"Feeling into" and moral imagination: How the expression of empathy varies across different Corona-related dilemmas

Master thesis

Johanna Bärthlein

s1959328

Supervisors:

Dr. Anneke Sools

Dr. Yashar Saghai

Abstract

This study deals with examining how the expression of empathy varies in the anticipatory moral imagination of different Corona-related dilemmas. Participants from the Netherlands, Greece, Finland and Ecuador were shown pictures that represented Corona-related dilemmas and were asked to identify the dilemmas and find solutions. Their responses were analysed using deductive and inductive coding. The focus of this analysis was on the kinds of empathy since this study was the first to empirically examine the six aspects of empathy by Alma & Smaling (2006). Furthermore, the intensity of empathy was added to this theoretical framework and its interaction with three of the six aspects of empathy was analysed per dilemma. The results showed that how empathy was expressed varied per dilemma in the kind and intensity of empathy as well as their interaction. Multiple factors were identified as possible causes for this variation, such as differences between personal and collective dilemmas, futuristic and familiar situations, as well as clear and complicated representations of the dilemmas. For the future, it would be advisable to examine these factors in more detail and design studies that can include all the six aspects of empathy in their analysis.

Introduction

The Corona pandemic is the first great-scale pandemic since the Spanish Influenza, affecting every human being on the planet ('20th and 21st century's major pandemics', 2020; Clay, Lewis, & Severnini, 2019; World Health Organization, 2021). The disease presents itself by coughing and fever among other symptoms and spreads through close contact of persons, via respiratory droplets (Centers for Disease Control and Prevention, 2020; World Health Organization, 2020). As of the 7th of April 2021, 132,046,206 cases of Covid19 and 2,867,242 deaths caused by this disease have been reported (World Health Organization, 2021). To stop the virus from spreading, governments have instructed their citizen to isolate, wear masks, work from home, disinfect hands and rooms and stay apart. This has changed the way we live and how we perceive our lives in many different ways- suddenly standing close to a person is seen as unethical, going to work or meeting friends is frowned upon and we find ourselves being locked in our own homes. Even fresh air has become a forbidden fruit in some regions. For instance, people are requested to wear masks while walking in some of the parks of Cologne, Germany (*Was Gilt Wo Und Wann? Das Müsst Ihr Zu Geänderten Coronaregeln Wissen*, 2021).

Especially now it is important to support each other and act in a way that will harm the least, a task that becomes increasingly difficult over time. So, what keeps us motivated? A

strong incentive might be the imagination of other people's suffering and the emotions we feel caused by this imagination- an ability we call empathy (Alma & Smaling, 2006).

This thesis deals with the expression of empathy in different moral dilemmas. A theoretical framework by Alma & Smaling (2006) describing empathy with six different aspects was firstly used in an empirical study regarding dilemmas in Corona times. With this study, the framework was examined for suitability in research. Furthermore, the expression of empathy by individuals when dealing with different Corona-related dilemmas was hoped to be understood better.

Empathy

Empathy is not a trait or behaviour, it is an ability that can be trained and developed over life (Oh, Chopik, Konrath & Grimm, 2019). This ability makes it possible for individuals to take the perspective of other beings and try to feel what they feel without losing the understanding that they are two separate entities (Cuff, Brown, Taylor, & Howat, 2014). Empathy can occur automatically and consciously and can fuel compassion and pro-social behaviour (Cuff, Brown, Taylor, & Howat, 2014; Decety, Bartal, Uzefovsky, & Knafo-Noam, 2016). One does not have to agree with the views and feelings of another or wish to benefit them to emphasize with them (Alma & Smaling, 2006). Alma & Smaling (2006), define empathy to consist of six aspects, namely cognitive, affective, and interpretive, as well as expressed, received and interactional empathy. This paper will build on this theoretical framework, but their classification was moderated slightly by excluding interpretive empathy and instead using a more general social empathy to better be able to work with complementary literature. Cognitive empathy is connected to the imagination of other people's feelings, thoughts and motivations (Alma & Smaling, 2006; Goldie, 2000). A person can empathize with another by concentrating on the other person's situation and role, which are then analysed and made sense of to understand those feelings, thoughts and motivations (Alma & Smaling, 2006; Decety & Jackson, 2004; Plüss, 2010). While imagining the other's disposition, one can also feel what they imagine the other one is feeling (Alma & Smaling, 2006). This is called affective empathy, experienced by perceiving a similarity between both parties involved, as an emotional response to the other's feelings (Alma & Smaling, 2006; Decety & Jackson, 2004). This "feeling into" is experienced with a distinction between the own feelings and the feelings of the other person (Decety & Jackson, 2004). Finally, social empathy deals with the interaction between empathiser and empathisee and how empathic understanding is shared (Alma & Smaling, 2006). Buccino et al. (2004) have shown that human mirror cells fire when they watch another human, a monkey or a dog eating, but they

do not fire when the dog barks. Barking is not an action that is possible for humans, which is why no mirror neurons responsible for it can fire. Therefore, the activity of the mirror neurons leads to intuitive perception, imitation and ultimately to understanding (Buccino et al., 2004).

Expressed empathy is the empathy expressed from one individual to another and can be distinguished from other forms of empathy since it is impacting individuals separately from the effects of the other forms (Alma & Smaling, 2006). For instance, empathy can be expressed but not felt. In a study by Toivonen etc (2017) that lasted two years, students reported their emotions regarding breaking news and those reports were qualitatively analysed. Though empathy was expressed by most students, many showed emotional detachment and tried to keep a distance from the news (Toivonen etc, 2017). Furthermore, in a study by Bonvici etc (2008), the effect of communication and expression of empathy training on the behaviour of physicians was tested in a quantitative study through coding of audiotaped conversations of physicians with their clients. The results showed that expressed empathy can be trained and improved since the doctors showed an improvement of up to 51% of expressed empathy after the training (Bonvici et al., 2008). Finally, expressed empathy has a positive impact on the person it is expressed to, for instance, individuals who were asked about suicidality felt more comfortable talking about this topic when their interlocutor expressed empathy (Richards et al., 2019)

The effect of expressed empathy is also seen with received empathy, the form of empathy that is accepted and responded to by the person the empathy is expressed to (Alma & Smaling, 2006). This effect can be quite different, depending on how a person is seen. For instance, Nadler & Liviatan (2006) showed that Jewish Israeli individuals showed a more positive attitude when they trusted a Palestinian leader who expressed empathy and positive emotions toward their group but felt a more negative attitude when they did not trust the speaker. Furthermore, it is shown that a shortage of received empathy by the close social cycle is directly linked to the feeling of loneliness (Heatley etc, 2017). However, empathy expressed by strangers or people not that close to us cannot make up for this deficiency, showing again that who expresses empathy and how we perceive them is an important aspect (Heatley etc, 2017). Hermans, Hartman & Dielissen (2018) conducted a study that compared patients' perception of received empathy and the actually felt empathy by GPs. This was measured using two different questionnaires, including 143 different consultations in the study. The results showed that the perceived empathy by the patients was significantly higher than the empathy felt by the GPs (Hermans, Hartman & Dielissen, 2018). This shows that

received empathy and expressed empathy do not have to be related, and that there is no actual felt empathy needed for both these forms of empathy.

Interactional empathy deals with this discrepancy by considering the empathy exchanged between two parties and the understanding of the feelings of the empathisee by the empathizer and also the empathisee's understanding of the expressed empathy, as well as the acceptance, affirmation and stimulation of said empathy (Alma & Smaling, 2006). Interactional empathy, including expressed and received empathy has been discussed multiple times before, for instance, Barret-Lennard (1993) wrote an article about the "Phases and Focus of Empathy" in which he distinguished three main phases, namely reception of empathy, expressive communication of empathy and received empathy or the understanding of being empathized with (Barret-Lennard, 1993). He also stated that those systems can exist without one another and that they combine the notion of you, I, and us (Barret-Lennard, 1993).

Empathy variations across different situations

Depending on the situation, a different level or type of empathy may be shown (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Staats, Long, Manulik & Kelley, 2006). For instance, there is a more significant moderation of empathy by a situational context than for instance by the gender of the persons involved (Staats, Long, Manulik & Kelley, 2006). The students who participated in the study of Staats, Long, Manulik & Kelley (2006) first had to either complete empathy questionnaires or anger questionnaires and were then presented with different situations about property harm, physical harm and other social interactions. When expressing their reactions to the situations, women and men showed differences in the expression of empathy in social and physical situations and regarding an opposite or same-sex victim. However, the significant difference in empathy for different situations was a great deal higher than the gender difference, especially regarding the difference between property damage and social and physical situations (Staats, Long, Manulik & Kelley, 2006). Furthermore, there is evidence that only a small change in the situation can have a great impact on the amount of empathy, as seen with the bystander effect that describes the phenomenon that multiple bystanders perceive the suffering of a person differently than if only one person witnesses it (Darley & Latane, 1968).

This indicates that social aspects are especially important regarding empathy, as also shown in a study by Nezlek, Feist, Wilson & Plesko (2001). This study was conducted with psychology students and measured their empathy intensity as well as daily activities and mood for ten weeks, twice a week. More reported social interactions during a day were

correlated with higher intensity of empathy which was assumed by the authors to be the result of more opportunities to be empathetic (Nezlek, Feist, Wilson & Plesko, 2001). Furthermore, the distinction between the perceived in- and outgroup changes the level of empathy (Cikara & Van Bavel, 2014). This is shown in multiple studies about different ethnic, political, and social groups (Avenanti, Sirigu, & Aglioti, 2010; Cikara & Van Bavel, 2014; Hein, Silani, Preuschoff, Batson, & Singer, 2010; Mitchell, Macrae, & Banaji, 2006; Zhou & Han, 2020).

