns related to vaccinations, and seven related to skepsis. For the not-understanding answers, the distribution of the reasons were: 34 related to common good/social responsibility, 27 were about trust, and 22 were about negative attitudes toward unvaccinated and/or their reasoning. For a detailed view of the coding process, how the themes fit into the categories and the specific themes within each condition and each political leaning, see Appendix 3. The answers related to information/misinformation were mixed, meaning that these reasons were used both in support of the person in the condition, and the loss of authority resulting in a rise in misinformation that could result in anarchy. These answers point to societal conditions as a cause for a type of behaviors or attitudes, particularly the spread of misinformation (e.g., "Jeg forstår godt, at hvis man frygter vaccinen, grundet misinformation og manglende viden, kan det føles grænseoverskridende at skulle tage imod den.", #12, Appendix 3).

Below the themes are sorted based on the different conditions.

**Table 17**: Themes by condition:

| Condition: | Understanding: | Not understanding: |
|---|---|---|
| Harm: | **Total: 13**<br>Individual: 11 | **Total: 10**<br>Common good: 4 |

| | | |
|---|---|---|
| | (Freedom: 7<br>Concerns: 4)<br><br>Skepsis: 2 | Trust: 4<br>Negative attitudes: 2 |
| Authority: | **Total: 11**<br>Individual: 9<br>(Freedom: 8<br>Concerns: 1)<br><br>Skepsis: 2 | **Total: 22**<br>Common good: 6<br>Trust: 12<br>Negative attitudes: 4 |
| Purity: | **Total: 8**<br>Individual: 5<br>(Freedom: 5)<br><br>Skepsis: 3 | **Total: 21**<br>Common good: 7<br>Trust: 11<br>Negative attitudes: 3 |
| Liberty: | **Total: 7**<br>Individual: 7<br>(Freedom: 6<br>Concerns: 1) | **Total: 22**<br>Common good: 11<br>Trust: 1<br>Negative attitudes: 10 |
| Control: | **Total: 8**<br>Individual: 8<br>(Freedom: 6<br>Concerns: 2) | **Total: 9**<br>Common good: 6<br>Negative attitudes: 3 |

The respondents in the harm condition provided the most reasons for being understanding, which echo the finding from the quantitative analysis. A relatively large part of the understanding reasons within this condition were related to individual concerns, which was also the specific moral framing for this condition, suggestion that the harm framing was an influential reason for the high degree of understanding. Purity and liberty being the least understood reasons is also mirrored, these two conditions are also the two conditions with the most left-leaning respondents, which likely plays a role in the low understanding toward these two foundations. Control being balanced is surprising. It is possible that due to the low amount of reasoning in the control condition, not many reasons are produced in response. The answers may reflect whether the respondents are generally understanding of people opting out of

vaccination rather than the specific reasons (the frequency of understanding/not understanding questions is identical to that of the fourth question (see Appendix 6)).

Interestingly, the most frequent theme across all responses were related to considering vaccination to be a personal choice. It was unexpected that this answer would be so common, particularly when considering that the respondents were no more understanding of the liberty condition than of control or authority in the quantitative analysis, and the liberty condition had the lowest ratio of understanding to not understanding reasons of all the conditions. It was speculated that this may have been the result of the distribution of participants, yet there is a relatively even distribution of coding of "personal choice" between the political leanings. Some respondents argued that they agreed with vaccination being a personal choice, but they did not agree with opting out of vaccination for this reason alone, which is reflected in the "requires good reason/no valid reason" being the most frequent reason for being not-understanding in the liberty condition. It is likely that there are different thresholds of when the respondents consider it a personal choice. Some think that it is only a personal choice if somebody has a "good" reason, others believe it is entirely up to the individual's personal wish. There was a high degree of negative attitudes toward unvaccinated in the liberty condition, as more than half of the respondents in this condition (9 of 17 (one respondent had two distinct negative attitudes coded)) expressed negative attitudes toward the person in the condition/unvaccinated, which is higher than in any other condition, and which may reflect that the respondents were overwhelmingly left-leaning and may indicate a moral colorblindness of the left (Haidt & Graham, 2007). The authority condition spurred a lot of answers related to trusting in authority – the opposite of what the condition implied, which is likely partly due to the high number of right-leaning individuals in this condition, but may also reflect that Danes tend to have a high degree of trust in authorities (Nielsen, Roepstorff, & Petersen, 2022). As speculated in the previous section, purity was in some ways a unique condition. The most frequent reasons given in response to the purity condition were that vaccination against COVID-19 is similar to other medicine/treatment, or no more "unnatural" than many other things we do, suggesting that many not-understanding respondents had a unique perspective on this reasoning compared to the others. This supports what was speculated above, namely that people are not understanding of the basic premise of the purity condition, which opposes vaccination and medical science, which may result in it being perceived as more "out there" and therefore less understandable. One respondent wrote: " Det er bare generelt åndssvagt, da vi på alle mulige måder går imod denne "naturens" orfen" (#90, Appendix 2), which illustrates the sentiment that this perspective is difficult to empathize with. This is likely a characteristic of the moral foundation of purity as

a whole, as it relates to "spiritual" concerns, which may be more difficult to empathize with for outsiders compared to other, arguably more generally acknowledged values such as personal freedom. Below, the respondents sorted into the same political groups as in the quantitative analysis to examine the differences between the left and right in particular and investigating if the tendencies align with the theory.

**Table 18**: Total left and right groups:

| | Understanding: | Not understanding: |
|---|---|---|
| Left (N=48): | **Total: 25**<br>Individual: 21<br>(Freedom: 16<br>Concerns: 5)<br><br>Skepsis: 4 | **Total: 50**<br>Common good: 25<br>Trust: 12<br>Negative attitudes: 13 |
| Central (N=16): | **Total: 8**<br>Individual: 8<br>(Freedom: 7<br>Concerns: 1) | **Total: 8**<br>Common good: 2<br>Trust: 3<br>Negative attitudes: 3 |
| Right (N=26) | **Total: 14**<br>Individual: 11<br>(Freedom: 9<br>Concerns: 2)<br>Skepsis: 3 | **Total: 25**<br>Common good: 7<br>Trust: 12<br>Negative attitudes: 6 |

**Table 19**: Polarized groups:

| | Understanding: | Not understanding: |
|---|---|---|
| Polarized left (N=30): | **Total: 14**<br>Individual: 12<br>(Freedom: 9<br>Concerns: 3)<br><br>Skepsis: 2 | **Total: 35**<br>Common good: 20<br>Trust: 3<br>Negative attitudes: 12 |

| | | |
|---|---|---|
| Moderate (N=47): | **Total: 23** <br> Individual: 20 <br> (Freedom: 17 <br> Concerns: 3) <br><br> Skepsis: 3 | **Total: 40** <br> Common good: 11 <br> Trust: 20 <br> Negative attitudes: 9 |
| Polarized right (N=13): | **Total: 10** <br> Individual: 8 <br> (Freedom: 6 <br> Concerns: 2) <br><br> Skepsis: 2 | **Total: 8** <br> Common good: 3 <br> Trust: 4 <br> Negative attitudes: 1 |

Respondents on the left were more likely to refer to reasons that related to the overall category common good/social responsibility for being not-understanding and less to reasons related to trusting authority (particularly in the polarized sorting), while people on the right were more likely to refer to reasons related to trust in authority and less about common good/social responsibility. The central/moderate groups were also more likely to refer to reasons related to trust. This aligns with the theory, as common good/social responsibility is directly related to the moral foundation of harm/care which people on the left place more importance on, while trust is related to the moral foundation of authority, which is mostly associated with right-leaning moral values.

Additionally, the left groups were more likely to describe the person in the condition negatively. More than half (12 of 22) of the negative attitudes about unvaccinated were coded from the polarized left, despite this group making up a third of the total respondents. In total, more than a third of all themes coded from polarized left respondents were negative attitudes toward unvaccinated/the condition, supporting the moral colorblindness of the left notion of Haidt and Graham (2007); because left-leaning individuals do not recognize the moral values besides harm and fairness, they struggle to empathize with behavior that do not accommodate these moral values and ascribe it to negative traits. In line with the results of the quantitative analysis, people who identified as right or far people on the right and far right were more understanding than their left and far left counterparts.

**5.1.2 Q2: "I hvor høj grad identificerer du dig med personen i tekststen?"**
While the first question examines how the respondents view the reasoning in the condition and their attitudes toward the person described, the second question asks them if they identify with

the reasons, which ought to give an insight into how their personal reasons compare to the moral reasoning of the condition.

In addition to the 11 respondents who did not fill out the previous question, a further seven respondents did not fill out this question adequately, which meant a total of 83 participants filled out the answers. Three of these answers were referring to their previous answer without answering this question specifically. These answers were not coded; even if their previous answer may still convey their general attitude, the point is to examine identification with the person in the condition. An additional four respondents, who had answered Question 1, did not answer Question 2. To see the distribution of participants by political ideology and condition, see Appendix 4.

**Table 20**: Total themes coded for Question 2:

| Reasons that identify with/support condition: | Reason that do not identify with/support condition: | Mixed: |
|---|---|---|
| Personal choice: 14 | Trust in authority: 19 | Misinformation: 3 |
| People should be respectful of people's choice: 4 | Care for others: 11 | |
| Distrust of authority: 4 | Other negative attitude toward unvaccinated: 7 | |
| Underlying condition is OK: 2 | Requires a valid reason/no valid reason provided: 6 | |
| Media coverage concerns: 2 | Benefits outweigh risks: 5 | |
| Fear of vaccines is OK: 2 | Vaccines are safe: 3 | |
| Vaccines are unnatural: 1 | Selfish: 2 | |
| Uncertainty if vaccines are worth it for young people: 1 | Vaccines are not unnatural: 2 | |
| Only events with major societal consequences should not be personal choice: 1 | Knowledge = responsibility: I | |
| | People should have an opinion on societal issues: 1 | |
| | Vaccination is convenient: 1 | |
| | Reciprocity: 1 | |
| | It was an easy decision to get vaccinated: 1 | |
| | Cannot see why one would opt out: 1 | |
| | I endorse vaccination: 1 | |

For the detailed coding process, see Appendix 4.

