

**From Hostile to Benevolent Ageism: Polarising Attitudes Towards Older Adults in  
German COVID-19 Related Tweets**

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## Abstract

**Background and Objectives:** Previous studies have linked COVID-19 to a rise in ageism. While a growing body of research examined hostile ageism during the pandemic, benevolent ageism received less attention. Drawing on the stereotype content theory and the classic tripartite model of attitudes, the current study explored how benevolent and hostile ageism are reflected in the cognitive, affective, and behavioural dimensions of attitudes towards older adults in German COVID-19 related tweets. The study examined the most prevalent attitudes as well as changes in prevalence between the first and second lockdown period in Germany.

**Research Design and Methods:** 792 German tweets concerning COVID-19 and ageing were collected and coded using Mayring's qualitative content analysis with a dominantly inductive approach. Quantitative methods were used to identify the most prevalent subthemes as well as changes in prevalence.

**Results:** The coding resulted in 21 subthemes. Most tweets (60.73%) contained either hostile or benevolent ageist attitudes, with benevolent ageism being more prevalent. The top 5 subthemes in terms of prevalence and reach contained several opposing attitudes, such as devaluation and opposing devaluation. The chi-square tests revealed a shift from a promotion to an evaluation of COVID-19 related policies between the two lockdowns.

**Discussion and Implications:** Results highlight social media's polarising effect and its potential contribution to both hostile and benevolent ageism in the context of COVID-19 in Germany. Results indicate the need to consider the adverse effects of benevolent ageism and use of chronological age as risk factor, when designing COVID-19 related policies.

**Keywords:** Stereotype content model, Twitter, Qualitative content analysis, Age stereotypes, Coronavirus pandemic

## Background and Objectives

Since its outbreak, COVID-19 had an immense impact worldwide. Researchers suggest ageism was amplified by the acknowledged vulnerability of older adults in terms of hospitalisation and risk of death (Ayalon et al., 2021; Mueller et al., 2020). Ageism (Butler, 1969) represents age-related prejudice, discrimination based on age and age stereotypes (World Health Organization, 2021b). Ageism can be conceptualised as an attitude towards ageing and older adults and therefore, in line with the tripartite model of attitudes (Rosenberg & Hovland, 1960), includes a cognitive (beliefs about older adults), an affective (emotions evoked when interacting with older adults), and a behavioural dimension (specific actions taken towards older adults) (Iversen et al., 2009; World Health Organization, 2021b). The link between ageing and negative experiences such as physical decline, cognitive impairment, and increased dependency has been highly pervasive, perpetuating ageist attitudes towards older individuals (Craciun, 2019; Kotter-Grühn, 2015; Levy, 2009).

According to the stereotype content model, stereotypes include two primary dimensions, namely warmth and competence. Older adults, due to their perceived inferior and non-competitive status are often paternalistically stereotyped as being high in warmth, but low in competence (Fiske et al, 2002), hence evoking an ambivalent combination of emotions, such as pity, disregard, and compassion (Fiske et al., 2002). This seemingly well-intentioned, yet highly condescending stereotype of older adults was later labelled benevolent ageism (Cary et al., 2017). Benevolent ageism is distinct from hostile ageism, which expresses a more noticeable contempt towards older adults. Although the danger of hostile ageism might be more apparent, benevolent ageism is not harmless. On the contrary, benevolent ageism has been associated with both patronising, often unwanted help as well as passive harm, for example in the form of social exclusion (Cary et al., 2017). Due to negative outcomes and discrimination associated with positive-seeming nuances of ageism, it is crucial to discern hostile from benevolent attitudes and account for the complexity of ageism (Cary et al., 2017).

## Hostile and Benevolent Ageism during COVID-19

In the context of COVID-19, chronological age was emphasized as essential in the prognosis and treatment of COVID-19 (Ayalon et al., 2021; Cesari & Proietti, 2020; Colenda et al., 2020). Additionally the higher mortality rate among older adults was used as an argument to diminish the pandemic severity (Morrow-Howell & Gonzales, 2020) and implement ageist policies, like age limits for health care (Ehni & Wahl, 2020; Fraser et al., 2020).