In addition, the intensity of empathy is connected to situation appraisal. In a study by Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson (2020), 59 participants were asked to watch movie scenes on a computer with either positive, negative or neutral social scenes. Afterwards, they filled out an empathy questionnaire toward the character in the clip. Higher situational empathy was reported for negative than for neutral or positive social scenes (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020). This effect applies to situations both where the other person expresses positive or negative feelings, and the own feelings of the empathiser (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Nezlek, Feist, Wilson & Plesko, 2001). Moreover, the profession of a person is connected to the way they experience empathy, for instance in a clinical context, doctors and nurses often miscalculate the degree of the pain their patient is in since they are used to the sight of pain (Marquié, Raufaste, Lauque, Mariné, Ecoiffier & Sorum, 2003; Sloman, Rosen, Rom, & Shir, 2005).

Empathy variation across different dilemmas

Across situations, there is also variation in empathy across different dilemmas. Dilemmas can be defined as situations with two possible actions between which one has to choose, a decision that is perceived as difficult (Wildfeuer et al., 2011). Moral dilemmas in addition require two moral actions from which solely one can be chosen ("Moral Dilemma," 2002). The demographics of individuals can have an impact on their use of empathy in moral dilemmas, for instance, men and women accept moral violations and are emotionally involved in a different way (Cordellieri et al., 2020). Cordellieri et al. (2020) conducted a study on the difference in gender in the perception of dilemmas. The results showed that, for instance, men more often accepted the abuse of certain ethics, such as justice and care, for other purposes, to save lives for instance. Women, on the other hand, were more engaged in the dilemma, showing more sadness, empathic concern and perspective-taking (Cordellieri et al., 2020). Furthermore, adolescents' empathy levels affect how they solve moral dilemmas (Molchanov, 2014).

Empathy in dilemmas is also closely linked to social factors. For instance, higher intensity of empathy is connected to being more prone to sacrifice one's happiness for the sake of a bigger organisation such as a factory or a country (Joireman, Kamdar, Daniels & Duell, 2006). Moreover, empathy is shown to support faster decision making since individuals with higher intensity of empathy are more likely to use imagination in social dilemmas, a phenomenon that is connected to making more efficient and faster decisions (Ramsøy, Skov, Macoveanu, Siebner & Fosgaard, 2014). Furthermore, Sautter, Littvay & Bearnes (2007) conducted a study where students were asked to play games against a computer while thinking they played against another student. Inspired by the prisoner's dilemma, the computer either did or did not cooperate with the participants and their reactions were recorded. In addition, the participants filled out a questionnaire measuring their general empathy level. The results showed that high intensity of empathy does not necessarily lead to the connection between people since individuals who had the highest empathy scores either showed highly cooperative or uncooperative behaviour (Sautter, Littvay & Bearnes, 2007).

Moral imagination and empathy

This social factor of dilemmas is also important to empathy because people tend to imagine situations others are in to understand them. One form of this process that is closely linked to moral dilemmas is called moral imagination and can be defined as "a person's way of being in and transforming their world by means of their ability to imagine how situations might develop toward greater harmony (...)" (Johnson, 2017, p. 366). It is a social process that uses creativity to find a purpose and a solution for the realization of peoples' goals (Johnson, 2017). For this study, this concept was extended to the concept of anticipatory moral imagination (AMI), in which moral imagination deals with hypothetical situations located in the future or not yet experienced by the agent. The persons using AMI, therefore, imagine possible dilemmas they have not personally faced before and decide on possible actions that could solve these dilemmas. AMI consists of five aspects, namely moral sensitivity, moral reasoning, moral creativity, perspective-taking or empathy with others, and moral choice-making. This paper will focus on the aspect of empathy with others.

The notion of empathy was, through the course of history, rejected by many philosophers (Alma & Smaling, 2006). However, it has been argued that empathy and moral imagination are connected in many ways (Goldman & Jordan, 2013; Harris, 2000). First, as described above, imagination is a part of empathy, dominating the cognitive aspect (Alma & Smaling, 2006; Goldie, 2000). In addition, Harris (2000) states that imagination is a way of

being able to see the opportunities that our reality holds. Goldman & Jordan (2013) conducted a study where individuals either imagined eating a cookie or actually ate it, which did not make a significant difference in whether or not the participants decided to eat another cookie. This shows that the difference between imagining a scenario and experiencing it, in reality, does not necessarily have to exist, which then again supports the notion of Harris (2000) that imagination can cause us to connect to our reality and even act on it, for instance in an empathic way (Alma & Smaling, 2006). Finally, Hoffman (2000) offers the relevant argument that even though empathy could be important for individual moral actions, it also poses restrictions, since people tend to show greater empathy in situations that deal with individuals close to them and with present, contemporary issues (Cikara & Van Bavel, 2014; Hoffman, 2000).

This study

This unique situation of a pandemic in modern times allows us to study how individuals react to pandemic-related dilemmas. Empathy plays a central role here because it is how people connect and it is the fuel behind compassion and the acts of supporting other human beings. If we can study the relationship of empathy with pandemic-related dilemmas, it might explain why people behave or feel a certain way in situations like these and this again might even help to coordinate crises such as a pandemic better in the future. In addition, the combination of countries studied in this study is also unique to the topic. The different cultural backgrounds of the participants might help to draw a more representative picture of empathy in response to moral dilemmas. Furthermore, this study offers more insights into the use of the six different aspects of empathy in moral imagination and how those might change across dilemmas that become more futuristic and unrelatable over time. These insights might also be formed into new theories which could in turn, eventually, be used to create interventions that help individuals cope with moral dilemmas. The experience of moral distress and learning how to cope with it can alleviate distress in individuals (McAllister & McKinnon, 2009; Peter, Lunardi & Macfarlane, 2004). Furthermore, the more used to moral distress individuals are, the more they also can care for others (Corley, 2002; Laabs, 2005). Studying this phenomenon regarding the Corona crisis and moral imagination in combination with the six aspects of empathy is opening options to understand the interaction between these variables. Hence, the idea that the way empathy is expressed is dependent on the kind of dilemma posed needs to be further substantiated. Understanding how many different aspects of empathy are voiced in a pandemic can be a very valuable addition to research.

In conclusion, empathy is an ability that varies a lot across individuals and situations. We have discussed that it is a feeling, cognition and social interaction tool we use almost daily, and it is very closely related to our social environment. This includes different moral dilemmas, actual or imagined, that are shown to elicit different forms of empathy. These differences in turn show that empathy can appear in a variety of forms, depending on many variables, such as situations, mood and personality. As stated above, moral imagination is also one of these variables. Imagination is a part of empathy, as well as empathy a part of imagination, and studies have shown that imagining and experiencing a moral dilemma does not necessarily influence how we perceive the dilemma or the impact it has on our emotions or reactions such as empathy. Therefore, moral imagination can be used to investigate how individuals would respond empathically or not in certain dilemma situations. The differences in these situations can then be used to determine if the type of situation might impact how individuals express empathy. As a situation that is focused on in this study, the Corona pandemic is a new situation that humanity has not experienced in this way before. New dilemmas are created that none of us had to deal with yet during our lifetime. These dilemmas have not been studied extensively yet, especially regarding the difference of situations and their impact on empathy. As stated above, there are already studies that deal with moral imagination and the Corona pandemic which show that similarities might be more predominant than differences across cultures in empathy regarding Corona-related dilemmas (Zirenko, Kornilova, Qiuqi & Izmailova, 2021).

This paper concentrates on the qualitative empirical study of variations in empathy across different dilemmas. The study analysed in this paper deals with anticipatory moral imagination in the times of Corona. The research question is as follows:
How does the expression of empathy vary in the anticipatory moral imagination of different Corona-related dilemmas?

Methods

Background

This study involves a secondary analysis of data collected in the post-corona futures project at the University of Twente. There were three studies, the first being conducted in April 2020, with 1156 participants starting, and 207 finishing it. It was a narrative study that dealt with letters the participants should write to themselves from a desired, post-corona future. The second study took place with two measurement points in August 2020, with 55

participants finishing it. The study was quantitative and examined the change in expected, hoped-for and feared future perspectives. The third study will be discussed in this paper.

Participants

The participants were selected through convenience sampling, using the social networks of the researchers, interviews published in local and news media, and in newsletters of the KBO (Catholic Association for Elderly People) and the NvT (Dutch Association for Psychotherapists). The study analysed in this paper was a follow-up study of two previous studies. Participants of the previous study were asked to participate in the study for a compensation of 60 euros, 15 euros for every measurement. 83 individuals were asked to participate in the third study, with 34 accepting this invitation. Their age ranged from 17 to 77. The participants were citizens of Ecuador, the Netherlands, Finland, and Greece. 55% of the participants had a university degree.

To be included in this study, participants were required to be older than 16 years old, to have sufficient language skills of the languages used in the study, and to be citizens of the countries that were part of the study. Individuals from other countries were not included because there were not enough participants from other countries in this study to make a comparison between countries.

Procedure

The third study, which will be analysed in this paper, was a cross-sectional online survey design and had four measurement points, from mid-September to November 2020, as four online surveys on Qualtrics. In each survey, the participants were shown two pictures, one regarding a personal dilemma and another showing a collective (policy) dilemma and were asked the applicable set of questions. Informed consent was obtained online.

Materials

The presentation of the dilemmas was accomplished by eight drawings, painted by an artist for this study (see Figure 1-8). Drawings were chosen to enable participants to narratively interpret and make meaning of the content of a picture, thereby invoking moral imagination rather than moral reasoning. This idea was inspired by the Thematic Apperception Test (TAT) that uses pictures and the stories of the participants about those pictures to analyse their personalities (Cramer, 1996). These drawings showed Corona-related contemporary and future scenarios with visible moral dilemmas, such as a funeral where people with masks attend and seem to want to hug one another. One drawing was titled 2030 and displayed cracked soil and violence, among other things, and another drawing showed a family in a home office, with children and parents all trying to work or relax in the same

room. The dilemmas portrayed in these pictures were chosen by using the views of partner experts of the project, preliminary results of the first study about letters from the future, and topics that are often shown in the media.