A total of 96 reasons were given. 62 were not supportive of/identifying with non-vaccination, 31 supported non-vaccination/identified with the condition, and 3 were related to misinformation. Of the 62 not understanding themes, 20 related to the category of common

good/social responsibility, 30 related to trust, 9 related to negative attitudes toward unvaccinated, and 2 did not fit into any of these categories and were sorted as "other". Of the 31 understanding reasons, 23 reasons related to individual reasons, 19 freedom, 4 concerns, and 8 to skepsis. Three answers were related to misinformation.

**Table 21**: Themes by condition:

| Condition: | Identifying with/supporting non-vaccination: | Not identifying with/supporting vaccination: |
|---|---|---|
| Harm: | **Total: 6**<br>Individual: 4<br>(Freedom: 3<br>Concerns: 1)<br>Skepsis: 2 | **Total: 9**<br>Common good: 2<br>Trust: 4<br>Negative attitudes: 2<br>Other: 1 |
| Authority: | **Total: 5**<br>Individual: 2<br>(Freedom: 1<br>Concerns: 1)<br>Skepsis: 3 | **Total: 18**<br>Common good: 4<br>Trust: 12<br>Negative attitudes: 2 |
| Purity: | **Total: 8**<br>Individual: 6<br>(Freedom: 6)<br>Skepsis: 2 | **Total: 15**<br>Common good: 6<br>Trust: 7<br>Negative attitudes: 2 |
| Liberty: | **Total: 8**<br>Individual: 7<br>(Freedom: 7)<br>Skepsis: 1 | **Total: 10**<br>Common good: 3<br>Trust: 4<br>Negative attitudes: 2<br>Other: 1 |
| Control: | **Total: 4**<br>Individual: 4<br>(Freedom: 2<br>Concerns: 2) | **Total: 10**<br>Common good: 5<br>Trust: 3<br>Negative attitudes: 1<br>Other: 1 |

In line with the quantitative analysis, the identification with the harm condition was lower than the understanding of it. Liberty was different than for the previous question, which might be explained by several answers in the liberty condition not identifying with the person in the condition, but did not explain why, and was thus not coded. For example, answers such as "I do not" or "not at all" were not coded, as the aim of the qualitative analysis is to examine the qualitative aspects of the reasons of the respondents, not just their binary attitude. The respondents identified little with the authority condition, which was expected considering the respondents considering trust was the most frequent theme for being not-understanding in the responses to this condition on the previous question. Below, the left-right differences are examined:

**Table 22:** Total left and right groups

|  | Identifying with/supporting non-vaccination: | Not identifying with/supporting vaccination: |
|---|---|---|
| Left (N=46): | **Total: 12**<br>Individual: 11<br>(Freedom: 10<br>Concerns: 1)<br>Skepsis: 1 | **Total: 36**<br>Common good: 11<br>Trust: 20<br>Negative attitudes: 3<br>Other: 2 |
| Central (N=15): | **Total: 4**<br>Individual: 3<br>(Freedom: 1<br>Concerns: 2)<br>Skepsis: 1 | **Total: 8**<br>Common good: 3<br>Trust: 3<br>Negative attitudes: 2 |
| Right (N=22) | **Total: 15**<br>Individual: 9<br>(Freedom: 8<br>Concerns: 1)<br>Skepsis: 6 | **Total: 18**<br>Common good: 6<br>Trust: 7<br>Negative attitudes: 4<br>Other: 1 |

**Table 23**: Polarized grouping:

|  | Understanding: | Not understanding: |
|---|---|---|
| Polarized left (N=28): | **Total: 7** <br> Individual: 6 <br> (Freedom: 5 <br> Concerns: 1) <br> Skepsis: 1 | **Total: 21** <br> Common good: 8 <br> Trust: 9 <br> Negative attitudes: 2 <br> Other: 2 |
| Moderate (N=44): | **Total: 14** <br> Individual: 12 <br> (Freedom: 10 <br> Concerns: 2) <br> Skepsis: 2 | **Total: 37** <br> Common good: 11 <br> Trust: 19 <br> Negative attitudes: 7 |
| Polarized right (N=11): | **Total: 10** <br> Individual: 5 <br> (Freedom: 4 <br> Concerns: 1) <br> Skepsis: 5 | **Total: 4** <br> Common good: 1 <br> Trust: 2 <br> Negative attitudes: <br> Other: 1 |

Both the left groups and the moderate group did not provide many reasons that was supportive of non-vaccination. Meanwhile, the polarized right grouping were more likely to provide reasons that identified with or showed understanding of the person in the condition. This is consistent with the previous results from the quantitative analysis. The polarized right provided relatively many reasons related to identifying with skepsis compared to the other leanings. It may seem somewhat conflicting that people on the right, who tend to place a higher importance on the moral value of authority, are more skeptical of authority and the vaccine recommendations. However, the moral foundation of authority does not correspond to trust in the government but relates to a more general inclination to follow authority. At the same time, right-leaning individuals tend to be critical of extensive government involvement, favoring personal freedom and individuality. One respondent wrote:

"Jeg tror på at individets suverænitet er ekstrem vigtig at beskytte for at sikre det enkelte menneskes frihed og menneskerettigheder. Derfor er det også vigtigt at respektere og være forstående overfor de mennesker som ikke ønsker at blive vaccineret. På samme tid

skal de der ønsker at blive vaccineret også have mulighed for at gøre dette, uden at de bliver set ned på af folk der er i mod at blive vaccineret." (#42, Appendix 4).

This response encapsulates the moral value of liberty, the importance of personal freedom and agency, and while it was not coded as displaying skepsis due to the absence of explicitly skepticism, it illustrates the potential concerns related to too much authority pressure, in that it compromises the basic freedoms of the individuals.

### 5.1.3 Q3: "Hvilke modargumenter vil du give i støtte for vaccination mod COVID-19?"

When coding the data material to this question, it became apparent that some participants had interpreted this question as though they were asked to provide counter argumentation *against* vaccinations. 12 respondents were identified as having understood the question in this way. These 12 participants will be analyzed separately, as they are effectively answering the opposite of the question intended.

#### *5.1.3.1 Main analysis*

More participants did not fill out this question. In addition to the 12, who understood the question differently and the 14 people, who did not answer the previous questions, a further 5 did not answer this question, resulting in a total of 70 coded responses. A total of 109 themes were coded. The exact distribution of participants by condition and political leaning can be found in Appendix 5.

**Table 24:** Total themes coded for Question 3 (main analysis):

| Arguments in favor of non-vaccination: | Arguments in support of vaccinations: |
|---|---|
| Personal choice: 4 | Care for others: 25 |
| Good reasons exist: 1 | Trust in authority: 17 |
| Unlikely I can influence their decision: 1 | Minimize personal risk: 9 |
| If risks outweigh benefit, should not get vaccinated: 1 | Vaccines prevent disease: 8 |
| | It is about society as a whole (not the individual): 4 |
| | Other negative attitude: 4 |
| | Benefits outweigh risks: 3 |
| | Vaccines enable a quicker reopening of society: 3 |
| | COVID vaccine similar to other vaccines: 2 |
| | Less strain on health care system through vaccination: 2 |
| | Vaccines are only effective if enough get vaccinated: 2 |
| | Vaccines useful if vulnerable or associating with vulnerable: 2 |
| | Inquire about person's beliefs/concerns: 1 |

| | |
|---|---|
| | Vaccines have most likely saved lives and lessened symptoms: 1 |
| | Civil duty to get vaccinated: 1 |
| | Vaccines save millions of lives: 1 |
| | Vaccinated get less sick: 1 |
| | Convenience: 1 |
| | Fewer limitations when travelling: 1 |
| | "Better safe than sorry": 1 |
| | There are always side effects to medical treatment: 1 |
| | Washing hands instead of getting vaccinated comparison: 1 |
| | People get other vaccines without questioning them: 1 |
| | Normalization of society: 1 |
| | We live unnatural lives in many ways: 1 |
| | Modern living require modern tools (vaccinations): 1 |
| | Long term side effects of COVID-19: 1 |
| | Risk of mutation and contagion: 1 |
| | Vaccines being chemical does not make them bad: 1 |
| | What if nobody got vaccinated?: 1 |
| | Vaccines lessen burden: 1 |
| | Vaccine against flu is known and safe: 1 |

For the detailed coding process, see Appendix 5.

A total of 109 themes were provided, 102 were in support of vaccination, seven were against it. 43 of the vaccine support reasons were related to concerns about common good/social responsibility, 41 to trust, five to negative attitudes about unvaccinated, and 13 did not fit into the other categories and were coded as "other", though nine of these were "minimize personal risk", which is also related to (personal) harm. Seven reasons were provided as arguments in favor of non-vaccination, six of these were related to individual reasons, five freedom, one concern, and one was categorized as pertaining to "other".

**Table 25**: Themes by conditions:

| Condition: | Understanding: | Not understanding: |
|---|---|---|
| Harm (N=9): | **Total: 0** | **Total: 14**<br>Common good: 5<br>Trust: 9 |

| | | |
|---|---|---|
| Authority (N=18): | **Total: 2**<br>Individual: 1<br>(Freedom: 1)<br>Other: 1 | **Total: 27**<br>Common good: 11<br>Trust: 11<br>Negative attitudes: 2<br>Other: 3 |
| Purity (N=15): | **Total: 4**<br>Individual: 4<br>(Freedom: 5) | **Total: 20**<br>Common good: 6<br>Trust: 11<br>Other: 0 |
| Liberty (N=16): | **Total: 1**<br>Individual: 1<br>(Concern: 1) | **Total: 21**<br>Common good: 11<br>Trust: 4<br>Negative attitudes: 3<br>Other: 3 |
| Control (N=12): | **Total: 0** | **Total: 19**<br>Common good: 10<br>Trust: 5<br>Other: 4 |

There were variations in the prevalence of different themes compared to the previous questions, which was expected as those that were supportive of non-vaccination were asked to provide reasons in favor of vaccines. Negative attitudes were as expected few, which was anticipated as people asked to provide a reason in favor of something are presumably more likely to produce arguments in favor of vaccination rather than attacking non-vaccination.