The use of chronological age when formulating and implementing COVID-19 related policies was criticized, since it implies the ageist and oversimplified idea that every older adult is vulnerable (British Society of Gerontology, 2021; Harper, 2020; Meisner, 2020). Researchers stressed the urgency of emphasising heterogeneity in old age and avoiding a public discourse that equates old age with being in a risk group (Ehni & Wahl, 2020; Harper, 2020). As stated by Ehni and Wahl (2020), the subgroup of older adults who are particularly vulnerable to COVID-19 due to pre-existing health conditions and significant multimorbidity only represent approximately 20% of people above 65 years of age. Also, only 4% of people above 65 live in elder care facilities, which have been particularly affected by the virus. These findings are compatible with studies suggesting that developmental diversity increases as people age and that heterogeneity (e.g. psychological, social and health related aspects) is the highest among older individuals (Pachana, 2016). It is, therefore, of significant concern that the public discourse on COVID-19 included stereotypical representations of older adults as a homogenous group characterized by frailty, illness, and helplessness (Ayalon et al., 2021).

Several papers highlighted clear examples of hostile attitudes towards older adults in the COVID-19 context, such as the official statement by the Lieutenant Governor of Texas Dan Patrick urging older adults to “sacrifice themselves” for the younger generation (Barrett et al., 2021; Ng & Indran, 2022). Meanwhile, a lack of awareness regarding benevolent ageism during COVID-19 was noted (Vervaecke & Meisner, 2021). In response, researchers encouraged a broadening of the

discourse about ageism during the pandemic by including critical examinations of benevolent manifestations of ageism and their link to chronological age as an oversimplified risk factor (Vervaecke & Meisner, 2021).

### **The Role of Social Media**

Social media may play an essential role for ageism in the context of COVID-19. First, previous research suggests that specific strong emotions like fear and anger drive user influence on social media, i.e. so-called opinion leaders with high influence had higher scores on these negative emotions (Chung & Zeng, 2018). Moreover, social media users show a preference for information that confirms previous beliefs (Del Vicario et al., 2016), and polarising content has been found to gain more popularity and stimulate greater activity (Shore et al., 2018). The association between social media usage and ingroup polarisation may explain why mass media has been found to promote opposing and contradictory views on ageing, thereby intensifying both positive and negative age stereotypes (Clarke, 2009; Clarke et al., 2014 Craciun, 2019). Levy et al. (2014) argue that negative age stereotypes might be particularly prevalent on social media. Finally, social media played an essential role in the generation and consumption of information during COVID-19, and thus potentially influenced people's attitudes (Tsao et al., 2021).

Several studies on ageism during the pandemic focussed on social media, often expressing a fear of hateful messages being spread (Fraser et al., 2020; Meisner, 2020; Morrow-Howell & Gonzales, 2020). For example, Sipocz et al. (2021) identified various conflictive and unifying generational discourses through a qualitative content analysis (QCA) on the viral and clearly hostile ageist #boomeremover hashtag on Twitter. Twitter offers several benefits for studying ageism. For example, its content is publicly available – compared to other social media platforms like Facebook and is used widely by various age groups (Ölcer et al., 2020). Furthermore, Twitter gained increasing attention as an essential crisis communication tool, especially during natural disasters (de Bussy & Paterson, 2012).

As such, previous studies on COVID-19 related ageism on social media (Barrett et al., 2021; Jimenez-Sotomayor et al., 2020; Ng & Indran, 2022; Sipocz et al., 2021) focussed mainly on hostile ageism (e.g. used search queries like the #boomeremover hashtag), while largely ignoring the potential surge in benevolent ageist sentiments on social media (Vervaecke & Meisner, 2021). Considering the publicly communicated link between old age and high risk combined with a perceived insufficiency regarding governmental intervention, a global upsurge in “caremongering” (as opposing to “scaremongering”) was initiated by mainly younger individuals on social media (Vervaecke & Meisner, 2021). In turn, this phenomenon was linked to a perpetration of benevolent ageist attitudes (Vervaecke & Meisner, 2021). Therefore, there is a need for empirical research examining the prevalence of both hostile and benevolent ageism in the public discourse on Twitter during the Covid-19 pandemic.

### **The Present Study**

This paper addresses the research gap concerning benevolent ageism during COVID-19 by using QCA on a large sample of German tweets. Germany is one of the most drastically changing EU states in terms of its age demographics (Eissel, 2021) and one of the top-twenty countries worldwide in terms of the gross number of cases or deaths related to COVID-19 (World Health Organization, 2021a). Furthermore, Germany has robust policies in place that recognise the need to counter ageism e.g. by recognising older individuals as a resource, rather than a burden (Craciun, 2019; Tesch-Römer & Wurm, 2012). Finally, German COVID-19 policies, compared to those of neighbouring countries, relied on social responsibility and compliance rather than strictly controlled curfews, and policymakers asked citizens to show solidarity and personal responsibility by complying with restrictions (Zimmermann et al., 2021). Therefore, Germany serves as a solid case study for studying potential benevolent ageist responses to such government policies.