The surveys about these dilemmas were distributed on Qualtrics and contained four to five open questions per dilemma structured in the same way and designed to analyse the five aspects of Anticipatory Moral Imagination as conceptualized by the researchers in the project, with slightly different questions tailored to each dilemma. Personal dilemmas regard dilemmas that concern the personal life of the participant while collective dilemmas deal with situations that have not happened to the participant and affect society at large, such as policy issues or collective problems that may or may not influence the participant's personal life.

The first question dealt with the participants' open interpretation of the pictures, inspired by the Visual Thinking Strategies method that deals with art being subjectively viewed and narrated by the viewer (Visual Thinking Strategies, 2017). The goal of this question was to allow the participants to make sense of what they saw themselves, including if they thought there was a dilemma happening, what kind of dilemma that was and if maybe even multiple dilemmas were present. The following four questions dealt with aspects of anticipatory moral imagination, question two being about moral sensitivity and question three dealing with possibilities of action to deal with the issue. The fourth question tapped into the values of the participants, how they would act themselves, by focussing on moral salience. Finally, the last question asked for empathic concerns by encouraging the participants to think about the circumstances of the situations in the pictures and possible alternatives. For instance, one question read "Suppose you were either a very close family member of the deceased person or a mere acquaintance, what do you think you should do then? Please make explicit the reasons for your choice."

Data analysis

The data analysis was a combined deductive and inductive thematic analysis, using codes to identify themes and differences between responses. It was carried out with the Software programme Atlas.ti. Together with the other researchers working on this study, a coding scheme was developed, using the six aspects of empathy (Alma & Smaling, 2006) and a degree of intensity or depth of empathy that was added to these aspects. In the following, any graduations of empathy, also including depth, will be described with the umbrella term of "intensity". The responses of the participants were analysed by applying the codes to the written answers and by comparing the responses per code, per dilemma and regarding the intensity of empathy shown.

As a baseline, the coding scheme was developed by writing short definitions of the six aspects of empathy and coding all the answers of two participants from different countries who finished the study. The six aspect codes were adjusted during this process since the researchers noticed many differences in the intensity of cognitive and affective empathy that they wanted to code separately to create a more balanced analysis. Affective empathy was divided into emotional labelling, which was a kind of low affective empathy, and medium and high affective empathy. The researchers had noticed statements that were merely labelling the emotions of other persons, but also very deep analyses of their emotional state and even emotional reactions from the participants themselves. With the division into three codes, these differences in the depth of empathy could be made apparent.

A similar process was reached with cognitive empathy. There, the scope reached from a code called perspective-taking, over cognitive empathy, to interpretive empathy, which described deep analyses of the characters' thoughts and internal processes. The meaning of the code called cognitive empathy was understood as a deeper understanding of perspective-taking.

Since this study was designed in a way that interactional patterns were not studied, and therefore, there were not any communication partners involved, all other kinds of social empathy except for expressed empathy were excluded from the coding scheme because they could not be coded.

In addition, boundaries for the codes were devised. Empathy was not coded if individuals talked about injustice or general problems in society without explicitly feeling, taking perspective or expressing empathy with an individual. In addition, when participants clearly did not understand the perspective of the characters, their statements were not coded as empathy as well. For instance, if a participant said that a person did not care or was happy despite the situation, while the facial expression of the character in the picture, and the statements of the other participants clearly showed that the character was sad, it would not be coded as empathetic. Finally, boundaries between the different types of empathy were made clear as well by defining perspective-taking, thinking about possible solutions and talking about the thoughts and decisions of a character as cognitive empathy, while as soon as feelings were stated in any form, the statement was coded as affective. If the individual did not take the perspective of a character or talked about their thoughts and feelings, but either explicitly expressed empathy by stating that they are empathetic towards the character or describing a character being empathetic towards another character, it was coded as expressed empathy. All other statements were not coded as empathetic.

After developing this first coding scheme, the empathy codes were applied to the first two dilemmas to find weaknesses and possible additional codes. The affective and cognitive codes were renamed into low, medium and high affective and cognitive empathy to enable consistency and better comparison. Expressed empathy was also divided by the depth of understanding and inference into low, medium and high expressed empathy to match the previous codes. In addition, to determine what was affective empathy for others and the future self, another code, named "future empathy", was added, which was not included in the analysis and acted as a way to be able to keep an overview. Furthermore, some responses were coded as non-existing empathy if the other participants showed empathy as a response to the specific question and a response without empathy stood out of the group. This code was called "antipathy".

The finished coding scheme for this study consisted of nine codes used in the analysis. As mentioned above, to capture variation in how cognitive, affective, and expressed empathy were narrated in the responses to dilemmas, three levels to indicate the intensity of empathy, namely high, medium and low, were identified. Low empathy was coded when the participants showed empathy that was superficial and one dimensional, without any deep understanding of the situation or the feelings of the characters. Medium empathy was the middle ground, coded for a deeper understanding of the person's thoughts, situations and feelings, understanding the "what" of the situation on more levels. Finally, high empathy deals with the "why" of feelings and thoughts, understanding how the persons came into feeling or thinking that way or fully trying to feel what they feel. For instance, if the participants would say they felt sad now because they thought the characters they saw on the pictures felt sad, that would be coded as high affective empathy.

For this paper, these codes were applied per dilemma since the responses to the different dilemmas were compared to discover possible differences in the expression of empathy. The coding of the dilemmas was divided between the researchers and randomly cross-checked to ensure interrater reliability. After every measurement was coded, the codes were discussed and revised. The answers to questions about finding dilemmas were especially difficult to code since the participants often wrote down many possible opinions or solutions without stating their preferred one. The answers were often formulated as either...or statements or as questions. The first and last questions were easiest to code because the participants were asked to describe the picture or their behaviour if they would be in the situation or if they would be one of the people displayed in the pictures.

Moreover, certain responses were difficult to code because of translation errors, however also because sometimes it was unclear if a certain statement was meant as empathetic or not. For instance, many participants talked about injustice towards minorities, which was sometimes phrased in a way that seemed to convey expressed empathy. To solve this problem, these statements were coded individually, depending on the tone of the statement and the context in which it was written. Emotional responses were for instance coded as empathetic, while general statements about injustice or inequality were not coded as empathy. Furthermore, it was sometimes difficult to ascertain if the researchers coded a response as not empathetic because they did not agree with the statement or because it was, in fact, not empathetic. Here again, the researchers discussed individual cases and used the concrete definitions of the codes to stay as objective as possible, such as "looking at a situation from a viewpoint that is different from one's usual viewpoint. This may involve adopting the perspective of another person or that associated with a particular social role".

After coding all the data, the responses were compared. This comparison was carried out by investigating the sums and frequency distributions of codes used for one dilemma and comparing it to the codes in other dilemmas. Furthermore, the responses were qualitatively examined and analysed to qualify the empathy responses specific for each dilemma. For this purpose, the researchers looked at patterns in the way the participants expressed empathy using the different aspects coded and the tone of the individual responses. These findings were then compared between dilemmas so that commonalities and differences became articulated.

Results

To present the results, first, some frequency distributions regarding the kinds of empathy and their intensity will be discussed. Following that, the definitions of the codes will be described and numerical variations across dilemmas will be stated. Following this, the main part of the results will deal with the qualitative analysis of the codes across dilemmas. Finally, the differences between collective and personal dilemmas will be shown.

Table 1

All codes sorted after type of empathy for each dilemma

Dilemma	Cognitive empathy			Affective empathy			Expressed empathy			Totals
	low	med.	high	low	med.	high	low	med.	high	
First Dilemma	53	113	22	43	61	3	21	15	1	332
Second Dilemma	69	47	2	15	1	6	3	1	0	144
Third Dilemma	114	67	12	51	160	1	11	9	0	425
Fourth Dilemma	42	61	27	9	36	0	13	7	0	195
Fifth Dilemma	37	44	19	19	1	0	1	2	1	124
Sixth Dilemma	35	66	2	19	6	0	15	9	0	152
Seventh Dilemma	44	19	3	15	6	0	2	6	1	96
Eighth Dilemma	14	27	4	9	7	0	1	4	0	66
Totals	408	444	91	180	278	10	67	53	3	1534

The dilemmas showed a clear variance in empathy expressed by the participants. In general, the cognitive empathy codes were most prevalent, (61%), followed by affective empathy (31%) and expressed empathy (8%) (see Table 1). When looking at dilemma-specific responses, there were apparent differences between the number and type of empathy coded, as well as between personal and collective dilemmas. Empathic responses were very present across all dilemmas and made up about an eighth to a quarter of all responses, depending on the dilemma. The antipathy responses were very rare and happened about once or twice for every dilemma. An example of an antipathy response is “I try to protect myself and everyone can do as they please” and “106:3 As I said, they do not seem to face any moral dilemma, they behave as units and they do not care what happens around them”.

Furthermore, some cultural differences were noticed, such as different viewpoints on family, women, and society. For instance, in Ecuador, there was a lot of concern about the less fortunate groups in society, such as “Refugee policy in my country at the moment is unacceptable and inhuman (…)” while prejudices and stereotypes were expressed when interpreting the situation of the woman in the home office, such as “A young woman on the right calls her grandparent and asks for advice on cooking” or “Another mother cooks, supervises a small child and uses the telephone for work”.

Frequency distribution of the codes

Medium cognitive empathy was coded the most of all codes (28,94%). Moreover, it was the highest coded medium empathy code of all medium codes (57,29%). Low cognitive empathy was coded the second most of all codes (26,60%) and it was the far most coded code for low empathy codes (62,92%). Of all the high empathy codes, high cognitive empathy was almost solely coded (87,5%). Medium affective empathy made up 35,87% of all medium codes. Expressed empathy was the least coded, with high expressed empathy being the least coded code (0,20%).

Regarding the intensity of empathy, the medium and low codes were mostly present. Medium empathy was coded the most (50%) and low empathy codes the second most (43%) of all codes. In contrast, high empathy codes were by far the least coded (6%) (see Table 2).