**Table 26**: Total left and right groups

| | Understanding: | Not understanding: |
|---|---|---|
| Left (N=38): | **Total: 6**<br>Individual: 5<br>(Freedom: 4<br>Concern: 1)<br>Other: 1 | **Total: 56**<br>Common good: 24<br>Trust: 20<br>Negative attitudes: 4<br>Other: 8 |
| Central (N=13): | **Total: 0** | **Total: 21**<br>Common good: 7 |

|  |  | Trust: 12 Negative attitudes: 0 Other: 3 |
| --- | --- | --- |
| Right (N=19) | **Total: 1** Individual: 1 (Freedom: 1) | **Total: 25** Common good: 12 Trust: 9 Negative attitudes: 1 Other: 3 |

**Table 27**: Polarized groups:

|  | Understanding: | Not understanding: |
| --- | --- | --- |
| Polarized left (N=27): | **Total: 5** Individual: 4 (Freedom: 3 Concerns: 1) Other: 1 | **Total: 39** Common good: 14 Trust: 16 Negative attitudes: 3 Other: 6 |
| Moderate (N=33): | **Total: 1** Individual: 1 (Freedom: 1) | **Total: 48** Common good: 20 Trust: 22 Negative attitudes: 1 Other: 5 |
| Polarized right (N=10): | **Total: 1** Individual: 1 (Freedom: 1) | **Total: 15** Common good: 9 Trust: 3 Negative attitudes: 1 Other: 2 |

The left-right differences do not appear to be similar to the other questions, with three of the four left and moderate groups refer more often to themes of trust, while the right refer more often to common good. Variations were not unexpected due to the difference in respondents, but even so this difference is interesting. The question is framed in a way to encourage respondents to construct arguments for an attitude (in favor of vaccination), whereas the other questions are related to their personal attitude toward the condition and unvaccinated in general. When constructing arguments in favor of something, the aim is to convince and persuade others,

rather than explain one's personal beliefs. Therefore, people try to reason in a way that is expected to appeal to others. It is thus embedded in the social context of an issue and the discourse related to it, rather than necessarily personal. Therefore, due to the vaccination discourse, the reasons for being understanding constructed here were rooted in the dominant themes of pro-vaccine rhetoric: care for others/common good and trust in authority, but also minimizing personal harm was a frequent theme, because it is expected to appeal to others' interests. Many answers were effectively just listing of rational arguments in favor of vaccination without any personal context, e.g., "Beskyttelse af svage borgere. Undgåelse af alvorligt COVID-19 forløb. Myndighederne anbefaler det" (#30, Appendix 5). According to Haidt, the aim of moral reasoning is to persuade others of one's own values (Haidt, 2012). The rational reasons that we produce for our views may not reflect our personal values, but rather we produce them for the purpose of persuading others, which may be part of the explanation of why the distribution of common good/trust is inconsistent compared to the other questions.

### 5.1.3.2 Analysis of different interpretations of question

Here, the answers from the 12 respondents who interpreted the question to be about support of non-vaccination will be analyzed:

**Table 28:** Themes coded for Question 3 (support of non-vaccination analysis):

| Reasons to be understanding: |
| --- |
| Most do not need vaccine/should not vaccinate healthy/COVID not very dangerous: 3 |
| There has been a lot of pressure to get vaccinated: 2 |
| Personal choice: 2 |
| Herd immunity through infection possibly a better strategy: 2 |
| Financial costs are high: 2 |
| Global inequality perspective: 1 |
| Vaccination development was rushed: 1 |
| Risk of side effects from vaccine worse than risk from COVID-19 for young people: 1 |
| Financial agenda in getting everyone vaccinated: 1 |
| Vaccine not effective for long: 1 |
| Folkeimmunitet (sic) |
| Vaccine side effects: 1 |
| Vaccinated still got sick: 1 |

The 12 respondents, who interpreted the question in a different way, provided 19 reasons, all of them understanding. Five were related to individual reasons, 13 were related to skepsis and one was categorized as "other". This distribution of reasoning is interesting considering that for every other question, individual reasons were far more common as a reason to be understanding of non-vaccination than skepsis (including for the unvaccinated respondents themselves). However, when prompted to provide arguments against vaccination, these 12 respondents provided overwhelmingly skepsis-related reasons. This difference is particularly noteworthy when considering that, for the first question, these same 12 respondents had "personal choice" coded seven times, while for the fourth question, personal choice was coded four times by these same participants. This supports what was speculated above regarding argumentation being a social activity; they may feel that it should be a personal choice, but this reasoning is not sufficiently rooted in the social framework the vaccination discourse and is therefore not thought to be a very strong argument for opting out of vaccinations. Instead, people look for reasons rooted in something "valid", something rational and factional – such as the economic costs of the restrictions.

### 5.1.4 Q4: "Hvad er din generelle holdning til mennesker, der har valgt ikke at blive vaccineret mod COVID-19?"

There were once again differences in who filled out this question. There were also variations in who filled out this question. The distribution of participants can be found in Appendix 6.

**Table 29**: The overall themes identified in the responses to Q4:

| Reasons for understanding: | Reasons for not understanding: | Other: |
|---|---|---|
| Personal choice: 20 | Trust in authority: 9 | Misinformation: 2 (Personal choice as long as people are well-informed; Understanding that people who are misinformed will opt out) |
| Fear of vaccines is OK: 7 | No good reason/requires good reason: 8 | |
| Underlying condition is OK: 5 | Other negative attitude: 8 | |
| Should respect unvaccinated/people with different beliefs: 5 | Selfish: 6 | |
| People should not feel pressured: 4 | Care for others: 6 | |
| Good reasons to opt out exist: 3 | Not understanding of conspiracy theories: 5 | |

| | | |
|---|---|---|
| Their choices do not affect me: 1 | Unvaccinated must accept consequences: 2 | |
| Vaccines not as effective as proclaimed: 1 | Health care sector concerns if people do not get vaccinated: 2 | |
| Healthy people under 50 should not get vaccinated: 1 | Common good: 2 | |
| Vaccines are not an obligation: 1 | Herd immunity: 2 | |
| Should aim to avoid division between pro- and anti-vaccine people: 1 | Should get vaccinated if able: 1 | |
| | Our lives are unnatural in many ways: 1 | |
| | COVID-19 vaccines no different from other vaccines: 1 | |
| | Vaccines are safe: 1 | |
| | Not understanding of people not being well-informed: 1 | |
| | Hypocrisy: 1 | |
| | Should cooperate during crisis: 1 | |
| | Unvaccinateds' beliefs are based on fear, not facts: 1 | |
| | Skepsis was OK at first, not any more: 1 | |
| | Getting vaccinated is what is best for both individual and society: 1 | |
| | Vaccine deniers say no because it is an attack on their freedom: 1 | |
| | Many unvaccinated are uninformed: 1 | |
| | Problematic if nobody or only elderly got vaccinated: 1 | |
| | Cannot understand desire to be contrarian: 1 | |
| | Vaccines strengthen immune system: 1 | |
| | Vaccination is no big deal: 1 | |
| | Not understanding of "extreme" attitudes: 1 | |
| | Unvaccinated opt out of society: 1 | |

| | | Benefits outweigh risks: 1 | |
|---|---|---|---|

For full coding, see Appendix 6.

Overall, 121 reasons were coded, 69 of these were not understanding, 50 were understanding and 2 were related to misinformation/information. The not-understanding answers consisted of 27 reasons related to common good/social responsibility, 16 related to trust, and 25 related to negative attitudes toward unvaccinated and/or unvaccinateds' reasoning. Of the understanding reasons, 43 related to individual factors, 31 freedom, 12 concerns, 3 to skepsis and 4 to other reasons ("good reasons exist" and "we should aim to avoid division between pro- and anti-vaccine people").

There was a higher ratio of understanding themes compared to the previous questions. This may be related to this question being more open than the previous ones, which may implore the respondents to consider in which scenarios they would be understanding of non-vaccination, whereas the reasons in relation to the conditions are specified for the first two questions (and the previous question is concerned with pro-vaccine arguments only). For example, four and five respondents respectively said that people should not feel pressured, and that their decision should be respected, which are general sentiments more likely to apply to unvaccinated as a group in general than the person described in the condition. At the same time, the responses to this question had a large degree of negative attitudes toward unvaccinated, suggesting that negative preconceptions about unvaccinated makes up a considerable part of vaccinateds' attitudes toward unvaccinated.

**Table 30:** Total left and right groups:

| | Understanding: | Not understanding: |
|---|---|---|
| Left (N=45): | **Total: 28**<br>Individual: 24<br>(Freedom: 15<br>Concerns: 9)<br>Skepsis: 1<br>Other: 3 | **Total: 39**<br>Common good: 14<br>Trust: 7<br>Negative attitudes:<br>17<br>Other: 1 |
| Central (N=15): | **Total: 9**<br>Individual: 8<br>(Freedom: 6<br>Concerns: 2)<br>Skepsis: 1 | **Total: 16**<br>Common good: 7<br>Trust: 5<br>Negative attitudes: 4 |

| | Understanding: | Not understanding: |
|---|---|---|
| Right (N=22) | **Total: 13**<br><br>Individual: 11<br><br>(Freedom: 10<br><br>Concerns: 1)<br><br>Skepsis: 1<br><br>Other: 1 | **Total: 14**<br><br>Common good: 6<br><br>Trust: 4<br><br>Negative attitudes: 4 |

**Table 31**: Polarized groups:

| | Understanding: | Not understanding: |
|---|---|---|
| Polarized left (N=29): | **Total: 18**<br><br>Individual: 16<br><br>(Freedom: 8<br><br>Concerns: 8)<br><br>Skepsis: 1<br><br>Other: 1 | **Total: 25**<br><br>Common good: 10<br><br>Trust: 2<br><br>Negative attitudes: 12<br><br>Other: 1 |
| Moderate (N=41): | **Total: 23**<br><br>Individual: 18<br><br>(Freedom: 15<br><br>Concerns: 3)<br><br>Skepsis: 2<br><br>Other: 3 | **Total: 38**<br><br>Common good: 13<br><br>Trust: 13<br><br>Negative attitudes: 12 |
| Polarized right (N=12): | **Total: 9**<br><br>Individual: 9<br><br>(Freedom: 8<br><br>Concerns: 1) | **Total: 6**<br><br>Common good: 4<br><br>Trust: 1<br><br>Negative attitudes: 1 |

The left produced more reasons for being understanding than was the case for the other questions. This might indicate that the general number of reasons for being understanding of the previous questions was related to the somewhat restrictive conditions, which theoretically should appeal little to left-leaning individuals. It may appear that there is a contradiction between the relatively large number of understanding reasons here and the left's low mean understanding in the quantitative analysis. This will be interpreted in the Discussion.