The current study looked at COVID-19 related tweets from the period of March 2020 to March 2021. This timeframe was chosen because it includes both the first and second periods of

COVID-19 related restrictions (i.e. lockdown policies) in Germany (Chambers & Carrel, 2020; Delfs & Reiter, 2020; Kuras, 2020; Naumann et al., 2020). To examine benevolent and hostile aspects of ageist attitude in German COVID-19 related tweets, the following research questions were formulated:

**Q1:** How is benevolent and hostile ageism reflected in the cognitive, affective, and behavioural dimensions of attitudes towards older adults in German COVID-19 related tweets?

**Q2:** What attitudes towards older adults are the most prevalent in German COVID-19 related tweets?

**Q3:** How has the prevalence of different attitudes towards older adults changed between the first and second lockdown periods in Germany?

### **Research Design and Methods**

Similar to other papers on Twitter (Ng & Indran, 2022; Sipocz et al., 2021), a mixed methods design, defined as a QUAL + quan exploratory concurrent design (see Hamad et al., 2016; Schoonenboom & Johnson, 2017), was applied.

### **Sample and Data Collection**

The tweets were collected utilising Twint (Zacharias, 2020), a publicly available advanced scraping tool for Twitter (Nuzhath et al., 2020; Widyanarko & Hizbaron, 2020). To scrape relevant tweets, the following search query was adapted from Jimenez-Sotomayor et al. (2020) by translating the keywords and hashtags into German: (“alt OR älter OR alten OR boomer AND COVID19 OR Coronavirus”). This search query was chosen due to its neutral terms, thereby avoiding the use of hashtags known for specific hostile or benevolent ageist statements to prevent a sampling bias towards a specific form of ageism.

For the collection of tweets, a time frame ranging from the 17 March 2020 and 17 March 2021 was chosen, since this was the day that the German borders were closed, followed by the German

Chancellor Angela Merkel announcing a general lockdown on the following day (Naumann et al., 2020). In total, the search query yielded 37,053 results. These were then sorted by language and originality, so that only original tweets (i.e. no retweets without content written by the user) in German were collected, resulting in a dataset of 5024 tweets. Next, the tweets were again sorted out based on the following inclusion criteria:

- The keywords “alt,” “älter” and “alten” had to refer to old age (not for example sentences such as “when will things go back to their **old self**” / “zurück zur **alten** Normalität.”).
- The tweets had to have some original content and not be simply a retweet of/link to, for example, a news article, another link, or announcements (such as an announcement of death e.g. “heute sind X gestorben”, an announcement of new vaccination numbers e.g. “heute sind X Personen geimpft worden”). If a link was shared and additional text was added to the tweet, it was included in the sample. Therefore, original refers to the tweet containing text written by the user itself.
- The focus of the content in the tweets had to be on Germany (not related to events in other countries). This was done with the aim of avoiding tweets written in German by people living in other states, such as Austria or Switzerland.

The final dataset comprising 792 original tweets was saved in a separate .csv file. Here, only the date, content of tweet, replies count, retweets count, likes count, and used hashtags were saved and all names and usernames were pseudonymised by removing the names as well as usernames and instead adding a randomised participant ID. The pseudonymised Excel spreadsheet was available only to the two coders and second author. All data was stored in encrypted folders on two external USB flash drives to which only the two authors had access to. These steps followed the DSGVO/GDPR guidelines (European Parliament & Council of the European Union, 2016). All data collected from Twitter is publicly available and is therefore considered to be public domain material (Ölcer et al., 2020). Thus, tweets can be analysed without direct consent being required from users. Nonetheless, we aimed to protect the users’ privacy.



## Data Analysis

For this study, the QCA approach ( Mayring,2014) was utilised, since it is well-suited to systematically extract, classify, and interpret latent meanings of text data, including social media posts (Hsieh & Shannon, 2005; Mayring, 2014; Parker et al., 2011). .

First, we defined an entire tweet as the unit of analysis, since tweets have a relatively short format (Twitter has a general limit of 280 characters per tweet), and mostly focused on a single topic (Mayring, 2014). This means that only one subtheme was ascribed per tweet. We applied an inductive and deductive approach to develop a category system, as recommended by Mayring (2014).