Table 2

Codes grouped by intensity for every dilemma

Codes	First Dilemma	Second Dilemma	Third Dilemma	Fourth Dilemma	Fifth Dilemma	Sixth Dilemma	Seventh Dilemma	Eighth Dilemma	Totals
low empathy	115	87	176	63	56	69	61	24	651
medium empathy	185	49	236	103	47	81	31	38	770
high empathy	26	8	13	27	20	2	4	4	104
Totals	326	144	425	193	123	152	96	66	1525

To present the answers to the research question in the most transparent way, the individual codes will be described in more detail.

Low cognitive empathy

Low cognitive empathy was coded if a participant would take the perspective of another person on a very superficial level, by describing their thoughts or situation, and without regarding feelings and without feeling with them or trying to experience the situation as their own. For instance, a low cognitive empathy coded line would be “He thinks he has to hang up because he has a lot of worries at home” or “there is concern about social distancing”.

Medium cognitive empathy

Medium cognitive empathy is less superficial and deals with reasons for the thoughts, feelings and behaviour of a person and the interpretation of those. Some examples would be “You shouldn't refuse to show affection to those who have lost a loved one” and “One man with a mouth mask wants to shake the other's hand, but the other refuses, because of the rules”. In addition, medium cognitive empathy was also coded if individuals expressed solutions to support others, such as “I would look for ways to protect vulnerable groups” or “Improve home reading programs through government incentives”.

High cognitive empathy

High cognitive empathy analyses the perspective of another person in depth and finds complex and deep-rooted reasons for the feelings, behaviour and thoughts of that person. One instance of high cognitive empathy is “Grief requires comfort and closeness, the rules make that one strictly (…)”. In addition, “Each member seeks to have a life independent of the other member.” is an example of high cognitive empathy.

Low affective empathy

Low affective empathy deals with emotional labelling, stating other people’s feelings without feeling with them. One example would be “Most of them are sad, crying and mourning for this situation” or “The shoppers are very relaxed”.

Medium affective empathy

Medium affective empathy is a “feeling into”, with the participants imagining themselves in the situation of another person and trying to feel what they think the other person is feeling. For instance, “I would not avoid physical contact with people”, “I would express my sadness in other ways” and “Does someone feel excluded just because they don’t have a vaccine?” were coded as medium affective empathy.

High affective empathy

High affective empathy deals with a more complex and deeper version of medium affective empathy. It shows that the participants are very immersed in the situation, such as

“Loneliness, even though people are in the same room” and “Every day doesn’t have to be a perfect performance. Everyone has the right to vent their feelings”.

Expressed empathy

Finally, expressed empathy deals with two ways of expressing empathy. Since this is a moral imagination study, one of the ways to express empathy would be by stating that one would express empathy in a situation that is imagined. Another type of expressed empathy is to directly express empathy for minorities in their countries, for instance. Since both these instances were present a lot in this study, the researchers decided to code them both as expressed empathy and divide this code as well into low, medium and high, depending on the level of empathy. For instance, „I would certainly hug or put hands on someone’s shoulder“ was coded as low expressed empathy since it only dealt with behaviour and not the feelings or thoughts of the people involved. As a contrast, “I would always help someone who is in danger no matter who they are” was coded as high expressed empathy. An instance of medium expressed empathy would be “Under no circumstances should these people be abandoned” or “I do not see any treatment acceptable other than that of non-asylum seekers, the same rights and the same treatment”.

Future self

In addition, the code “future self” was devised for instances when the participants were imagining themselves in a situation of their future selves, which required some perspective-taking but not as much as if it would be an entirely different person, for example, “I think I would ask about both what someone likes and what he/she needs”. This code was not used in the analysis.

Variation of empathy across dilemmas

As stated above, there was a clear variation of empathy across dilemmas. The responses to the dilemmas showed different types and amounts of empathy, as will be discussed in the analyses below. When looking at the numerical values, there is a visible difference between dilemmas as well (see Table 1). The total amount of codes for cognitive and affective empathy is declining until dilemma eight, with dilemma three as an exception, a dilemma that was coded by far the most. Dilemma eight was coded the least. Most of the high empathy codes were found in dilemmas four and three, however, dilemma five, a personal dilemma, has the highest percentage of high empathy codes, with 16,26% of all the codes in that dilemma. The least high empathy codes were found in dilemma six. Regarding low empathy codes, dilemmas seven and two had the highest percentage, around 60% each, the rest of the dilemmas were coded with low empathy codes around 35-45% of all the codes in a

dilemma. The medium codes were distributed quite equally among the dilemmas, with 30-50% of all codes in every dilemma. Most of these codes were either very close to 30% or 50%, however, this pattern does not coincide with the personal and collective dilemmas. In the following, a qualitative analysis of each dilemma will be presented and compared afterwards.

Figure 1

Picture for Dilemma 1

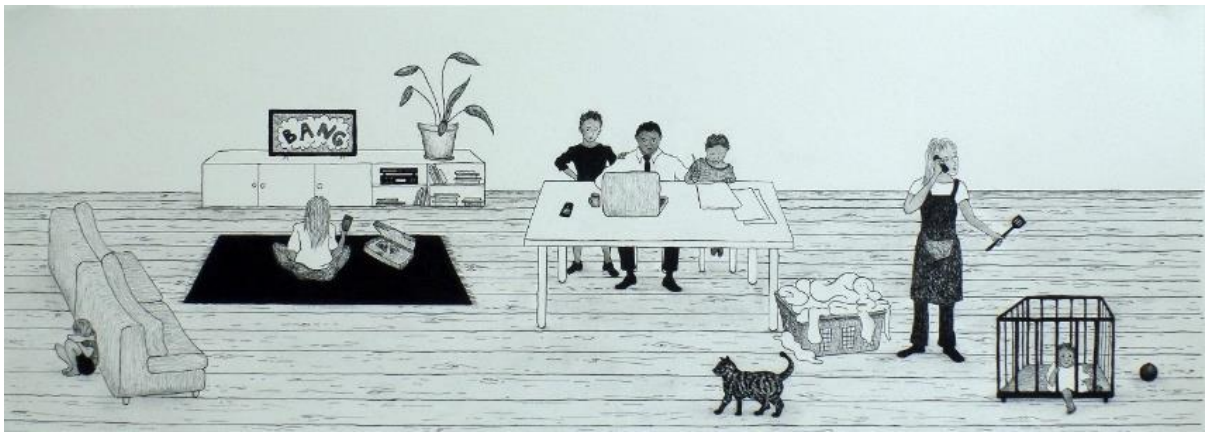
Dilemma 1: Funeral in Corona times

The first dilemma is a personal dilemma and deals with a funeral in Corona times that shows people hugging and wearing masks. The code medium cognitive empathy was the most coded, followed by medium affective empathy and low cognitive empathy. The participants mostly showed empathy with the characters in the picture by taking their perspective and expressing their opinions about being able to support the grieving persons or to protect people from catching the coronavirus. Examples of this would be “Despite the pain, there is concern about social distancing” or “you shouldn't refuse to show affection to those who have lost a loved one”. There was a lot of expressed empathy as well since the participants imagined being in the situation themselves as a form of a future self and imagined showing empathy to mourning individuals. This is shown in citations such as “I would offer any help” and “trying to be more understanding with older people who do not accept this reality”. The questions for this dilemma are formulated in such a way that participants imagined themselves being in the situation in a possible future, in contrast to imagining being one of the characters in the picture. Therefore, affective empathy was not so high as one might expect with such an emotional scene. However, even though the

participants do not necessarily imagine themselves in this situation as often as in other dilemmas, they express empathy quite frequently in an imaginary way, since this is a situation where social empathy is very important. The dilemma deals with people who are mourning and suffering very openly, something that seemed to trigger the want to express empathy in some form for the participants.

Figure 2

Picture for Dilemma 2



Dilemma 2: Home office for the whole family

In dilemma two there was mostly low, and a lot of medium cognitive empathy coded. All other codes were exceptionally underrepresented. The participants were looking mostly for solutions for the problems and dilemmas they identified, such as a better internet connection for all since the dilemma dealt with home office for the whole family, or support from teachers and parents for the children. For instance, one participant stated, “How do we ensure that the children remain motivated”, while others wrote, “Free Internet in the most difficult-to-access communities so that children and adolescents who are in remote stadiums can access and maintain contact with their teachers” and “Improve home reading programs through government incentives”. This dilemma, as well as the following, showed many differences between the participants’ expression of empathy, regarding the amount of high and low codes, as well as the type of empathy coded. Since this was presented as a collective dilemma, the participants seem to have adopted a solution-focused and emotionally uninvolved stance. Therefore, the high count of low cognitive codes does make sense. In addition, low affective empathy was also coded several times. This might be due to the first question about the description of the picture that may have induced descriptions of feelings of

the characters, especially of the sad boy behind the couch, such as “another child is sad and alone” and “She does not seem to be doing well”.

Figure 3

Picture for Dilemma 3

Dilemma 3: Discrimination in shops against the un-vaccinated

The third dilemma shows the most codes of medium affective empathy. It deals with different shops that either allow only vaccinated or all customers to shop there. The questions for this personal dilemma are asked in a way that directed the participants to put themselves into the situation of the shop owners and buyers of this dilemma. Therefore, many participants answered in a “feeling into” fashion, which resulted in a very high count of affective empathy. The participants were very involved and emotional about this situation and fewer solutions but more opinions about it were shared, such as “Vaccination seems to be becoming the new form of discrimination” or “Can you ban people on the basis of having / not having a vaccine?”. A possible explanation for this rise in affective empathy could also be that this is a personal dilemma set in the near future that is connected to dilemmas we face today, such as to take the vaccine or not.