The frequency of themes related to individual concerns from the left reflects the importance that this group places on concerns related to harm/care. When thinking in general terms about unvaccinated, they produced more reasons for potentially being understanding than for the other questions, and largely due to the frequency of answers related to individual concerns. One response that encapsulated the breadth and nuance of reasonings for this question was the following:

> "Det er et svært spørgsmål, fordi jeg er uforstående over for NOGLE og forstående over for andre. Jeg er generelt ret uforstående over for folk, der kæder vaccination sammen med en form for konspiration, men i højere grad forstående over for folk, der af den ene eller anden grund ikke føler sig tryg ved vaccinen.
>
> Jeg har hørt et radioprogram, hvor en kvinde deltog, som mente, at der var gift i vaccinerne. Jeg er uforstående for hendes teori om en sammensværgelse, men forstående for, at hun fravælger vaccinen, når hun nu tror på, at der faktisk er gift. Selvom jeg ikke forstår argumenterne (eller identificerer mig med dem), kan jeg godt forstå fravalget."
>
> (#26, Appendix 6)

Other than producing more reasons for being understanding than previously, the left relied on common good and especially negative attitudes toward unvaccinated. The left thus displays a very high degree of negative attitudes toward unvaccinated, which was expected based on the theory of moral colorblindness. The moderate group provided reasons that were generally balanced between the different categories. Once again, the right and far right groups stand out as being more understanding than the other groups, supporting the interpretation that right-leaning individuals are more understanding of unvaccinated.

**5.1.5 Unvaccinated group**
Here, the data from the unvaccinated respondents will be summarized. Overall, the unvaccinated respondents produced relatively more reasons related to skepsis compared to individual reasons than the vaccinated respondents who were understanding of non-vaccination, however individual reasons, in particular personal choice, were still the primary themes that respondents described as their reasons, suggesting that both unvaccinated and people, who were vaccinated but were generally supportive of the decision to opt out of vaccination, relied predominantly on reasons related to individual freedom.

The skepsis themes were in a sense qualitatively broader in range than the skepsis reasons provided from people, who were vaccinated, as they spanned from general sentiments ("vaccines are unnatural"), to attitudes that were related to polarized negative views on the vaccination development and the government handling. It was not unexpected that there could

be more polarized views on vaccination among this group, considering this group had made the choice to opt out, while the other respondents had gotten vaccinated even if they acknowledged some degree of skepsis. One respondent described the act of getting vaccinated as "(…) blive manipuleret til at værer midicinske forsøgs kaniner for WHO" (U. #1, Appendix 3). Another was highly critical of the government handling "(…) At regeringen presser og segregerer, er helt på højde med det som Hitler gjorde! Der er en meget lille forskel på det." (U. #5, Appendix 3). These responses display some of the more highly polarized perceptions about vaccinations and the government handling. Another respondent was skeptical due to previous medical scandals that had negative consequences:

> "Grundlæggende pro-vaccine, med traditionelle vacciner i normalt forløb (10 årige processer eller mere) som er gennemtestet. Et skræk eksempel er Pandemrix-vaccinen mod H1N1 influenza, som gav alt for mange, især unge under 20 år, narkolepsi. Thalidomidskandalen i 1960erne er et andet skrækeksempel. Derfor skal man overveje nøje om risiko for sygdom er risikoen værd for bivirkninger ved medicin." (U. #3, Appendix 3).

This response is interesting, because such concerns ought to be met with constructive, scientifically-based feedback, examining the differences between the contexts of the development of the Pandemrix vaccine and the COVID-19 vaccine (The Pandemrix influenza vaccine was approved and distributed in Europe during the H1N1 influenza pandemic in 2009, and has later been associated with the development of narcolepsy (Sarkanen, Alakuijala, Dauvilliers, & Partinen, 2018). Subsequently, the development of the vaccine has been criticized for largely ignoring quality and safety precautions during the development and distribution of the vaccine (Doshi, 2018)). Concerns such as these should not be ignored simply because they are skeptical of the vaccination, and should be acknowledged. Even though the Pandemrix vaccine has been reviewed and considered safe (Lægemiddelstyrelsen, 2014), such unexpected negative effects that were given media attention have likely contributed to some degree of vaccine hesitancy. The negative effects of unexpected side effects on trust in vaccination and the health authorities will be expanded upon in the Discussion. This answer also illustrates another important point found in vaccine hesitancy literature, which is that vaccine hesitancy can be vaccine-specific (Hickler, Guirguis, & Obregon, 2015). This is another argument against making blanket (often negative) statements about people because of their attitude on an issue, instead one strive to inquire about their views in a non-judgmental way.

### 5.1.6 Qualitative analysis summary

Here, the results of the qualitative analysis will be summarized. Three themes were consistently found to be the most frequent across the questions, namely personal choice, trust in authority, and care for others. These themes each correspond to a moral foundation, and underpinned one of the categories as well. These answers were the most often referred to directly, but the frequency of these answers is also due to these themes being interpreted slightly more broadly than some other themes because they are based on principles. For example, people who talked about trust in science were coded as trust in authority, as trusting in the advice from experts and scientists is regarded as trusting in the advice of scientific authorities (which depends on trusting the authorities, compared to personally examining the scientific evidence for the vaccines).

It must be considered that the questions differ in form, therefore some questions are more likely to prompt (or discourage) certain types of answer. For example, asking people to produce arguments in favor of vaccination naturally leads to less answers related to negative attitudes toward unvaccinated because negative attitudes toward unvaccinated is not as likely to be considered a pro-vaccination argument the way that reasons rooted in concerns of common good or trust in authority is. The second question regarding identification is also less likely to result in answers related to negative descriptions of unvaccinated, as the respondents are answering if they identify with the respondents, which ought to reflect their personal reasons for getting vaccinated, which are more likely to be based on other considerations than their attitudes toward those that have not gotten vaccinated. The first and the fourth question are therefore the two questions that display the least restrictive perception of unvaccinated, in relation to the specific case of the condition (Q1) and in a general sense (Q4).

Trust in authority was generally high, although the left tended to favor negative attitudes and common good on the first and fourth question. Trust being frequent in a Danish context aligns with Danes having a high degree of trust within Denmark in the health authorities and the government (Petersen, Lindholt, & Jørgensen, 2021). How trust in particular relates to vaccination attitudes and compliance will considered in the Discussion.

The left, right, and moderate/central groupings differed in the sort of themes they tended to rely on, which was particularly clear in the polarized sorting. Specifically, (for Q1 and Q4) the left relied the most on themes related to common good and negative attitudes toward unvaccinated, a tendency that was stronger in the polarized left grouping. Both the left (17 of 39) and the polarized left (12 of 25) produced a high degree of answers related to negative attitudes toward unvaccinated for the fourth question (but also the first), suggesting that people

on the left and far left are highly likely to consider unvaccinated in negative terms, which may reflect a moral colorblindness of the left.

The moderate group were generally balanced between common good, trust, and negative descriptions across the questions. Both the left and the central/moderate tended to be predominantly not-understanding, providing more reasons that were not understanding for every question. The right-leaning groups were consistently found to use relatively more themes that were understanding compared to the other groups. This result echoes the finding of the quantitative analysis, and there is a strong indication that people on the right are more understanding of people, who are unvaccinated than those on the left or moderates. Additionally, the right and far right produced a similar number of themes for being not-understanding related to common good and trust, but very few related to negative attitudes toward unvaccinated, demonstrating that even when these respondents were pro-vaccination, they were much less likely to have negative attitudes toward unvaccinated than the other political leanings. These findings suggest that negative attitudes about unvaccinated are common across the political spectrum, except among the right, indicating that non-vaccination is a polarized issue.

The unvaccinated respondents produced reasons primarily related to individual reasons, which was the same as the vaccinated individuals, who were supportive of non-vaccination. Particularly vaccination being a personal choice was the primary reason, others argued that COVID-19 posed a very limited threat to most people (including themselves), and therefore they did not wish to get vaccinated. Such views can hardly be considered "extreme" or related to conspiracy theories, but instead rely on a different set of values. These results will be further interpreted and related to existing literature in the discussion and relevant methodological considerations will also be considered.

# 6. Discussion:

In this chapter, the methodology will be evaluated, the results from the analysis will be interpreted through the theory and put in into a practical and broader context, and implications of what has been found will be discussed. Suggestions to counteract moral polarization based on the results, theory and other research will be drawn, and suggestions for future research on the topic of moral polarization will be outlined.

## 6.1 Methodological considerations

In this section, reflections related to the methodology of the study will be outlined, including considerations and limitations related to the sample and the analytical process. Additionally, suggestions for alternative approaches are laid out.

### 6.1.1 Sample

As mentioned previously, there are limitations to the use of an online survey, which is not very representative. Some did not fill out the qualitative answers adequately, others filled out some but not all qualitative questions. The decision was made to include every valid answer for each question regardless of whether the respondent had answered every other question adequately. Ideally, all participants would have filled out every question text box adequately, but this was not the case. An alternative approach would be to exclude respondents, who had not filled out every question, but this would mean the exclusion of approximately 40 responses, which was considered to be damaging for the qualitative analysis. Additionally, it was considered that the results were still useful for qualitative interpretation even though the respondents varied, seeing as the aim of the qualitative analysis was to explore the nuances of attitudes provided in the given context, rather than making strict comparisons between the questions (questions were compared, but within their specific semantic context, which has been described previously). Answers were sorted into groups of understanding/not-understanding, but this sorting was done primarily for the cause of creating an overview of the material. Rather the goal is to look at how different types of answers are used and reasoned, which is doable even with inconsistencies in the responses between which respondents filled out which questions. The relatively limited sample size for this study means that drawing conclusions from the findings must be done so only cautiously. The linking between results and theory is rooted in theoretical generalizations and related to previous research, but must still be considered critically.

### 6.1.2 Interpretation of questions and ratings

Qualitative content analysis relies on the analyst's interpretation of what is being said, which results in potential mismatches between what is being said by the respondents and how it is interpreted; the researcher cannot be certain that the method captures the real context of the respondents (Burnard, 1995, as cited in Bengtsson, 2016). The meaning that respondents are trying to convey may be interpreted differently, something may be interpreted as being ambiguous, and other reasons may also influence responses, such as respondents answering what they think the researcher wants to hear. Answers to a questionnaire is a constructive process in a specific context of filling out a questionnaire, which may influence the responses that are produced.