To answer the first research question, we used both deductive and inductive techniques, (see Sipocz et al., 2021). This means that the research questions guided the analysis. Each tweet was assessed as being either benevolent ageist, hostile ageist, non-ageist (no ageism recognised in the tweet) or anti-ageist (tweet directly opposing ageist ideas). Nonetheless, new subthemes emerged inductively within these broader frames.

We inductively extracted the subthemes from the tweets using the inductive category assignment (Mayring, 2014). This procedure allows for a pre-definition of relevant material-sections, similar with the inductive-dominant approach by Sipocz et al. (2021). First, both authors separately read through the entire material. Following this initial step, the first author analysed the material tweet by tweet. Subthemes were paraphrased directly from the tweets, meaning that the subtheme-categories came from the material itself, hence inductive (Mayring, 2014). The subthemes were constructed as a term or short sentence that gave a precise characterisation of the tweet's main theme (Mayring, 2014). For example, the tweet "All these restrictions on #COVID19? OK. Must be. What annoys me the most? About 90% of the people I see without a mask are people older than 65 years... WHAT'S WRONG WITH THEM ????" was summarized as containing the subtheme "older adults being irresponsible in relation to COVID-19".

In accordance with the procedure of inductive category assignment, once the first author had constructed the first subtheme, the subtheme of each new tweet was compared with the previously coded subthemes, following a reductive approach (Mayring, 2014). If a new tweet was compatible with a previously constructed subtheme, it was either included into the pre-existing subtheme, or the subthemes were combined and reformulated to better encompass all aspects of the tweets. If no compatible subtheme was found, a new subtheme was constructed. After coding 250 tweets – that is approximately 30% of the overall dataset – saturation was achieved at 21 Categories, namely the categories were exhaustive, and no new subthemes were needed to describe the following tweets (Mayring, 2014). Next, a joint revision was undertaken, with the second author reading the initial coding scheme and discussing it with the first author. Furthermore, the coding scheme was then sorted according to the three dimensions of attitudes, and some subthemes were reformulated, combined or split. For example, since the subtheme “older adults being irresponsible in relation to COVID-19” contained a belief about older people (ascribing the stereotypical trait of irresponsibility), it was renamed as “irresponsible” and categorised under the cognitive dimension. Following this, a back testing was carried out, where both authors independently categorized the initial 250 tweets using the revised subthemes and once again discussed and revised certain subthemes.

Using the final category system, the first author and a new second coder worked through the full data set separately. To prevent bias, the second coder was provided solely with the final category scheme with subtheme descriptions, with no additional knowledge about either the theories used to guide the analysis, the research questions, or the aims of the study. After the full dataset had been coded by both parties, the two coding sheets were compared to check for inter-rater reliability. Krippendorff’s alpha was chosen as a measure of inter-rater reliability, since Mayring (2014) considers it to be the most suitable coefficient for QCA. Finally, the two coders discussed each code and decided on a final coding sheet, which was used for further quantitative analysis.

In respect to the second research question, a frequency analysis was undertaken to identify the most prevalent subthemes (Krasnova et al., 2013; Sipocz et al., 2021), and consisted of calculating the percentages of the total amount of tweets containing each subtheme. However, on Twitter a single tweet can be more or less visible depending on how many people see and share the tweet. This means that a less frequent subtheme can reach a larger audience than a more frequently posted one, thereby being more prevalent. This phenomenon was accounted for by calculating a proxy variable for the reach of a specific category, that is, by aggregating the sum of likes, comments and retweets across all tweets and then summarising the values for each subtheme. Therefore, in the discussion of the prevalence of different subthemes, both the frequency and reach metrics were considered.

To assess the third and final research question – namely whether there was a difference in the frequency of certain subthemes throughout the pandemic (focussing on the first and second lockdowns) – the sample was split into two time-periods. The date chosen to split the sample was the 8<sup>th</sup> of August 2020, since it represents the middle of the first and second lockdown periods in Germany. (Chambers & Carrel, 2020; Delfs & Reiter, 2020; Deutsche Welle, 2020; Kuras, 2020). Furthermore, it splits the sample exactly in half, which helps to prevent the frequencies from being distorted by one sample period containing more observations than the other. Lastly, chi-square tests were used to compare the frequency distributions of each category between the two time periods (Lee et al., 2014).

## Results

### **Hostile and Benevolent Ageism in German COVID-19 Related Tweets**

The inductive coding process resulted in 21 different categories. This relatively high number of categories was needed to encompass a nuanced description of hostile ageist, benevolent ageist, non-ageist and anti-ageist aspects of all three attitude dimensions. The overall interrater agreement

was found to be  $\alpha = 0.81$ , which is above the general threshold of accepted agreement of  $\alpha \geq 0.80$  (Mayring, 2014).