Figure 4

Picture for Dilemma 4

Dilemma 4: Problems of the near future and after Corona

Dilemma 4 shows a politician in the middle of what seem to be problems that might face us soon and as consequences to the pandemic, such as unemployment and climate change. The dilemma is mostly coded with medium cognitive codes, followed by low cognitive and medium affective empathy. The participants show empathy in many different ways, using feelings “I feel that there is a lot of injustice and in the end, the richest are the least affected”, cognitions “I think that people with fewer resources have been the most affected.”, “Politicians will steal all the money as always” and perspective taking “The characters in the center of the image listen to the politician, who by the way is fully interested in money”. Finally, the deeper analysis of high cognitive empathy is also present more than with other dilemmas. This might be since the picture is more complex and shows a lot of ambiguity which leaves room for detailed analysis and interpretation. The general air of the responses seems to be quite desperate and angry. The participants are more focused on the unfairness of the situation than on what exactly people feel. Since it is a collective dilemma and the situation seems to be very abstract, this might be the reason. In addition, the dilemma deals with many issues that are thought of today and these issues probably feel for many like consequences that are set in stone. Therefore, they react angry or upset without being too involved since the situation shown in the picture is not yet a concrete reality.

Figure 5

Picture for Dilemma 5

Dilemma 5: Homelife in the information age

The fifth dilemma shows a picture of two individuals, one meditating, the other one dealing with a lot of books and technology. This dilemma was analysed by the participants to be about the problems of different information in the world that make it impossible to know what to believe anymore and how individuals deal with this. It was coded mainly with cognitive codes, medium cognitive empathy being the highest and high cognitive empathy and low affective empathy having the same number of codes. The participants tried to take the perspective of the two individuals in the picture and understand their motives and reasons for their behaviour, as well as their problems in their situations. For instance, participants stated, “That person is perhaps trying to transcend all hassle and get out of all the polarity”, “They scratch their head, perhaps wondering what to do, or what to focus on in the face of great security”, as well as “I think that the person exposed to all the information will be much more exposed to anxiety and stress”. Affective empathy is only truly present in the form of low affective empathy, with participants describing the feelings of the individuals on the picture, such as “he looks calm” and “The person sitting at the table on the right seems distressed”. This contrast shows that participants do not try to be emotionally involved in this situation at all. This might be due to the way the questions were formulated, not asking the participants to imagine being in the situation but to describe how they deal with the Corona crisis at that moment. In addition, it is a situation that deals with information-gathering processes which might spark a more cognitive response than an affective one. Furthermore, the misinformation problem is a topic in the news all the time right now. Maybe, after some time, people got so used to it or too fed up with it to care for it emotionally. Finally, since this

is a very personal situation, other than climate change, for instance, the participants might take the perspective of others but instead of showing empathic concern they can themselves tell their stories of suffering and might not think it necessary to feel with someone who is experiencing the same things they are.

Figure 6

Picture for Dilemma 6

Dilemma 6: Differences in social groups in Corona times

The sixth dilemma deals with a collective dilemma in which two groups are divided by a wall, one living in tents close by each other and mainly without masks and the other using masks and adhering to social distancing. The participants almost unanimously analysed this situation as refugees camping in Europe, being unable to join society but shunned because of the fear to catch the coronavirus. “They all wear masks because they don't want to catch it [the virus]”; “The city people live their lives well accustomed to the corona situation”; “In the refugee camp people can't abide by the rules at all, there's literally (and perhaps figuratively) no room for that”. The code medium cognitive empathy is the most present for this dilemma. The participants are thinking a lot about how people might feel and what they might think, taking their perspective without getting themselves emotionally involved or imagining themselves in that situation. An example for this would be “The main problem is poverty, not the coronavirus for them” and “Both groups of people are worried and distressed, but for different reasons”. Since none of the participants seems to have been in a situation of being a refugee before and this separation is not yet so obviously made as seen in the picture, the participants could probably not identify with the situation as with previous ones.

Figure 7

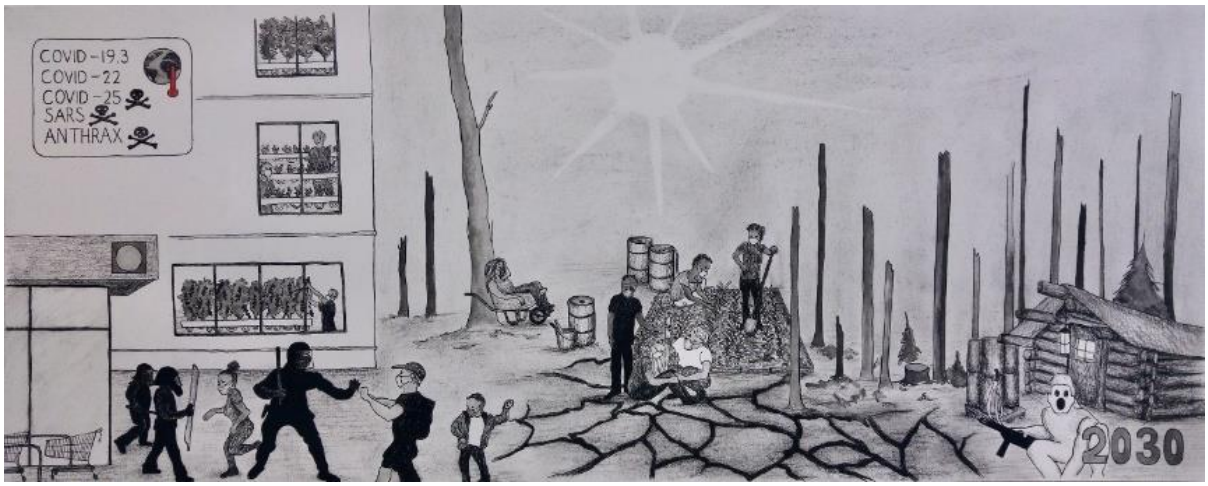
Picture for Dilemma 7

Dilemma 7: The world in 2025

In dilemma seven which is set in 2025, the focus is on surveillance, in form of cameras and wristbands that signal if someone has covid or not. The by far most present code was low cognitive empathy, followed by medium cognitive and low affective empathy. All the other codes are almost non-existent. This shows that the participants mostly took the perspectives of the people on the picture superficially and did not try to feel what the people feel. It is mostly a description of what is happening. The participants showed empathy as follows: “The dilemma arises in deciding whether these controls limit personal freedom or else”, “People have returned to a completely different normalcy” and “It has caused violence, fear and confusion”. This cognitively dominated empathy might be caused by the distance from the reality of the participants. Even though surveillance is an issue today, it has not gone as far as shown in the picture in every country yet and some participants might have had difficulties connecting with the people in that situation since it is very different to their own. However, they were still able to show empathy in some way because the dilemma shown is not as far-fetched as an alien invasion for instance.

Figure 8

Picture for Dilemma 8



Dilemma 8: The world in 2030

Dilemma eight shows a scenario set in 2030, with several viruses and nature dying. Plants are grown in a big house and almost everyone is still wearing a mask. There is also a lot of violence. The code medium cognitive empathy was coded the most, followed by low cognitive empathy. The participants were analysing the situation and perspective of the characters in the picture a lot and thinking a lot about what this situation might mean for the lives of these individuals and the world. Some examples are “Society is seen to be in chaos and despair.”, “above all, the citizens' trust in the state will deteriorate” and “At the same time, people who want to live, breathe and coexist without fear”. This analytic view that does not allow for a lot of emotional responses, might be, except for the reasons listed for dilemma 7, since this scenario is set in the far future and plays more on the participants’ fears than their realities.

Collective and personal dilemmas

The differences in coding between the collective and personal dilemmas were visible, however, they were also inconclusive. The personal dilemmas were coded with 420 more codes than the collective dilemma, a difference of 43%. However, the differences between the codes in those dilemmas are relatively similar. For instance, the medium and low codes in all the collective dilemmas are both around 200 codes, while the medium and low codes in all the personal dilemmas are around 400 codes each. This can also be seen when comparing the frequency distributions, the medium and low codes are always around 45-55% of all the codes in a dilemma and the high codes make up for 6-7%. Hence, even though the personal

dilemmas seem to elicit more empathic reactions in general, the proportion of high and low codes remains the same. However, the type of codes does change, as seen in the detailed analysis of the individual dilemmas above. Some personal dilemmas (such as dilemmas 1 and 3) showed a higher count of affective empathy than collective dilemmas while the collective dilemmas (especially dilemmas 8 and 2) were more cognitively coded. This might be due to the less personal involvement in the dilemmas which caused the participants to firstly be less empathic in general and secondly to think more of solutions and perspectives and feeling less with the characters or even imagine themselves in their situations.

Discussion

This study dealt with the question of how the expression of empathy varies in the anticipatory moral imagination of different Corona-related dilemmas. The analysis of results, as seen above, showed a variance in empathy between dilemmas regarding the type and intensity of empathy. Cognitive empathy was mostly used, followed by affective empathy, while expressed empathy was only rarely coded. The intensity of empathy was mostly medium or low and the participants did not show a lot of high empathy. There were differences in codes between collective and personal dilemmas and between individual dilemmas, with a vague pattern emerging that showed a decline in general empathy over time.

The main contribution of this study was the usage and empirical application of all the six aspects of empathy theoretically combined by Alma & Smaling (2006) since that had not been done before. The different aspects of empathy created a more differentiated view on how empathy is used. Especially regarding the differences between situations, or, in this case, dilemmas, this differentiation is a very useful tool. More variations in empathy across dilemmas can be found since empathy is conceptualized in more detail and therefore allows the researchers to divide the empathic responses of participants into different categories and compare these categories thoroughly. Hence, more differences might be apparent, as this study showed. This might also mean that this new framework might lead to the discovery of differences in empathy across situations that were so far seen as similarities since empathy was conceptualized with fewer aspects. In this study, the framework was used as a baseline for the codes, and therefore acted as the main theoretical conjecture for the empirical analysis. This functioned as an adequate method to test how the theoretical framework by Alma & Smaling (2006) holds up in its application. This study showed that the framework is a stable basis for a coding scheme since the aspects function as a natural division of codes.

Since only three of the six aspects were used in the final analysis, not much can be said to the usability of the whole span of aspects in the analysis. However, the three aspects used showed a very useful and valid distinction in this study.

The researchers themselves contributed to an addition to this framework by creating and empirical applying the distinction of intensity within the aspects of empathy. This factor of intensity shows that a conclusive conceptualization of empathy requires not only different aspects of empathy but also how strongly and thoroughly they are used. This study might be a basis for future frameworks that combine the intensity of empathy with different aspects. This study showed that those two approaches work well together and can show multiple different ways how empathy can be expressed and experienced. Hence, this study might be a valid basis for future research in this direction.