For the interpretation of the qualitative data, Mayring (2014) argues in favor of using multiple coders when conducting a qualitative content analysis to ensure intercoder reliability. This was not possible in the present study, as it was worked out by a single person. However, it became clear that having multiple coders to ensure a higher level of reliability could have

been an advantage. While a systematic and consistent approach to coding across all the data material was used, the discretion of the analyst still played a role. Even though systematicity and consistence were things I were cognizant of, if the coding were to be done again, there would likely be slight variations, as the interpretation of answers and sorting them thematically is a process of constant evaluation and interpretation of meaning. If multiple people had coded the same data material, even with the same theoretically grounded focus points, there would undoubtedly be variations in the coding, to which a comparison and evaluation would likely have led to a stronger validity overall.

Another thing to consider is that willingness to answer some questions fully may be limited because some of the questions appear to overlap thematically, this results in the answers for some questions being "weaker" than others, even though it does not necessarily reflect the respondents attitude in a vacuum toward the question. For example, some people who filled out Q1 did not fill out Q2, or they simply referred to their previous answer, while others used fewer words and thus produced less full descriptions, which may be interpreted to mean that the interest in this question was lower but may just be the result of them having just answered a question that can be considered similar. Had the order of questions been reversed, it is likely the content of the answers had differed to some extent as well. Thematic overlap between questions is something to consider when asking people to produce qualitative text answers.

Additionally, there were examples of participants understanding the questions differently than intended. The clearest example of this was Question 3, where 12 people interpreted the question as though the aim was to provide arguments in favor of non-vaccination. This was likely interpreted differently by some because they had already provided arguments in favor of vaccination, thus assuming the question was asking for counter-arguments to the arguments they had themselves provided, rather than counter-arguments against the arguments of the condition. Unfortunately, this cause for error was not discovered during the pilot testing of the survey. While this was unintended, these answers were still coded and yielded interesting results. Even so, a question being misunderstood by such a relatively large number of participants is unfortunate, and it underlines the importance of asking questions in as clear as way as possible so that the possibility for misinterpretation is low. People interpret questions differently, and while that is unavoidable to some extent, it should predominantly be variations in the nuances of the semantic meaning, rather than the question being interpreted the opposite way of what was intended.

The fact that there were relatively more understanding reasons to the general attitudes question than the first question may seem contradictory considering that the quantitative

analysis showed that the average degree of understanding was lower for the general question than for the first question. This can be interpreted as an example of what Wagoner (2012) and Wagoner and Valsiner, 2005 argue: a rating on a scale does not reveal the entire nuance and consideration that is used in constructing an answer.

However, another important thing to consider is that the qualitative answers are not based on weighted importance, but rather every theme is coded once. What this means is that if a respondent mentions two reasons, one which is understanding and applies very generally, and one that applies to a small group of people, both one understanding and one not-understanding theme will be coded, even though one of these themes is a much stronger indicator for the respondents general attitude toward unvaccinated. This can explain the relatively balanced frequency of understanding and not-understanding answers for the third question. The polarized left described more valid reasons for opting out of vaccination related to concerns (underlying conditions, concerns of side effects) for this question. These themes, however, do not apply to all unvaccinated in general. People with underlying conditions and concerns related to side effects make up only a small part of the total group of unvaccinated, and therefore these themes are not reasons that are a strong indicator for their overall attitude toward unvaccinated, whereas answers such as one should follow the recommendations, or display care for others are more universally applicable.

This illustrates a challenge with quantifying qualitative reasoning; two people may both refer to personal choice and care for others as relevant in vaccination decisions, but they may have completely different rating-scores because the relative value ascribed to each of these considerations differs, even though this is not clear their text responses. Incidentally, this is another reason that using a mixed methodology is beneficial when attempting to examine the strength of attitudes and the nuances; analysis on its own would have had more limitations.

It should also be considered that the reasons produced are not necessarily a reflection of how people feel, according to Haidt's theory of social intuitionism. This theory posits that we intuitively like or dislike something, and that the reasons we produce as arguments for our attitudes are added post hoc; we dislike something regardless of how many reasons we can conjure up for having the attitude. We can feel that something is terribly wrong without being able to verbalize what about it we consider to be so wrong. Instead, the purpose of moral reasoning is to justify and persuade others that we are correct. This view of reasoning as having a social purpose of persuasion rather than reflecting attitudes may also be related to the tendencies seen in the responses to the third question in the qualitative analysis. This will be expanded upon in section 6.2.1.

**6.1.3 Alternative methodological approaches**

Due to the sample size being relatively small considering the number of conditions, using inferential statistics was decided against. Undoubtedly inferential statistics would have provided highly interesting results, which could to a larger degree have been used for generalizations and drawing stronger conclusions from the quantitative analysis. Conducting a similar study in the future with the use of inferential statistics should be considered a relevant point for investigation. Having a larger number of participants would also further improve the validity of the qualitative analysis, particularly when comparing between the conditions and answers based on political leanings. In a more extensive study, participants could be asked to fill out the Moral Foundations Questionnaire from the beginning in addition to the current parameters, to get a more detailed description of each person's moral profile, to examine if these corresponded to political ideology, and whether it was reflected in their answers. Such a study could contribute to strengthening the connection and examine the consistency between principle moral values and practical and political attitudes.

Gender and age differences were not included in the analysis, as the aim of the study was to examine how the different moral conditions and the participants' political views influenced their attitudes, not how this related to gender or age.

There are a number of changes that could be made to this study and the validity of the results with relatively simple modifications, but which would require more resources which were not available within the scope of this project. Nonetheless, it is thought that the findings and implications presented in this project can still contribute to shedding light on moral polarization in relation to non-vaccination.

## 6.2 Implications

In this chapter, the findings of the analysis will be related to the context of the theoretical framework. Additionally, findings will be considered within the context of existing literature, in an effort to elucidate what implications the study have, and how they can contribute to counteracting moral polarization and negative social consequences relevant in the context of moral polarization, and views on non-vaccination.

**6.2.1 Theoretical interpretation of results**

The categories which emerged in the qualitative analysis were each theoretically grounded. Most were related to moral foundations, and one (negative attitudes toward unvaccinated) was related to explicit reproach toward people with different attitudes. The common good category was related to care for others, trust to (trust in) authority, while for the understanding categories,

individual reasons were based on liberty (freedom) and harm (concerns), while skepsis related to a low degree of trust in authority.

Care and authority being the most prevalent themes for supporting vaccination can be explained by care being the most prominent moral foundation as well as highly relevant in the context of vaccination, and trust in authorities and science has been linked to vaccine compliance (Eurofind, 2020; Pagliaro et al., 2021; Algan, Cohen, Davoine, Foucault, & Stantcheva, 2021).

In general, the condition that the respondents were the most understanding of was the harm condition, which was anticipated based on the theory, and the relevance of the harm framing in relation to vaccine discourse. Similarly, purity being the least understandable condition was also anticipated for reasons that have been covered. The finding that the understanding varied in accordance with theory suggests that how the issue is framed matters, which implies that it is not the vaccine status of the person in the condition alone that determines degree of understanding. The relatively small sample means that drawing conclusions from the quantitative data should be done with extreme caution, although the qualitative analysis of the first question supports the interpretation that the harm condition was the most understandable and that purity was little understandable. Examining these indications in a larger scale study with inferential statistics in the future would be beneficial, as it would contribute to the understanding of how different moral frames influence understanding.

In line with the theoretical framework, the right were consistently more understanding of non-vaccination than the left and central groups. The left (particularly the polarized left) were generally likely to use reasons related to having negative attitudes toward unvaccinated, supporting the notion of a moral colorblindness of the left. This does not imply that these people are hateful toward others. Rather, as this group consider preventing harm to others to be the utmost moral concern in the context of COVID-19, it is not difficult to understand why those who do not prioritize the wellbeing of others are met with moral aversion. Negative descriptions of unvaccinated were also frequent among moderate respondents, including those slightly to the right. This may be the result of the issue of vaccination being an overwhelmingly supported issue in a Danish context, which means that the left-right differences are only apparent for the more polarized right leaning individuals. It likely reflects that approximately 86% of the population are vaccinated, which indicates that even moderates are much more likely to be pro vaccination than if the issue had been more divisive down the middle. The prevalence of negative attitudes toward unvaccinated suggests that vaccination is a social issue that is morally

polarized, with many reproachful attitudes toward unvaccinated. The reasons for and consequences of this is discussed throughout this chapter.

An interesting finding was that people's negative attitudes toward unvaccinated in general were more frequent than their negative attitudes toward the person in the condition, which is speculated to be the result of how the questions was framed. The person in the condition was described as a relatively nuanced person, who believed that vaccines work and acknowledged that COVID was potentially threatening, but who nonetheless opted out of vaccination for one of the reasons described. This description is likely to encourage an interpretation of this person as a "moderate" unvaccinated person, who has opted out of the vaccine for personal reasons. This means that interpreting the person in the condition as someone who believes in conspiracy beliefs is discouraged – a sentiment regarding unvaccinated that emerged in the responses to general attitudes toward unvaccinated. There were also examples of respondents describing the person in the condition as well-informed, which made them more understanding of their decision to opt out of vaccination. This illustrates an important point, which is that presenting a nuanced description of people, who hold an opposing attitude to oneself, may reduce the negative attitudes toward them. Even though the condition person still opted out, the perception that the person with a conflicting attitude was well-informed and made a choice after consulting the evidence and information made their choice more understandable. Thus, one way of counteracting polarization is to promote a more nuanced view of people with different attitudes, rather than making assumptions about them based on their belief.

Meanwhile, "unvaccinated in general" characterize a group of people based on one distinct characteristic – their (non-)vaccination status. The tendency to generalize people based on their views alone contributes to polarization. While we are inclined to categorize people and things around us, we should also be aware that people do not hold the same attitudes for the same reasons, even though our brains are wired to make us consider outgroup members to be more similar than they are, a phenomenon referred to as outgroup homogeneity (Baumeister & Vohs, 2007). We generalize outgroups, so when some of the primary themes that emerge in the public discourse surrounding vaccine hesitancy is related to skepsis in vaccinations and conspiracy beliefs, these views are likely be generalized to apply to unvaccinated as a group. The attribution of more extreme attitudes to the outgroup than what reflects reality is a common phenomenon. The international movement "More in Common" strive toward strengthening democracies and countering polarization, and in one study they found that both liberals and conservatives severely overestimate the number of people from the other side that hold extreme views (Yudkin, Hawkins, & Dixon, 2019). They call this phenomenon "the perception gap". In

addition, they found that this gap was larger for people who frequently posted political content on their social media, or who consumed various types of media. From one perspective, this seems counterintuitive, in the sense that people who are the most interested and invested in politics ought to have a more accurate assessment of the tendencies of politics. However, this is not the case due to political polarization, which among other things is exacerbated through social and biased media. This will be considered further in section 6.2.5.