The cognitive dimension included subthemes ascribing specific characteristics to older adults, i.e. how people perceive older adults. The inductive coding resulted in a total of six ageist subthemes, three of which were of a predominantly hostile nature. Two of the hostile subthemes described older people as being a burden to society or irresponsible in relation to COVID-19. The final hostile cognitive subtheme ascribed more unspecific, diffuse negative characteristics to older adults (with no direct link to COVID-19). The three more benevolent subthemes contained stereotypes of older individuals as being vulnerable (either in relation to COVID-19 or generally), lonely, or victims of neglect (either in relation to COVID-19 or generally). In contrast, only three non- or anti-ageist cognitive subthemes were identified. Two of these subthemes describe older adults as not being the only group vulnerable to COVID-19 (with the focus on a universal vulnerability to the virus) or being heterogeneous in their vulnerability, thereby contrasting the benevolent emphasis of chronological age as an oversimplified risk factor. The final anti-ageist subtheme described older adults as being a resource to society in terms of, for example, having contributed to the current standard of living.

The affective dimension contained subthemes expressing affective responses to older adults in relation to COVID-19 and contained two hostile ageist and two non-/anti-ageist subthemes. The hostile affective subthemes comprised a sensation of indifference or hostility towards older adults dying of COVID-19 (resulting in devaluation of their death) as well as the sensation of being irritated when interacting with older adults. The non- or anti-ageist affective subthemes expressed either a negative emotional response to people devaluing the COVID-19 related deaths of older adults (i.e. an opposition to the devaluation) or a feeling of intergenerational solidarity in relation to the pandemic.

Third, the subthemes belonging to the behavioural dimension described different opinions concerning actions taken during the pandemic, with a specific focus on age, for example lockdown policies and vaccination policies. One subtheme was categorised as hostile, since it criticised vaccination strategies due to a devaluation of older people, saying that the sacrifice is not worth it “just” to protect older individuals and that these older individuals steal resources from younger ones. There were four benevolent ageist subthemes which over-emphasised chronological age as a singular risk factor. For two subthemes, this over-emphasis was reflected in a promotion of selective vaccination or lockdowns for older adults e.g. criticising lockdowns on and vaccinations for younger adults as “exaggerated”. The other two subthemes emphasised a need for protective behaviours towards older people and criticised younger individuals for putting older people at risk by behaving irresponsibly. The two non-/anti-ageist subthemes included criticising the concept of selective lockdown (i.e. only isolating older adults) or criticising a vaccination strategy that over-emphasises age. Finally, one subtheme, *awareness of age*, did not directly address older adults but rather revolved around personal experiences around one’s own age and becoming aware of one’s age due to COVID-19. The complete final category system can be found in Supplementary Table 1 in Online Supplementary Material.

### **Identifying the Subthemes with the Highest Frequency and Reach**

A frequency analysis was carried out to identify the tweets with the highest percentual prevalence and highest reach, thereby answering the second research question. In total, the reach (sum of comments, likes and retweets) of all 792 tweets was 59,384. The majority of the tweets (60.73%) were categorised as containing hostile benevolent ageist themes, whereas only 33.21% of the tweets contained non- or anti-ageist topics. Benevolent ageism (37%) was more prevalent than hostile ageism (23.36%). In terms of frequency, non- or anti ageist subthemes (44,604) had the highest reach. Again, benevolent subthemes (11,259) had a higher reach than that of hostile subthemes (1470), suggesting that benevolent themes were more popular, received more likes and

comments, and were more frequently retweeted. The frequencies and reach for each category can be found in Table 1.

[Insert Table 1]

Furthermore, the subthemes with the highest frequency and reach were identified for further examination. Figure 1 and 2 illustrate the top 5 subthemes in terms of frequency and reach, respectively. Out of the six categories with highest frequency and/or reach, three were non-/anti-ageist (universally vulnerable, feelings of solidarity, and opposing devaluation), two benevolent ageist (victims of neglect and protection) and one hostile ageist (devaluation).

The most frequent subtheme *universally vulnerable* (frequency = 13.26 %, reach = 2351) focussed on emphasising that not only older adults could get seriously ill or die from COVID-19, with several tweets using anecdotes of younger and healthy individuals who had serious complications or died due to the virus. Taken together, the subtheme argued against the benevolent ageist idea that mainly or only older adults are at high risk of COVID-19.