Analysis of results and implications

The results of this study, as summed up above, might have been caused by different factors, such as the difference between personal and collective dilemmas, the situation in the picture which might be more familiar or futuristic, the different times of the measurement points, the ambiguity of the picture and how emotionally invested the participants were. In the following sections, these factors will be discussed.

Differences between collective and personal dilemmas

As stated above, the personal dilemmas had in sum about twice as many codes coded as the collective dilemmas. One possible explanation is that personal dilemmas deal with dilemmas of individuals which makes it easier for the participants to relate. Empathy is shown mostly towards another person since it is possible to imagine their situation and feelings (Alma & Smaling, 2006; Decety & Jackson, 2004; Plüss, 2010). This might explain why there is in general more empathy coded in personal dilemmas. Furthermore, the formulation of the question is an important distinction between personal and collective dilemmas in this study. In the personal dilemmas, questions were more focused on the individuals' experiences while the questions for the collective dilemmas dealt with the general picture, how groups were affected and pointed in the direction of justice issues. The way people are asked about a situation affects how they then think about it (Codó, 2009; Ogden & Cornwell, 2010). This might influence how much they express empathy. For instance, in this study, the participants might have stated a general injustice towards an entire group and shown more cognitive empathy in general because the phrasing of the questions lead them to believe the solution to the dilemmas were more about impartiality and rules than feeling into the situation of the individual characters. In addition, some personal dilemmas

had five questions instead of the usual four and had automatically more text to be coded. This probably accounted for some of the numerical differences between personal and collective dilemmas, even though it could not explain all of them.

Secondly, the type of empathy varied between collective and personal dilemmas, with more cognitive codes in collective and more affective codes in personal dilemmas. This tendency might be a result of how the participants felt and thought about the dilemmas since the persons' perspectives and feelings influences how they express empathy (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Nezlek, Feist, Wilson & Plesko, 2001). The personal dilemmas might elicit a more affective response since the questions and dilemmas were shown in a way that nudged the participants towards thinking about the feelings and situation of an individual rather than a group, as mentioned above. It is shown that thinking about an individual creates a more emotional empathy response than thinking about multiple people or groups (Alma & Smaling, 2006; Maier, Slovic, & Mayorga, 2016).

Differences in the way the images are portrayed

In some dilemmas, such as the fourth dilemma, the dilemmas and the situation, in general, were not always understood or perceived differently. If the participants did not know what the characters in the picture were feeling and were in general confusion about what was going on, it might have been impossible for them to feel into the characters' situation and take their perspective. The way a situation is understood influences the intensity of empathy felt (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020). Furthermore, if participants completely differently understood a situation because it was too ambiguous, it would be difficult to compare their statements regarding empathy since it would be as if the participants were talking about completely different situations. Even a small difference in the understanding of a dilemma can influence how individuals react to it (Darley & Latane, 1968).

Differences between futuristic and familiar dilemmas

As seen in the results, different types of dilemmas set in different times and situations elicited different amounts and types of empathy, for instance, more current and therefore familiar dilemmas caused more affective responses. A possible explanation could be that these situations are connected to dilemmas the participants currently face, such as to take the vaccine or not. Individuals tend to be more empathic with current issues and people closer to them (Cikara & Van Bavel, 2014; Hoffman, 2000). However, they would still be able to take the perspective of the other person and connect with them on a cognitive level. This can also be seen when looking at the differences in empathy with in- and outgroups since one is more

familiar than the other (Avenanti, Sirigu, & Aglioti, 2010; Cikara & Van Bavel, 2014; Hein, Silani, Preuschoff, Batson, & Singer, 2010; Mitchell, Macrae, & Banaji, 2006; Zhou & Han, 2020).

Furthermore, the more futuristic dilemmas were also later in the measurement. The participants might have lost motivation to participate as emotionally involved as in the first measurements since the emotional state of a person is linked to how they experience empathy (Nezlek, Feist, Wilson & Plesko, 2001).

An alternative explanation could be that, depending on when the measurement was collected, the situation in the current world was different, also between countries. In early autumn 2020, the summer had opened possibilities that made an almost normal life possible (World Health Organization, 2020). The participants might have still felt like Corona was over. In winter 2020, the situation looked very different. The number of Corona cases exceedingly rose, starting in October 2020, and many countries issued very strict lockdowns (FOCUS online, 2020; World Health Organization, 2020). This difference in general mood and possibilities might have influenced how the participants felt about the dilemmas and therefore, how much they empathised with the characters in the pictures. Depending on how people feel and how they interpret the emotions portrayed in pictures or movies, they show more, or less empathy (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Nezlek, Feist, Wilson & Plesko, 2001). Furthermore, different situations, in general, are causing different types and valences of empathy, as described at length above (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Staats, Long, Manulik & Kelley, 2006). This shows that empathy might not only be dependent on the differences in dilemmas or situations that are imagined but also in which situations the people imagining the dilemmas are right now.

Conclusion

In conclusion, it can be said that many different variables might have an impact on the way the participants expressed empathy. Most importantly is the way the dilemmas are presented, either futuristic or familiar and either ambiguous or clearer and differences between personal and collective dilemmas as well as how the questions were phrased regarding both. This analysis shows that multiple factors play into how the expression of empathy varies in the anticipatory moral imagination of different Corona-related dilemmas. To test the validity of these results, the strengths and limitations of this study will be discussed in the following.

Strengths

This study displayed multiple strengths. First, the study was carried out in four different countries, one of those countries being outside of Europe. That enabled the researchers to look at different cultures and different perspectives during this corona crisis, which enriched the sample and made it possible to include several points of view in the analysis. Furthermore, since there were four different measurement points in the different phases of the corona times, such as a lockdown or almost being able to do anything people wanted, the mood of the individuals in different times was accounted for and even possible to observe to some extent. These results might be helpful support for research that focused on this issue.

Moreover, the researchers checked each other's coding which therefore made the coding more reliable and valid through interrater-reliability and constant checking of the meaning of the codes. These codes had a very strong theoretical background since multiple different theories support the notion of cognitive, affective and some sort of social empathy. In addition, the range of type and valence of empathy made it possible to test two concepts and hypotheses with one coding scheme. This way, the influences the valence and type of empathy had on each other could be examined and analysed. Furthermore, including the valence of empathy in the coding scheme goes into depth more and adds to the types of empathy. Thus, a more detailed and specific analysis could be carried out.

This was also the first study that used pictures as a source of imagination for an empathy study. This new contribution opens new insights about the possibilities with imagination studies that deal with the exploration of empathetic expression. Since this concept worked quite well in this study and many conclusive results could be acquired this is an adequate possibility for follow-up research.

Limitations and further research

As mentioned above, the main contribution of this paper was to use the implementation of the six aspects of empathy framework by Alma & Smaling (2006). In the analysis, however, only three of the six aspects were used since this was a moral imagination study that did not factor in the interactions between two or more individuals but only the imagination of the participants. The aspects of social empathy, interactional empathy and received empathy are defined as interactions between at least two individuals (Alma & Smaling, 2006). In this study, the participants only interacted with pictures and questions. Therefore, these aspects were not possible to be used for this study. To include all the social aspects in addition to the ones used in this study, an interaction between individuals in person would be insurmountable (Alma & Smaling, 2006; Buccino et al., 2004). For this, the

imagination part of this study would have to be altered since still pictures do not contain individuals one can interact with. Instead, the participants could for instance receive a scenario in Corona times they could act out. The social aspects of empathy mostly need interaction since social empathy does not explain the empathy felt or expressed by one person but the shared experience of empathy (Alma & Smaling, 2006; Barret-Lennard, 1993; Buccino et al., 2004).

In addition, due to the results of this study, we now assume that the type and intensity of empathy are connected to the type of situation. Multiple factors were found to explain the differences across dilemmas; however, it is inconclusive if some of that shift in empathy is explained by the difference between collective and personal dilemmas. Even though the general numbers of empathy codes were much higher for personal dilemmas, it cannot be said for certain if these differences were not caused by other factors that were not yet considered. Therefore, further research is needed to test and confirm the conclusions of this paper. For instance, in a follow-up study, the difference between collective and personal dilemmas could be made more explicit by presenting the differences more.

To make clear to the participants that the dilemmas of groups and collectives are presented, the pictures could show fewer individuals since empathy on a personal level is connected to being able to observe and take the perspective of one individual and their situation (Alma & Smaling, 2006; Buccino et al., 2004; Decety & Jackson, 2004; Plüss, 2010). Instead, more governmental and economic symbols and generalities could be shown, such as objects and buildings instead of faces and individual expressions. For instance, the refugee camp could be shown more with tents and items lying around and the people who are shown are painted more abstractly, with a less detailed expression in their faces, so only the basic emotions can be read. As seen with the bystander effect, a group of people is perceived very differently and creates other emotional reactions than a single person (Darley & Latane, 1968). This might direct the viewers to think more about society at large and less about the dilemmas of individual citizens, which would still make it possible to feel empathetic towards the group and identify different social groups but would emphasize the collective nature of the dilemma (Avenanti, Sirigu, & Aglioti, 2010; Cikara & Van Bavel, 2014). In addition, since the formulation of questions can influence the responses of the asked, the questions could be formulated either less directive to be able to focus on the impact of the pictures, or more directive to emphasize the difference between collective and personal dilemmas (Codó, 2009; Ogden & Cornwell, 2010).

Another limitation of this study is connected to another contribution, namely the usage of pictures in an empathy study. Some pictures were interpreted differently among participants and therefore the validity of the results was put into jeopardy. To be able to compare the results, it would be important for the participants to understand the dilemmas similarly so that it can be explored if they react to the same dilemma in different ways (Darley & Latane, 1968; Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020). Since the pictures are a bit ambiguous on purpose to leave room for the imagination of the participants, this is a limitation that is quite difficult to solve without creating new dilemmas, such as too little variety.