Another notable finding of their research is that education is not the answer to counteract political polarization, as data shows that the more educated democrats get, the larger the perception gap gets. This is likely the result of more educate democrats having fewer conservative acquaintances, which supports Haidt's idea that the way to overcome moral disagreements is through meeting people and striving toward understanding their view and truly empathizing with them.

Both the unvaccinated and the vaccinated respondents who were understanding of unvaccinated were so primarily for reasons related to the individual concerns, predominantly personal choice, but this may not be deemed a valid, rationally constructed argument that can fulfill the social purpose of persuading others. The qualitative analysis indicated that providing argumentation in favor of, or against, something serves the social purpose of persuasion and is not necessarily rooted in how we actually feel. This mismatch between the "socially acceptable" rational argument and our actual values may contribute to a mischaracterization of people and their values. Both the unvaccinated and the vaccinated respondents provided reasons for being understanding primarily related to individual reasons, particularly personal choice, but this may not be deemed a "good", rational reason to be against vaccination. This may reflect that the discourse surrounding non-vaccination has been largely focused on concerns related to the vaccines, how they were developed, the restrictions and vaccine strategies, and less on the individual's right to decide for themselves. The discourse surrounding non-vaccination is predominantly based on concerns related to skepsis, and these concerns are often perceived as being associated with conspiracy beliefs, which results in vaccinated viewing unvaccinated as having more polarized beliefs than what is actually the case.

This underlines the importance of nuancing the discussion of non-vaccination, as there are a lot of people who can be considered "vaccine hesitant", who do not subscribe to polarized- or conspiracy beliefs. While it has been found that conspiracy beliefs are linked to vaccine hesitancy (e.g., Sallam et al., 2021; Winter, Riordan, Scarf, & Jose, 2022), an exaggerated focus on conspiracy beliefs may negatively contribute to polarization toward unvaccinated. Many likely overestimate the presence of conspiracy theorists among people who are unvaccinated.

In one study in Denmark, researchers examined the prevalence of conspiracy theorist elements in Facebook posts in three public Facebook groups that were openly critical of the authorities' handling of the COVID-19 pandemic. They found that five percent of the posts in these groups had elements of conspiratorial nature (Bengtsson et al., 2021). Thus, relatively few of the posts shared were related to conspiracy theories, more frequent were non-conspiratorial misinformation and anti-systemic criticism. The study argued that Denmark is generally low on conspiracy beliefs, a high degree of trust in public service and the news and have a well-established fact-checking system. The Facebook-study is limited in the sense it looked at three public Facebook groups, but nevertheless it illustrates that there are a large number of unvaccinated people who do not subscribe to conspiracy beliefs. They may have different concerns and worries related to vaccination, which are downplayed if people are quick to equate vaccine hesitancy with conspiracy beliefs. Other research supports the interpretation that conspiracy beliefs are not the primary cause for vaccine hesitancy. A report conducted by Epinion (2021) for Sundhedsstyrelsen found that people who were unvaccinated were less correct about a number of statements regarding the COVID-19 vaccine (development of the vaccine, whether you can contract COVID from the vaccine, whether it affects fertility etc.), which illustrates the need for more information. Furthermore, they conducted qualitative interviews and found that the extent of conspiracy beliefs among unvaccinated was limited and not one of the primary causes for people to opt out of vaccination. Eurofound (2020) also found that more than a quarter of Europe's population was hesitant regarding vaccines, mostly for reasons related to safety concerns, and also because they believe the risk of COVID-19 is exaggerated.

Another important finding in the Epinion study was that, to a number of respondents, the central issue of vaccination was that it must be a personal choice and it is a matter of freedom. The report argues that these points of view must be acknowledged and that underlining the voluntary aspect of vaccines is important. These findings align with what has been suggested in the present study, namely that the moral value of personal freedom is essential when deciding whether to get vaccinated or not for many people. Additionally, the present study has demonstrated that many people, who are vaccinated themselves, also consider vaccination to be a matter of personal choice. Thus, people who place high importance on personal choice are not inherently unlikely to get vaccinated, but should be persuaded with information. The aim of vaccine campaigns should be to strengthen vaccination support through open debate and communicating information, rather than shaming unvaccinated or accusing them of being selfish, as such moral reproaches serves only to reduce their willingness to acquire more

information. Often, people's attitudes are based on values that others may struggle to understand, which leads to the misconception that people are acting based on selfish, or otherwise negative reasons, which is related to the concept of moral blindness to the values of others. By acknowledging this moral value pluralism, polarization may be reduced.

### 6.2.2 Moral pluralism and cultural differences

Moral pluralism can help explain the differences in vaccine compliance across countries that are relatively similar ("WEIRD"), but with vastly different vaccine support. One person may disregard recommendations from the government but instead listen to the political leader of whatever party they support themselves, while others may trust the health authorities, but distrust other authority figures. The population's response to the COVID-19 recommendations are dependent on trust in the health authorities, science, and the government (Eurofound, 2020; Algan, Cohen, Davoine, Foucault, & Stantcheva, 2021), rather than a general sense of trust in authority. Danes have a high degree of trust in the health authorities (Petersen, Lindholt, & Jørgensen, 2021), which has likely been a cornerstone of Denmark's relatively strong response to the COVID-19 pandemic and the large degree of vaccination support. The vital role that trust plays in vaccine compliance and polarization will be explored further in section 6.2.4.

### 6.2.3 Moral framing of vaccine communication

Both the quantitative and qualitative analyses indicate that different moral frames influence the degree of understanding toward unvaccinated, that some moral reasons are more understandable than others, and that this is also related to political ideology. A report on vaccine hesitancy found that "one-size-fits-all"-vaccination campaigns should be discouraged, because different people react differently to different messages (Steinert et al., 2022). This finding is in line with the findings of the present study, suggesting that there must be a larger awareness to the different values that appeal to different people and that this knowledge should be used in health communication. Generally, the right and far right were more understanding of the decision to not get vaccinated, which may also be related to the way that vaccination discourse has been framed. Rossen et al. (2015) found that media framing related to climate change was often related to concerns about of preventing harm, which was considered to be a reason that liberals were generally more willing to act against climate change. The discourse surrounding vaccination has similarly been framed around preventing harm and protecting others, and this framing have likely contributed to promoting vaccination willingness among the left more than among the right.

Another aspect of communication regarding vaccination relates to the framing of the responsibility of vaccination, which contributes to polarization. The responsibility for

mitigating the COVID-19 pandemic is largely placed on the population by encouraging vaccination. People, who decide to not get vaccinated, are held personally responsible for the spread of the disease. This is particularly the case because of the nature of an infectious disease is that every sick individual poses a "direct" threat to people around them, which differs from other social issues. A study found that people who were more worried about COVID-19 made harsher moral judgments toward those that were less worried (Henderson & Schnall, 2021). Comparatively, while somebody who wants to act against climate change may harbor ill will toward a climate change skeptic, the climate skeptic is less likely to be seen as posing a direct threat to people around them. In one study examining "norm-breaking behavior" (N=94,000), it was found that half of the respondents blamed ordinary citizens for the severity of the pandemic (Bor, Jørgensen, Lindholt, & Petersen, 2021). Another large-scale cross-cultural study (N=15,233) found that there were large degrees of prejudice and antipathy toward unvaccinated, and that this degree of prejudice was as high or higher than prejudice against "common" targets of prejudice, such as immigrants, drug-addicts, and ex-convicts (Bor, Jørgensen, & Petersen, 2022). These attitudes toward unvaccinated were stronger in countries that had suffered fewer deaths from COVID-19 and had higher social trust (such as Denmark), likely because a high degree of vaccine support result in more moral condemnation of people who deviate from this norm. The direct threat of danger present in disease-as-a-social-issue likely exacerbates polarization beyond the polarization on many other divisive social issues; it is not the attitude of the person, but the person themself who represents a threat.

If unvaccinated are blamed for the crisis, negative attitudes and moral reproach of them will likely increase, which in turn increases polarization, and decreases the likelihood that either side will be understanding or empathetic toward the other side. Furthermore, pressure from authorities to get people to take the vaccination and extensive restriction may also contribute to the erosion of trust in the authorities and institutions of society, which will be expanded on in the following section.

### 6.2.4 Trust in authority, vaccinations, and polarization

The qualitative analysis showed that trust (and distrust/skepsis) is a central theme for being supportive of vaccination. This finding is supported by a large body of research, which shows that trust in authorities, governments, and science is related to vaccine compliance – and that a loss of trust in these institutions is related to vaccine hesitancy (Eurofound, 2020; Winter, Riordan, Scarf, & Jose, 2022; Pivetti, Di Battista, Paleari, & Hakoköngäs, 2021; Algan, Cohen, Davoine, Foucault, & Stantcheva, 2021; Pagliaro et al., 2021; Plohl & Musil, 2020). For this reason, ensuring that vaccination communication and initiatives do not damage the trust in these

institutions is vital. One way to prevent the erosion of trust is by ensuring that communication regarding vaccination is transparent. The impact of transparent vaccination communication has been examined in a large-scale study, with a representative sample of Americans and Danes, and it was found that a lack of transparency may reduce trust in authority and facilitate conspiracy beliefs, which damages the long-term trust in the health authorities. Meanwhile, transparent communication may decrease willingness to get vaccinated, but boost long-term trust, and is preferred ahead of the alternative both short- and long-term (Petersen, Bor, Jørgensen, & Lindholt, 2021). A systematic review of vaccine hesitancy literature similarly conclude that honest and clear communication is vital for building public trust (Aw, Seng, Seah, & Low, 2021). It is important to be transparent about potential risks – which all vaccines carry – and ignoring or downplaying the potential adverse effects results in an increase in vaccine hesitancy if people experience that the potential adverse effects of the vaccines have been downplayed. An example from the COVID-19 pandemic was when news broke that the Pfizer-BioNTech and Moderna vaccines were linked with a short-term increase in the likelihood of myocarditis, particularly among young males (Heymans & Cooper, 2022; Husby & Køber, 2022). Even though the risk was low and resulted in mostly mild cases of myocarditis, there was an increased risk associated with the vaccine. It bears mentioning that the increased risk of myocarditis from the vaccine was substantially lower than the increased risk of myocarditis from getting infected with COVID-19 (Heymans & Cooper, 2022). Nonetheless, it is pivotal that vaccine communication do not downplay the existence of potentially serious side effects, because even though the benefits of vaccination outweigh the risks, transparency is key for preserving trust in institutions and authorities. If potentially severe side effects are unmentioned during the vaccination campaign, but become apparent once enough people have gotten vaccinated, it may lead to the perception that such side effects were unexpected, and this may lead people to wonder what other side effects are either undiscovered or undisclosed. A survey found that 40% of Danes underestimate how many get mild, transient side effects from the vaccine (Lægemiddelstyrelsen, 2021), which may indicate that the communication regarding vaccination have arguably downplayed the negative aspects of vaccination. Some people may have gotten vaccinated and experienced more side effects than they had anticipated, and this may make them more reluctant to get vaccinated in the future.