The second subtheme *feelings of solidarity* (frequency = 6.69%, reach = 40,150) focussed on opposing intergenerational narratives, commonly using the metaphor of everyone “being in the same boat.” The idea that old people do not care about the environment and the young do not care about COVID-19 was criticised, while the notion that social issues can only be solved through intergenerational solidarity, mutual support, and compassion was promoted.

Two of the subthemes with the highest frequency and/or reach stood in clear opposition to each other, namely *devaluation* and *opposing devaluation*. *Devaluation* was only in the top 5 in terms of frequency (10.60%) and was clearly hostile. In tweets coded with this subtheme, the seriousness of older people dying was either played down, by arguing that they would have died soon anyway or by arguing that they would not have had much left to live for even if they had not died from COVID-19. Some tweets even promoted the death of older adults, for example by saying

that it would be beneficial for the economy to “get rid of” the older people in society. The subtheme *opposing devaluation* (frequency = 11.74%) could be seen as a direct counterresponse to the subtheme *devaluation*, wherein the arguments commonly used to devalue the deaths of older adults were opposed.

The most frequent benevolent ageist subtheme was *victims of neglect, COVID related* (frequency = 10.98%, reach = 2517). This subtheme was categorised as benevolent ageist, due to the clear focus on victimisation, vulnerability, and weakness. Many tweets of this subtheme either stated that mainly or only older adults were at risk of COVID-19. Additionally, the subtheme circulated around a highly generalising portrayal of older adults as having been left in elder care with insufficient care and protection.

The final prevalent subtheme *protection* (5.81%) was categorised as benevolent ageist, due to its propagation of the idea that older adults need the protection of younger individuals, again creating a very homogenised view of older people as vulnerable. Whereas *feelings of solidarity* focused on opposing intergenerational narratives, the subtheme *protection* presented a very clear intergenerational narrative, where younger individuals were described as having to follow COVID-19 restrictions not for the sake of everyone, but specifically to protect older, vulnerable individuals.

[Insert Figure 1]

[Insert Figure 2]

### **Time Series Analysis of Subtheme Prevalence between the First and Second Period of COVID-19 Related Restrictions in Germany**

Finally, chi-square comparisons were carried out individually for each category to answer the third research question. An overview of the frequencies of each category in the first and second period can be found in Table 2. These comparisons revealed that some subthemes became significantly more frequent in the second period, while others decreased significantly.

[Insert Table 2]

Both the subthemes *vaccination age limit 1 (contra)* ( $\chi^2(1, N = 792) = 9.9095, p = 0.001644$ ) and *vaccination age limit 1 (pro)* ( $\chi^2(1, N = 792) = 6.2593, p = 0.01235$ ) were significantly more frequent in the second time-period. The subtheme *Victims of neglect, COVID related* ( $\chi^2(1, N = 792) = 6.502, p = 0.01078$ ) was also significantly more frequent in the second period. Meanwhile, both the subthemes *harmful behaviour of young* ( $\chi^2(1, N = 792) = 20.092, p < 0.001$ ) and *protection* ( $\chi^2(1, N = 792) = 6.4891, p = 0.01085$ ) were significantly less prevalent in the second period. Furthermore, the subtheme *opposing devaluation* also became significantly less frequent in the second period of measurement ( $\chi^2(1, N = 792) = 4.6472, p = 0.0311$ ).

### Discussion and Implications

The aim of this paper was to explore different dimensions and prevalence of benevolent and hostile ageism in German COVID-19 related tweets as well as identify changes in the prevalence of different subthemes between the first two lockdown periods in Germany. Following the stereotype content model, most of the collected tweets were categorised as either hostile or benevolent ageist. This is compatible with previous research suggesting that a stereotypical association between old age and negative traits such as vulnerability has been pervasive in Western countries like Germany (Craciun, 2019; Kotter-Grühn, 2015; Levy, 2009).

Importantly, benevolent ageist subthemes had the highest total frequency and their reach exceeded that of hostile subthemes by 11.25 times. These, often seemingly well-intentioned subthemes expressed a wish to help and support older adults during COVID-19, but also contributed to perpetuating a stereotypical portrayal of older adults as vulnerable. Older adults were portrayed as a uniformly vulnerable group, who, due to their fragility, and an inability to care for themselves, require support and protection and are neglected by society. This supports the idea that a “caremongering” phenomenon is highly present on social media (Vervaecke & Meisner, 2021).