Future studies could however test out the ambiguity of their pictures with a trial study and write down any possible interpretation. This way, too big ambiguities, such as understanding the situation in the picture in completely different ways or identifying the social groups as opposites to what was intended, can be ruled out. These differences in interpretation would change the responses of the participants severely since different groups, especially in- or outgroups are perceived very differently (Avenanti, Sirigu, & Aglioti, 2010; Cikara & Van Bavel, 2014; Hein, Silani, Preuschoff, Batson, & Singer, 2010; Mitchell, Macrae, & Banaji, 2006; Zhou & Han, 2020). In addition, any change in the way the participants would interpret the overall situation could have an impact on how they express empathy (Darley & Latane, 1968; Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020). Keeping these differences from happening with a trial study would still leave enough room for the participants to interpret the small dilemmas and the inner workings of the characters in the pictures differently and therefore it would be possible to obtain some meaningful results.

During the coding, differences between the researchers and their understanding of the codes might have had an impact on how the dilemmas were coded. For instance, researcher reflexivity might have influenced the results in various ways. Researcher reflexivity describes the bias that any researcher is influenced by their background and attitudes, and this is affecting all the decisions made in research, from methods selection to the analysis of the results (Robert Wood Johnson Foundation, Cohen, & Crabtree, 2006). In this case, the influence of researcher reflexivity on the coding by the researchers might have had an impact on the results.

First, the researchers had different opinions and perspectives on some of the codes and even though they came to a shared conceptualization, these differences might have influenced the researchers in how they coded the results. Even though the codes were

checked by the other researcher, one researcher was always the main coder of a dilemma. This way, differences between dilemmas might have partly caused by the differences between the researchers. However, even though small changes might be explicable by this, the coding of all the responses was checked and no clear patterns emerged regarding this problem. Furthermore, the attitudes and perspectives of the research could in general have shaped the way they coded since no one can be completely impartial and objective and some political topics were discussed by the participants. For instance, a researcher might have coded someone as anti-empathic because they did not agree with the participant's view, even though that view might have been an empathetic one. Another bias might be that the researchers were aware of coding the personal and collective dilemmas and with that knowledge might have unconsciously coded more frequently for the personal dilemmas since they thought personal dilemmas should create more empathy.

The researchers tried to counteract these problems by going through the first dilemmas again and by exchanging ideas about how to code certain situations, as already described above. In a follow-up study, a more diverse set of researchers could code all the responses equally to ensure a less biased outcome.

During the analysis of the responses, differences were noticed among cultures, as stated above. Since these differences were not part of the investigation of empathy, it was not possible to determine if cultural differences might have played a role in how the expression of empathy changed across dilemmas. For instance, in some cultures, differences across dilemmas might be more apparent than in others. In addition, the responses of the participants might vary regarding prejudices and differences in perspectives and interpretations of the pictures because of their culture. This in turn would add to the previously discussed limitation of ambiguity in pictures. Hence, this lack of investigation into cultural differences might be a limitation to this study.

Most importantly, some differences in political interpretations were noticed that should be further analysed. Depending on the political structure of a country, the citizen might have varying views on certain topics. This can also have an impact on empathy since it is connected to how people act and support their social institutions (Joireman, Kamdar, Daniels & Duell, 2006). These differences in political perceptions could be included by using a questionnaire at the beginning of the study that tests the trust and support of participants for their government for instance.

Furthermore, this study could be carried out with a more diverse sample of countries, especially from outside of Europe. A study that includes many different countries from

different cultures might show how universal empathy and its differences across situations or dilemmas are. In this study, it is already shown that participants from four different countries reacted quite similarly to the dilemmas, even though some minor differences were noticed. Furthermore, the literature review revealed some differences between cultures, as well as differences between how individuals perceive other cultures (Avenanti, Sirigu, & Aglioti, 2010; Cikara & Van Bavel, 2014; Hein, Silani, Preuschoff, Batson, & Singer, 2010; Mitchell, Macrae, & Banaji, 2006; Zhou & Han, 2020). Maybe a study that included even more countries would reveal more similarities or differences. It would be possible to create an overviewing account of empathy expressed by human beings and how much impact the culture and societal values in the life of a person have on this experienced empathy.

Another limitation to this study is that it is not possible to determine if the differences in the type and intensity of empathy are because of the different dilemmas and how they show a more and more futuristic view of the world, or because the more futuristic dilemmas were shown in later measurement points. The participants might have been less motivated to participate in the study in later measurement points and therefore were writing less and trying less to take the perspective of the characters in the pictures. As was discussed multiple times in this paper, is shown that the mood and perspective of individuals are connected to the way they express empathy, as well as the intensity of said expression (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Nezlek, Feist, Wilson & Plesko, 2001). A follow-up study would be needed that first shows the futuristic dilemmas and closes with the more familiar ones. Comparing both studies would clear up which factor, either the placing of the measurement points or the familiarity of the dilemmas, is more prevalent.

Moreover, after having four measurement points during a time when Corona was very present, another study after this time or in the ending stages of these times, if there ever will be any, might be interesting to see if the view on these dilemmas has changed. This way, the results of this study can also be supported by concluding if the mood in the population has changed the way they think about dilemmas and how they express empathy, since, as mentioned above, mood, perspective and empathy are closely connected (Jauniaux, Tessier, Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Nezlek, Feist, Wilson & Plesko, 2001).

This is also connected to another possible further research topic, namely studying the mood and attitude of the participants toward the situation that is portrayed in dilemmas, be it Corona or surveillance or climate change. Combined with studying the way they express empathy, it could be discovered if those two aspects are related and if they stand in correlation with the times and situations in their respective countries (Jauniaux, Tessier,

Regueiro, Chouchou, Fortin-Côté & Jackson, 2020; Joireman, Kamdar, Daniels & Duell, 2006; Nezlek, Feist, Wilson & Plesko, 2001).

Finally, in addition to the mood of the participants, in this study, it was not possible to determine if the individual differences of the participants, such as age, gender, profession and personality, intervened with the results. These individual differences might play a role in the way they vary in expressing empathy between dilemmas. For instance, it is shown, that the gender of a person influences how they experience and express empathy, even though situations are shown to have a more significant impact (Cordellieri et al., 2020; Staats, Long, Manulik & Kelley, 2006). Furthermore, the profession and character of a person, especially regarding experiences in the job and empathy levels, is connected to their empathic understanding and expression (Marquié, Raufaste, Lauque, Mariné, Ecoiffier & Sorum, 2003; Sautter, Littvay & Bearnes, 2007; Sloman, Rosen, Rom, & Shir, 2005). It would be interesting to test this composition in the context of moral imagination by combining a study such as the present one with personality and mood tests.

Overall, despite the limitations, this study has shown that the usage of different aspects of empathy in the combination of their intensity in a moral imagination study regarding Corona-related dilemmas is feasible and viable. This study initiated multiple steppingstones from which future research will be possible to take off. The study of empathy using pictures as incentives for moral imagination was tested out in this study and could be explored further in the future. Furthermore, this paper discussed the shift of empathy across dilemmas. With a network of further studies, the way we understand empathy and what kind of impact it has on us, as well as how the situations we are in impact the way we experience empathy, can be developed further and even completely change. Most importantly, with the first use of the combination of intensity and the six aspects of empathy, the possibility of this pairing was established, and it was shown as a very effective way of studying empathy empirically.

Sources

20th and 21st century's major pandemics. (2020). *Atlas Magazine*. Retrieved from https://www.atlas-mag.net

Alma, H. A., & Smaling, A. (2006). The meaning of empathy and imagination in health care and health studies. *International Journal of Qualitative Studies on Health and Well-Being*, *1*(4), 195–211. https://doi.org/10.1080/17482620600789438

Avenanti, A., Sirigu, A., & Aglioti, S. M. (2010). Racial Bias Reduces Empathic Sensorimotor Resonance with Other-Race Pain. *Current Biology*, *20*(11), 1018–1022. https://doi.org/10.1016/j.cub.2010.03.071

Barrett-Lennard, G. T. (1993). The phases and focus of empathy. *British Journal of Medical Psychology*, *66*(1), 3–14. https://doi.org/10.1111/j.2044-8341.1993.tb01722.x

Buccino, G., Lui, F., Canessa, N., Patteri, I., Lagravinese, G., Benuzzi, F., … Rizzolatti, G. (2004). Neural Circuits Involved in the Recognition of Actions Performed by Nonconspecifics: An fMRI Study. *Journal of Cognitive Neuroscience*, *16*(1), 114–126. https://doi.org/10.1162/089892904322755601

Centers for Disease Control and Prevention. (2020, October 28). COVID-19 and Your Health. Retrieved 8 April 2021, from https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html

Chopik, W. J., O'Brien, E., & Konrath, S. H. (2016). Differences in Empathic Concern and Perspective Taking Across 63 Countries. *Journal of Cross-Cultural Psychology*, *48*(1), 23–38. https://doi.org/10.1177/0022022116673910

Cikara, M., & Van Bavel, J. J. (2014). The neuroscience of intergroup relations: An integrative review. *Perspectives on Psychological Science, 9*, 245–274. doi:10.1177/1745691614527464

Clay, K., Lewis, J., & Severnini, E. (2019). What explains cross-city variation in mortality during the 1918 influenza pandemic? Evidence from 438 U.S. cities. *Economics & Human Biology*, *35*, 42–50. https://doi.org/10.1016/j.ehb.2019.03.010

Codó, E. (2009). Interviews and questionnaires. In M. G. Moyer & L. Wei (Eds.), *The Blackwell Guide to Research Methods in Bilingualism and Multilingualism* (pp. 158–176). Hoboken, NJ, United States: Wiley.