Taking an "the end justifies the means"-approach contributes to a long-term erosion of trust. Research on compliance and agreement has investigated how different types of agreement functions and found that when influence occurs "top-down" (new legislation is passed, pressure from authorities or government), people tend to agree at first, but it can lead to long-term loss

of trust (Conway, Houck, Chan, Repke, & McFarland, 2021). Meanwhile, when "bottom-up" agreement occurs, which refers to spontaneous agreement based on new information or new acknowledgments, changes are more likely to be stable and long-lasting. Agreement pressure is useful in situations, where acting swiftly is necessary, but it is a tool that should be used cautiously, and instead, persuasion based on information should be the goal.

Whether open and trust-building communication has been achieved is questionable. Stabell Benn (Jessen, 2022) has criticized the lack of acknowledgment of uncertainties related to the vaccines. The use of vaccine passports, mandates, and restrictions have been criticized and speculated to contribute damaging public trust, polarization, and negative influencing wellbeing (Bardosh et al., 2022). Others have raised concerns regarding the scientific basis for the recommendations by the government and health authorities in a Danish context (Mouritzen & Pedersen, 2020). This also illustrates how listening to the recommendations from the health authorities is primarily a matter of trust in these authorities, rather than a personal examination of the scientific evidence; most people trust that the authorities have done their due diligence regarding the scientific basis for their recommendations. Studies indicate that there has already been a notable loss of trust in several of these institutions during the pandemic. Survey data from the HOPE project show that trust in the Danish government during the pandemic had plummeted from 86% in March 2020 to about 50% in April 2022 (Petersen & Roepstorff, 2020; Nielsen, Roepstorff, & Petersen, 2022). A European study on trust in a number of different institutions during the COVID-19 pandemic showed that trust in general has decreased on a number of important parameters, including trust in national governments, the healthcare system, and news media (Eurofound, 2020). The loss of trust does not only lead to vaccine hesitancy, but also contributes to unrest and polarization. In a Danish context, the "Men in Black"-movement were vocal during the lockdown, voicing severe distrust regarding the government's handling of the crisis, the extent of the restrictions, and the implications for the rights of the individual. Researcher on political polarization Kevin Vallier (2020) refers to this phenomenon as the distrust-divergence hypothesis, which is that the loss of social trust leads to political distrust, which results in political divergence, which leads to political polarization, which leads to loss of social trust in a feedback loop. Vallier's key to counteracting polarization is to promote social trust, namely the belief that others in society, including politicians, officials, and institutions are moral actors, who act in accordance with values they believe to be best for society. One way of promoting social trust is through *public justification*, which refers to gaining approval of initiatives from different groups of society by justifying the policy to the values of these groups, without excluding others. This is in a sense similar to moral framing, in

that it relies on providing justification for a proposition to different people with different values, which morally reframing the issue is likely effective at.

Promoting social trust can also be done by focusing on principles that appeal broadly to members of society, for example the basic rights and freedom of the individual, freedom of association, and democratic constitutionalism (Vallier, 2020). Core democratic values such as these are broadly supported across the political spectrum, and justifying policies and institutions that enforce these generally valued principles can strengthen social trust and counteract political polarization. To improve social trust on a personal level, we must strive toward feeling empathy and tolerance toward others, which is in line with Haidt's (2012) approach to overcoming our moral differences. By adopting more humility toward our own limitations and acknowledging that others can have different values than ourselves, the distrust of others can be reduced, and social trust can improve. In line with the theory of moral blindness, Vallier argues that when the other's motivations are believed to be based on negative traits attributed to the other, understanding and empathy is made more difficult. When instead we see people with different views as moral human beings, who act based on their own values about what they believe to be right, we are less likely to become polarized. This is no easy task, however, and some structures of modern society facilitate polarization. These structural challenges will be outlined in the next section.

### 6.2.5 Social and technological structures contribute to polarization

The rise of polarization in society has been exacerbated by societal structures that, in particular within the sphere of communication, namely media and social media. Social media has been found to be a significant predictor of political polarization (Ali, Awais, & Faran, 2021). In a report on how social media intensifies US political polarization, it was concluded that social media are not the cause of polarization, but social media intensify divisiveness and contribute to its corrosive effects (Barrett, Hendrix, & Grant, 2021). Social media use has also been linked to vaccine hesitancy. Eurofound (2020) found that people who were vaccine hesitant spent more time on social media and were more likely to use it as their main source of information. Using social media as an information source has also been found to related to belief in conspiracy beliefs regarding COVID-19 and vaccine hesitancy (Allington, Duffy, Wessely, Dhavan, & Rubin, 2021; Aw, Seng, Seah, & Low, 2021).

Many media networks are private companies, driven by economic motivations rather than communicating news in an unbiased and informative way, and because we are more likely to respond to news that evoke our emotion and outrage us (Goldenberg, Young, & Bellovary, 2021), media promote such content. Additionally, partisan media exacerbate political

polarization (Kubin & von Sikorski, 2021). We are bombarded with news and impressions constantly and we react intuitively to it because news are framed in a way to be consumed, similar to other products in consumer culture, but news contribute to shaping (and polarizing) the views of the population in a negative way.

Additionally, people tend to stop following news and information content from sources they do not politically agree with, resulting in a "polarized information ecosystem"; the loss of cross-ideological social ties, where individuals miss out on news that they consider important because they believe it to be unimportant (Tokita, Guess, & Tarnita, 2021). A factor in how this contributes to polarization is the so-called "binary bias", which refers for the tendency of people to judge strength of evidence based on frequency rather than relative strength of evidence. People are more likely to think of evidence as strong if they are exposed to much content that support it, even if each case of evidence is relatively weak, whereas strong evidence is undervalued if it comes from a single or few sources (Fisher & Keil, 2018). Because people tend to consume news and content that align with views, they become increasingly certain that their views are justified and ultimately true, which furthers polarization toward people with diverging attitudes.

Another issue is misinformation, which can run rampant in online contexts. Significant links between vaccine hesitancy and online misinformation have been found (Pierri et al., 2022; Chen et al., 2022). Being misinformed online was also something a respondent considered as an explanation for the person's reasoning in the condition: "Jeg mener han må være blevet misinformeret på Facebook eller YouTube." (#64, Appendix 3). A German study found that even a low degree of exposure to vaccine-critical websites (five to 10 minutes a day) increased the perceived risk of vaccines and decreased the perceived risk of omitting vaccines (Betsch, Renkewitz, Betsch, & Ulshöfer, 2010). Interestingly, one review of research on vaccination attitudes found that many who feel they lack information about vaccines, seek it online, which results in more exposure to misinformation and conspiracy beliefs, which increases vaccine refusal (Smith, Sivertsen, Lines, & De Bellis, 2022). This underlines the necessity of having a vaccination discourse that does not make people with concerns related to vaccination steer away from the primary sources of information, such as health authorities or scientific sources. If people experience that their concerns are not taken seriously or that they are mocked for their views, they are unlikely to engage with these information channels, and instead they pursue information through other sources, particularly online, where they are far more likely to be exposed to misinformation.

### 6.2.6 Counteracting polarization

In this section, the main points that may contribute to counteracting polarization toward unvaccinated and in society in general are outlined. The quantitative analysis showed that the respondents had a higher degree of understanding than identification with the condition, suggesting that people can be understanding of others even if they are different from themselves. The step toward understanding is to gain a nuanced view of a person, rather than generalizing based on an attitude, but striving toward understanding the values behind their beliefs. Additionally, viewing a person as a whole human being rather than an attitude on a single issue is a way to counteract polarization. A study found that when people have similar backgrounds and shared nonpolitical commonalities, they were more likely to listen to the views of others and change their own views and polarization was reduced (Balietti, Getoor, Goldsten, & Watts, 2021). Most people have likely experienced disagreeing deeply with the view or belief of a friend or family member on a social issue, but this does not mean that we cannot appreciate each other despite our difference on this issue – because we do not reduce the other to the attitude they hold toward a particular issue, but see them as a nuanced human being. Pagliaro et al. (2021) argue that understanding that differences in compliance with social distancing as based in differences in moral values might promote respectful dialogue. Practicing a more open and acknowledging towards those that are unvaccinated does not only serve to reduce polarization in society, but it may also prove an effective way of getting people to consider new information and new experiences. A moral pluralist perspective may contribute to an increase in understanding, as the acknowledgment that people are motivated by their own set of values rather than evil or selfish motivations can reduce the negative attitudes toward them. Empathy and tolerance have been suggested as two ways to counteract polarization at the personal level, to promote the democratic virtue of acceptance of other attitudes or values than our own.

Interestingly, a frequent reason to be understanding of non-vaccination from the analysis was related to concerns regarding side effects – which is also the primary reason that people do opt out according to some studies (Epinion, 2021; Eurofound, 2020). An increased focus on concerns regarding vaccine may both contribute to depolarization but also facilitate a more open and understanding discourse for vaccine hesitant individuals.

At the societal level, authorities and society's institutions have a responsibility for promoting trust by being clear and transparent in their communication, otherwise it is likely to lead to a loss of trust, which limits the future compliance with recommendations and leads to more conspiracy beliefs. This responsibility extents to influential individual as well, such as politicians, as divisive "us-vs-them"-rhetoric also fuels distrust and polarization.

Trust plays a fundamental role in getting people to follow recommendations, but it is equally important as a measure of counteracting political polarization. Authorities should also be aware of how they frame communication, as some types of messages are more likely to appeal to some people rather than others; one size does not fit all. Thus, promoting public support relies on appealing to people with different (moral) values.