Furthermore, given the importance of acknowledging diversity/heterogeneity in old age in relation to COVID-19 ( Ehni & Wahl, 2020; Tesch-Römer & Wurm, 2012), it is highly problematic that such conceptualisations of ageing were underrepresented in the sample. Only one single subtheme focused on heterogeneity in relation to older people (i.e. *heterogeneously vulnerable*), and only two tweets out of the entire sample contained this subtheme. Furthermore, the category *victims of neglect*, which displayed a highly homogeneous view of older adults, was one of the most prevalent subthemes, both in terms of frequency and in terms of reach. Certainly, it is important to address the potential shortcomings in terms of protecting vulnerable individuals and fostering greater awareness of inadequate resources in elder care. Nonetheless, is it equally important to avoid promoting a benevolent and condescending discourse and to emphasize that not all older adults live in elder care or belong to a highly at-risk group. The uniform portrayal of older adults as being “left in elder care” might promote overgeneralised and benevolent ageist attitudes towards older adults and ageing (i.e. all older adults belong to a homogenous, highly vulnerable group).

Another interesting finding was that several of the top subthemes in terms of frequency and/or reach contained seemingly opposing attitudes. For example, *feelings of solidarity* and *universally vulnerable* (working against an over-emphasis of chronological age as a risk factor) can be seen as clear oppositional attitudes to those within the two subthemes *protection* and *victims of neglect*. Similarly, both *devaluation* and *opposing devaluation* were some of the most frequently occurring subthemes. This lends support to previous research that showed that emotional and polarising content tends to have greater social influence on social media (Chung & Zeng, 2018; Shore et al., 2018). Additionally, it endorses the idea that social media might have a polarising effect on people’s attitudes towards older individuals as well as enhance pre-existing negative age stereotypes. This is important, since social media has played a crucial role in information-sharing and -consumption, during the pandemic, potentially having a large effect on the public discourse during this time.

The time series analysis showed a high contextuality of COVID-19 and age-related topics on social media. It is intuitively sensible that the vaccination related subthemes would become more frequent in the second measurement period, as vaccines began to be distributed. Nonetheless, other less self-explanatory changes in prevalence were identified. Interestingly, the subthemes *protection* and *harmful behaviour of young* became significantly less frequent, while the subtheme *victims of neglect, COVID related* became significantly more frequent in the second measurement period. This suggests that while the first period of lockdown policies was characterised more by a promotion of behaviours aiming at protecting older individuals (i.e. calling for people to follow restrictions and for young people not to be irresponsible), the second lockdown period described the actions being taken in the first period as inadequate, criticizing the neglect of older people. These findings are important, as they suggest that a somewhat positive wish to protect older individuals was prevalent among the tweets. This desire, nonetheless, is problematic in terms of equating age alone with greater risk from COVID-19, thereby stigmatising older people as a uniformly and homogeneously vulnerable group. Additionally, these findings support the idea that a “caremongering” phenomenon can be seen as a response to protective measures, public communicated risk factors, and perceived insufficient government policies (Vervaecke & Meisner, 2021).

Taken together, based on the findings of the current study, it can be argued that benevolent ageism is highly prevalent on social media, such as Twitter. Furthermore, the findings suggest a strong polarising effect of social media concerning COVID-19 and ageing, since opposing attitudes were identified among the most prevalent subthemes. Specifically, benevolent ageist calls for protecting older adults can be seen as polarised in opposition to the hostile devaluation of older adults’ lives. Finally, when looking at the results of the time series analysis, it becomes apparent that many tweets moved from expressing various attitudes towards specific measures to evaluating the effectiveness of those measures. This highlights the close link between the subthemes and specific

COVID-19 related measures taken in Germany, for example social distancing measures relying on social compliance (Zimmermann et al., 2021).

Although the study was undertaken in a German context, these findings are likely transferable to other countries relying on the formulation of chronological age as a risk factor within their COVID-19 related policies and especially those more dependent on social responsibility and compliance. Findings emphasise a general need to create awareness about negative outcomes of benevolent ageism and the close link between formulations, framing, and implementations of specific policies and ageist related outcomes. Future studies could benefit from comparing these findings with other countries to identify links between specific policy-strategies and ageist outcomes. Finally, this paper illustrates the relevance of social media platforms like Twitter, to researchers and policy makers who wish to combat COVID-19 related ageism, since its content reflects the attitudes of individuals responding to COVID-19. Furthermore, Twitter has the potential to perpetuate and shape ageist attitudes, due to its status as a key information source for many people during the pandemic.