Cordellieri, P., Boccia, M., Piccardi, L., Kormakova, D., Stoica, L. V., Ferlazzo, F., … Giannini, A. M. (2020). Gender Differences in Solving Moral Dilemmas: Emotional Engagement, Care and Utilitarian Orientation. *Psychological Studies*, *65*(4), 360–369. https://doi.org/10.1007/s12646-020-00573-9

Corley, M. C. (2002). Nurse Moral Distress: a proposed theory and research agenda. *Nursing Ethics*, *9*(6), 636–650. https://doi.org/10.1191/0969733002ne557oa

Cramer, P. (1996). *Storytelling, Narrative, and the Thematic Apperception Test (Assessment of Personality and Psychopathy)*. (Guilford Publications, Ed.). Retrieved from https://openlibrary.org/books/OL968983M/Storytelling_narrative_and_the_thematic_apperception_test#work-details

Cuff, B. M., Brown, S. J., Taylor, L., & Howat, D. J. (2014). Empathy: A Review of the Concept. *Emotion Review*, *8*(2), 144–153. https://doi.org/10.1177/1754073914558466

Darley, J. M., & Latane, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology*, *8*(4, Pt.1), 377–383. https://doi.org/10.1037/h0025589

Decety, J., Bartal, I. B. A., Uzefovsky, F., & Knafo-Noam, A. (2016). Empathy as a driver of prosocial behaviour: highly conserved neurobehavioural mechanisms across species. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *371*(1686), 20150077. https://doi.org/10.1098/rstb.2015.0077

Decety, J., & Jackson, P. L. (2004). The Functional Architecture of Human Empathy. *Behavioral and Cognitive Neuroscience Reviews*, *3*(2), 71–100. https://doi.org/10.1177/1534582304267187

FOCUS online (Ed.). (2020, October 31). November-Lockdown ab Montag in Deutschland: Die drastischen Regeln im Überblick. *FOCUS Online*. Retrieved from https://www.focus.de

Goldie, P. (2002). *The Emotions: A Philosophical Exploration*. Clarendon Press.

Goldman, A., & Jordan, L. C. (2013). Mindreading by simulation. In H. Tager-Flusberg, M. Lombardo, & S. Baron-Cohen (Eds.), *Understanding Other Minds: Perspectives from developmental social neuroscience* (3rd ed., pp. 448). Oxford University Press.

Hein, G., Silani, G., Preuschoff, K., Batson, C. D., & Singer, T. (2010). Neural Responses to Ingroup and Outgroup Members' Suffering Predict Individual Differences in Costly Helping. *Neuron*, *68*(1), 149–160. https://doi.org/10.1016/j.neuron.2010.09.003

Harris, P. L. (2000). *The Work of the Imagination* (1st ed.). Wiley-Blackwell.

Hoffman, M. L. (2001). *Empathy and Moral Development: Implications for Caring and Justice*. Cambridge University Press.

Jauniaux, J., Tessier, M.-H., Regueiro, S., Chouchou, F., Fortin-Côté, A., & Jackson, P. L. (2020). Emotion regulation of others' positive and negative emotions is related to

distinct patterns of heart rate variability and situational empathy. *PLOS ONE*, *15*(12), e0244427. https://doi.org/10.1371/journal.pone.0244427

Johnson, M. (2017). Moral imagination. In A. Kind (Ed.), *The Routledge Handbook of Philosophy of Imagination* (1st ed., pp. 355–367). Routledge.

Joireman, J., Kamdar, D., Daniels, D., & Duell, B. (2006). Good citizens to the end? It depends: Empathy and concern with future consequences moderate the impact of a short-term time horizon on organizational citizenship behaviors. *Journal of Applied Psychology*, *91*(6), 1307–1320. https://doi.org/10.1037/0021-9010.91.6.1307

Laabs, C. A. (2005). Moral problems and distress among nurse practitioners in primary care. *Journal of the American Academy of Nurse Practitioners*, *17*(2), 76–84. https://doi.org/10.1111/j.1041-2972.2005.00014.x

Maier, S. R., Slovic, P., & Mayorga, M. (2016). Reader reaction to news of mass suffering: Assessing the influence of story form and emotional response. *Journalism*, *18*(8), 1011–1029. https://doi.org/10.1177/1464884916663597

Marquié, L., Raufaste, E., Lauque, D., Mariné, C., Ecoiffier, M., & Sorum, P. (2003). Pain rating by patients and physicians: Evidence of systematic pain miscalibration. *Pain*, *102*, 289 –296. https://doi.org/10.1016/S0304-3959(02)00402-5

McAllister, M., & McKinnon, J. (2009). The importance of teaching and learning resilience in the health disciplines: A critical review of the literature. *Nurse Education Today*, *29*(4), 371–379. https://doi.org/10.1016/j.nedt.2008.10.011

Mitchell, J. P., Macrae, C. N., & Banaji, M. R. (2006). Dissociable Medial Prefrontal Contributions to Judgments of Similar and Dissimilar Others. *Neuron*, *50*(4), 655–663. https://doi.org/10.1016/j.neuron.2006.03.040

Molchanov, S. V. (2014). Empathy as the Factor of Moral Dilemma Solving in Adolescence. *Procedia - Social and Behavioral Sciences*, *146*, 89–93. https://doi.org/10.1016/j.sbspro.2014.08.091

Moral dilemma. (2002). In *Stanford Encyclopedia of Philosophy*. https://plato.stanford.edu/entries/moral-dilemmas/#ConMorDil

Nadler, A., & Liviatan, I. (2006). Intergroup Reconciliation: Effects of Adversary's Expressions of Empathy, Responsibility, and Recipients' Trust. *Personality and Social Psychology Bulletin*, *32*(4), 459–470. https://doi.org/10.1177/0146167205276431

Nezlek, J. B., Feist, G. J., Wilson, F. C., & Plesko, R. M. (2001). Day-to-Day Variability in Empathy as a Function of Daily Events and Mood. *Journal of Research in Personality*, *35*(4), 401–423. https://doi.org/10.1006/jrpe.2001.2332

Ogden, J., & Cornwell, D. (2010). The role of topic, interviewee and question in predicting rich interview data in the field of health research. *Sociology of Health & Illness*, *32*(7), 1059–1071. https://doi.org/10.1111/j.1467-9566.2010.01272.x

Oelhafen, S., & Cignacco, E. (2018). Moral distress and moral competences in midwifery: A latent variable approach. *Journal of Health Psychology*, *25*(13–14), 2340–2351. https://doi.org/10.1177/1359105318794842

Oh, J., Chopik, W. J., Konrath, S., & Grimm, K. J. (2019). Longitudinal Changes in Empathy Across the Life Span in Six Samples of Human Development. *Social Psychological and Personality Science*, *11*(2), 244–253. https://doi.org/10.1177/1948550619849429

Peter, E., Lunardi, V. L., & Macfarlane, A. (2004). Nursing resistance as ethical action: literature review. *Journal of Advanced Nursing*, *46*(4), 403–416. https://doi.org/10.1111/j.1365-2648.2004.03008.x

Plüss, A. (2010). *Empathie und moralische Erziehung. Das Einfühlungsvermögen aus philosophischer und pädagogischer Perspektive*. Lit.

Ramsøy, T. Z., Skov, M., Macoveanu, J., Siebner, H. R., & Fosgaard, T. R. (2014). Empathy as a neuropsychological heuristic in social decision-making. *Social Neuroscience*, *10*(2), 179–191. https://doi.org/10.1080/17470919.2014.965341

Robert Wood Johnson Foundation, Cohen, D., & Crabtree, B. (2006). Qualitative research guidelines project. Retrieved 7 July 2021, from http://www.qualres.org/HomeRefl-3703.html

Sautter, J. A., Littvay, L., & Bearnes, B. (2007). A Dual-Edged Sword: Empathy and Collective Action in the Prisoner's Dilemma. *The ANNALS of the American Academy of Political and Social Science*, *614*(1), 154–171. https://doi.org/10.1177/0002716207306360

Sloman, R., Rosen, G., Rom, M., & Shir, Y. (2005). Nurses' assessment of pain in surgical patients. *Journal of Advanced Nursing*, *52*(2), 125–132. https://doi.org/10.1111/j.1365-2648.2005.03573.x

Staats, S., Long, L., Manulik, K., & Kelley, P. (2006). Situated Empathy: Variations Associated With Target Gender Across Situations. *Social Behavior and Personality: An International Journal*, *34*(4), 431–442. https://doi.org/10.2224/sbp.2006.34.4.431

Visual Thinking Strategies. (2017, April 5). Research and theory. Retrieved 18 April 2021, from https://vtshome.org/research/

Was gilt wo und wann? Das müsst ihr zu geänderten Coronaregeln wissen. (2021). Die Stadt Köln. https://www.koeln.de/koeln/nachrichten/lokales/das-muesst-ihr-zur-maskenpflicht-und-zu-coronaregeln-in-nrw-und-koeln-wissen_1166272.html

Wildfeuer, A., Kolmer, P., Baumgartner, H. M., Wild, C., Krings, H., Hogrebe, W., . . . Vossenkuhl, W. (2011). *Neues Handbuch philosophischer Grundbegriffe: In drei Bänden* (1. ed.). Freiburg, Germany: Verlag Karl Alber.

World Health Organization. (2020). Power BI Report. Retrieved 18 June 2021, from https://app.powerbi.com/view?r=eyJrIjoiYWRiZWVkNWUtNmM0Ni00MDAwLTljYWMtN2EwNTM3YjQzYmRmIiwidCI6ImY2MTBjMGI3LWJkMjQtNGIzOS04MTBiLTNkYzI4MGFmYjU5MCIsImMiOjh9

World Health Organization. (2020, December 16). WHO COVID-19 Case definition. Retrieved 8 April 2021, from https://www.who.int/publications/i/item/WHO-2019-nCoV-Surveillance_Case_Definition-2020.2

World Health Organization. (2021, April 7). WHO Coronavirus (COVID-19) Dashboard. Retrieved 8 April 2021, from https://covid19.who.int/

Zirenko, M., Kornilova, T., Qiuqi, Z., & Izmailova, A. (2021). Personality regulation of decisions on physical distancing: Cross-cultural comparison (Russia, Azerbaijan, China). *Personality and Individual Differences*, *170*, 110418. https://doi.org/10.1016/j.paid.2020.110418