Lasting change in public perception of issues and agreement with initiatives is more likely to occur when bottom-up acceptance happens, which is based on persuasion through new information or new experiences, which also preserves trust. Promoting pro-vaccination attitudes should be through open, constructive debate with a nonjudgmental toward concerns or uncertainties, aimed at providing transparent information and dispelling misinformation.

The structures of modern society that facilitate and exacerbate polarization and the spread of misinformation must be scrutinized, and there is a significant need for more transparency and inclusivity. These platforms are influential on the way that people live their lives, how their views are shaped, and how they view each other, therefore they carry a responsibility to not exacerbate the challenges of modern society. More political initiatives must incline the so-called tech giants to be more transparent in how their platforms work, the algorithms they use, and these companies should actively work toward depolarization (Barrett, Hendrix, & Grant, 2021).

## 6.3 Further perspectives

Moral polarization and vaccination attitudes are areas that demand more research advancements. There is a need for transdisciplinary inquiry as moral polarization spans multiple disciplines beyond psychology, such as technological sciences, sociology, but also political science, and economics. For example, research have found indications that inequality leads to political polarization (Levy, 2022).

Future research should look into ways of implementing tolerance, empathy, and an awareness of moral pluralism in the social world of modern life and interaction, in an effort to reduce polarization toward people with different attitudes on social or political issues. The social sciences should examine how to cultivate the notion of disagreement without polarization or animosity as the societal norm. One area that warrant particular attention is how to reduce polarization in online contexts, as social media exacerbate polarization. How social media sites function and affect the human mind is still poorly understood, and revelations have come from former Facebook employees claiming that the algorithms of Facebook are deliberately designed to cause outrage and emotional responses, because it fuels traffic and thus Facebook's economic interests (Paul & Milmo, 2021). There is a need for further inquiry into the mechanisms of

social media and how it contributes to polarization. Technological advancements affect our lives in ways that are unpredictable, and it is the responsibility of the human and social sciences in particular to examine how these complex new societal structures influence human behavior and shape the social world.

More research should also be done on the topic of moral framing and how it influences communication, public support, and polarization and negative attitudes toward others. It is important that there is a focus on how different types of messages influence different people, and an acknowledgment that the existing vaccination rhetoric is unlikely to be effective at promoting vaccine willingness among the entire population. Instead, vaccine campaigns should be tailored to specific groups of people (Steinert et al., 2022; Pagliaro et al., 2021; Baumgaertner et al., 2018).

How the different moral frames could influence vaccination attitudes could be measured in a frame that mirror previous studies on framing of moral issues (Rossen et al., 2015; Wolsko et al., 2016; Wolsko, 2017), to explore the effect that different moral frames have on vaccination attitudes. For example, a study could examine how a moral liberty frame, which could focus on how vaccinations lead to fewer restrictions and more individual freedom would influence the vaccine willingness among right-leaning vaccine hesitant individuals. An in-group loyalty framing, which underline the importance in standing together as a group against the threat of vaccination could also prove effective. It could, however, also have the inadvertent effect of fueling negative attitudes toward those that would continue to not get vaccinated. Incidentally, this illustrates why being careful in communication to avoid alienating some groups is important in counteracting polarization. The implementation of moral foundations theory in the context of public health communication has been advocated previously (Matthews, Burris, Ledford, & Baker, 2016).

There are many different avenues for investigating how polarization can be reduced. In one study, researchers from Brown University found that people, who are politically extreme, display a large degree of intolerance of uncertainty in their everyday lives, which fuels polarized attitudes (van Baar, Halpern, & FeldmanHall, 2020). This indicates that political polarization can be counteracted simply by reducing the uncertainties of people's everyday lives, which also supports the interpretation that polarization is not necessarily rooted in irreconcilable differences. This does not mean that different moral values can be reconciled, but rather underlines that differing moral values does not make depolarization impossible.

Furthermore, the issue of the extent to which conspiracy beliefs are (perceived to be) prevalent among unvaccinated is another area in which that more research can contribute to

reducing negative polarization. The extent to which non-vaccination is caused by conspiracy beliefs (for example in Denmark) is likely overestimated by some, and this may contribute to negative attitudes toward unvaccinated. Even though sources quoted in this project suggest that the degree of conspiratorial beliefs among unvaccinated were low, more research is needed to examine conspiracy beliefs and vaccination attitudes. Such research should apply delicate methodologies due to the nature of the phenomenon and the suspicious worldview associated with conspiracy theorists. For example, it is not a given that somebody who may believe that the health authorities are part of a conspiracy would willingly take part in a qualitative interview conducted on behalf of the health authorities.

In addition to examining the extent of conspiracy beliefs among unvaccinated, the prevalence of conspiracy beliefs as perceived by vaccinated is also an important area to examine, as there is very likely to be a perception gap between the actual extent of "anti-vaxxers" and/or conspiracy beliefs and perceived extent, which could contribute to the polarization toward unvaccinated. Addressing other reasons that people may be vaccine hesitant may also promote understanding and empathy – and potentially make people reconsider their stance on vaccine. For example, research has indicated that people tend to underestimate passive risks, because they appear as less risky (compared to active risks – such as getting vaccinated), and make people feel less responsibility for potentially negative outcomes (Keinan & Bereby-Meyer, 2017).

# 7.Conclusion

Moral polarization poses a challenge to the fundamental democratic value of tolerance of different views and values, and in its most extreme cases, it can undermine the democratic institutions of society. Thus, examining societal polarization in all its facets should be considered an important task for the social sciences. The present study aimed toward examining moral polarization in the context of attitudes toward people who were unvaccinated against COVID-19, and how these attitudes were related to different aspects of morality.

It was found that moral framing influenced the degree of understanding of the different conditions, with concerns related to the moral foundation of harm being the most understandable, and concerns related to purity being the least understandable, which was in line with the theory, although the small sample size for this analysis means the results should be interpreted with caution. It was also found that people who identified as right and far right were generally more understanding of non-vaccination, while people who identified as otherwise were generally not understanding. The qualitative results showed that the primary reasons related to supporting vaccination were related to common good/social responsibility and trust,

which correspond to the moral foundations of care and authority respectively. Furthermore, another frequent category of themes were negative attitudes toward unvaccinated, suggesting that the issue of non-vaccination is a polarized issue, where unvaccinated are likely to be met with negative preconceptions and moral reproach. Reasons for being understanding of non-vaccination were predominantly related to individual factors, particularly related to personal choice, which corresponds to the moral value of liberty. In line with the theory, respondents who identified as left or far left were more likely to use reasoning related to the moral value of care for others (common good/social responsibility). This group also exhibited a large degree of negative attitudes toward unvaccinated, supporting the notion of a "moral colorblindness" of the left. Moderate respondents provided reasons that were generally balanced among the three not-understanding categories. Meanwhile, the right and far right respondents were consistently the most understanding of non-vaccination and identified the most with non-vaccination. Even when respondents who identified as right or far right produced reasons that were not supportive of non-vaccination, these themes were far less likely to display negative attitudes toward unvaccinated than those of the other respondents. The prevalence of negative attitudes toward unvaccinated across the political spectrum (minus the right and far right) illustrate that the issue of vaccination is polarized, which likely contributes to the moral reproach toward unvaccinated, which further cements polarization and shuts down the possibility for an open and non-judgmental discourse. The discourse surrounding vaccination likely have an effect on which kind of reasoning people use in the context of vaccinations, as the discourse surrounding vaccination has been centered around common good/social responsibility, for example through the concept of displaying "samfundssind", and trusting the authorities and the scientific basis for their recommendations has also been a central theme

It is speculated that there is an overestimation among vaccinated about to which extent conspiracy beliefs are prevalent among unvaccinated, as conspiracy beliefs (in a Danish context) are thought to be relatively low, and that this perception of possibly contribute to the divide between vaccinated and unvaccinated. Polarization and misinformation is exacerbated through social media and these challenges must be addressed.

In addition to common good and negative attitudes toward unvaccinated, the most frequent type of answer for supporting vaccination was related to trust. In accordance with existing literature, trust in the government and particularly the health authorities was found to play a large role in vaccination compliance. Furthermore, trust play a large role in counteracting polarization in society, as the loss of social trust and trust in the authorities has been linked to a rise in conspiracy beliefs and political polarization. Therefore, it is vital that authorities are

transparent in their communication, that they do not ignore uncertainties, because it damages the long-term trust in these institutions, which reduce future compliance, fuel polarization, and promote conspiracy beliefs among the population.

At the personal level, it is important that people's concerns are met with understanding and openness. Rather than reproach, non-compliance or divergent attitudes should be met with empathy and a genuine attempt to understand the reasoning and values behind the decision. Democratic societies are in a sense built on the principle of moral pluralism, in the sense that people are free to believe in the values they wish and practice them. This does not mean that people should not be encouraged to follow advice from health authorities based on scientific evidence. Nor does it mean that people's beliefs or values should never be scrutinized or challenged, but this must be done in a way that does not alienate others, as this alienation accomplishes nothing except fueling the societal divide. Open and constructive platforms for seeking new information and debating ideas and values are critical to a healthy democratic discourse, but such constructive debate is impossible if people experience being berated for their views. Not only does the possibility for constructive debate lower polarization, but this nonjudgmental interaction and exploration of other people's views is more likely to promote new reflections and insights than shaming people who do not comply with recommendations. Promoting such ideals for the communicative practices in society is easier said than done, but society must strive toward tolerance of other values.

The fundamental views of society and social issues depend on the moral values that people have. For example, left-leaning individuals tend to have a progressive ideal for society, where society should constantly evolve toward more equality, where new social awareness emerges and breaks down oppressive structures to reshape the normative ideals. This is largely opposite of the core right-leaning values of limiting regulation that impedes on personal freedom, cherishing tradition, where the bases and institutions of society must remain secure and should not be changed. These views on how society should work cannot be unified, as they are based on irreconcilably different moral beliefs – but this does not mean that a person who subscribes to either ideal must consider those from the other side as evil. We must strive toward viewing others as nuanced human beings, even if we disagree on some fundamental values, and work toward appreciating the diversity of attitudes and beliefs and allow them to co-exist. It is by meeting people with different views than our own that we learn and acquire new acknowledgments. "New" acknowledgments do not presume a move toward progressiveness, it could also refer to gaining an awareness of and appreciation for cultural traditions that bind

communities together. We should strive toward meeting others nonjudgmentally with openness – even those with attitudes that do not fit our own worldview.

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# List of appendices

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Appendix 3 – Qualitative content analysis Q1

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