The current study presents several limitations. First, the tweets were selected based on language rather than geographic location. Although all tweets indicating that they might have been written by other German native speakers – for example, those containing Austrian/Swiss flags, referring to foreign politicians etc. were removed from the final data series – it was not possible to guarantee that all tweets in the sample were written by residents of Germany. Another shortcoming arose from the inability to collect personal information – such as age, gender and socioeconomic status – on the Twitter users responsible for the tweets included in the sample. In terms of future research, it would be extremely interesting and useful to examine the prevalence of subthemes across different demographic groups or ages.

## Conclusion

The high prevalence of benevolent ageism in German COVID-19 related tweets is important since this ageism form was linked to various negative outcomes like condescending behaviour or social exclusion of older adults (Cary et al., 2017). While the danger of hostile ageism might be more obvious, it is equally relevant to stress the potentially negative outcomes of benevolent ageism during COVID-19. The latter may reflect a desire to help and support but also contributes to perpetuating negative ageing stereotypes. The nature of COVID-19 vulnerability is rather complex, with multiple factors contributing to an individual belonging to a risk group. Thus, using chronological age as an over-simplified factor when defining a COVID-19 risk group is problematic because it might become common sense knowledge and contribute to an increased consensus surrounding the homogenous vulnerability of older adults (i.e. negative stereotypes about older adults). Furthermore, the reliance on chronological age combined with an emphasis on social responsibility, might trigger care-oriented yet benevolent reactions (Vervaecke & Meisner, 2021). In line with the propositions formulated by Ehni and Wahl (2020), these findings suggest that policy makers should be cautious when using age as a decisive factor in COVID-19 related policies (e.g. determining vaccine access or other measures solely based on age). Such policies may enhance the negative notion that old age equals vulnerability, thereby oversimplifying the concept of vulnerability as well as overlooking heterogeneity in old age.

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### **Conflict of Interest**

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### **Ethical Declaration**

This study was approved by the ethical commission of the Freie Universität Berlin.

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Figure 1. Top five subthemes in terms of frequency

*Note.* Frequency is calculated as the sum of tweets with a specific subtheme.

Figure 2. Top five subthemes in terms of reach.

*Note.* Reach is calculated as the sum of likes, comments, and retweets of all tweets belonging to a specific subtheme.

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## Tables

**Table 1**  
Frequency and Reach of Each Subtheme

Dimensions and subthemes	Share of Tweets ( <i>n</i> = 792) % (sum)	Reach <sup>a</sup> (Total reach = 19,320)
<b>Cognitive Dimension</b>		
<b>Hostile ageist subthemes</b>		
Burden	2.40 (19)	96
Irresponsible	5.56 (44)	273
Other negative characteristics	2.65 (21)	113
<b>Benevolent ageist subthemes</b>		
<b>Vulnerable</b>		
COVID vulnerability	5.05 (40)	1,803
General vulnerability	0.88 (7)	17
Lonely	2.53 (20)	1434
<b>Victims of Neglect</b>		
COVID related	10.98 (87)	2,517
General	1.14 (9)	64
<b>Non- or anti-ageist subthemes</b>		
Universally vulnerable	13.26 (105)	2,351
Heterogeneously vulnerable	0.25 (2)	9
Resource	0.76 (6)	9
<b>Affective Dimension</b>		
<b>Hostile ageist subthemes</b>		
Devaluation	10.60 (84)	526
Irritation	0.25 (2)	1
<b>Benevolent ageist subthemes</b>		
<b>None</b>		
<b>Non- or anti-ageist subthemes</b>		
Opposing devaluation	11.74 (93)	2,080
Feelings of solidarity	6.69 (53)	40,150
<b>Behavioural Dimension</b>		
<b>Hostile ageist subthemes</b>		
Contra vaccination age limit	1.89 (15)	30
<b>Benevolent ageist subthemes</b>		
Pro vaccination age limit	1.01 (8)	5
Lockdown critique	5.93 (47)	431
Protection	5.81 (46)	2,147
Harmful behaviour of young	4.04 (32)	3,336
<b>Non- or anti-ageist subthemes</b>		
Contra selective lockdown	0.13 (1)	2
Vaccination age limit 2	0.38 (3)	3
<b>Other Subthemes</b>		
Awareness of age	1.77 (14)	112
Not related	4.29 (34)	1,875
<b>Summary</b>		
Hostile ageism (total)	23.36 (185)	1,470
Benevolent ageism (total)	37.37 (296)	11,259
Non- or anti-ageism (total)	33.21 (263)	44,604
Other (total)	6.06 (48)	1,987

Notes. COVID = coronavirus disease.

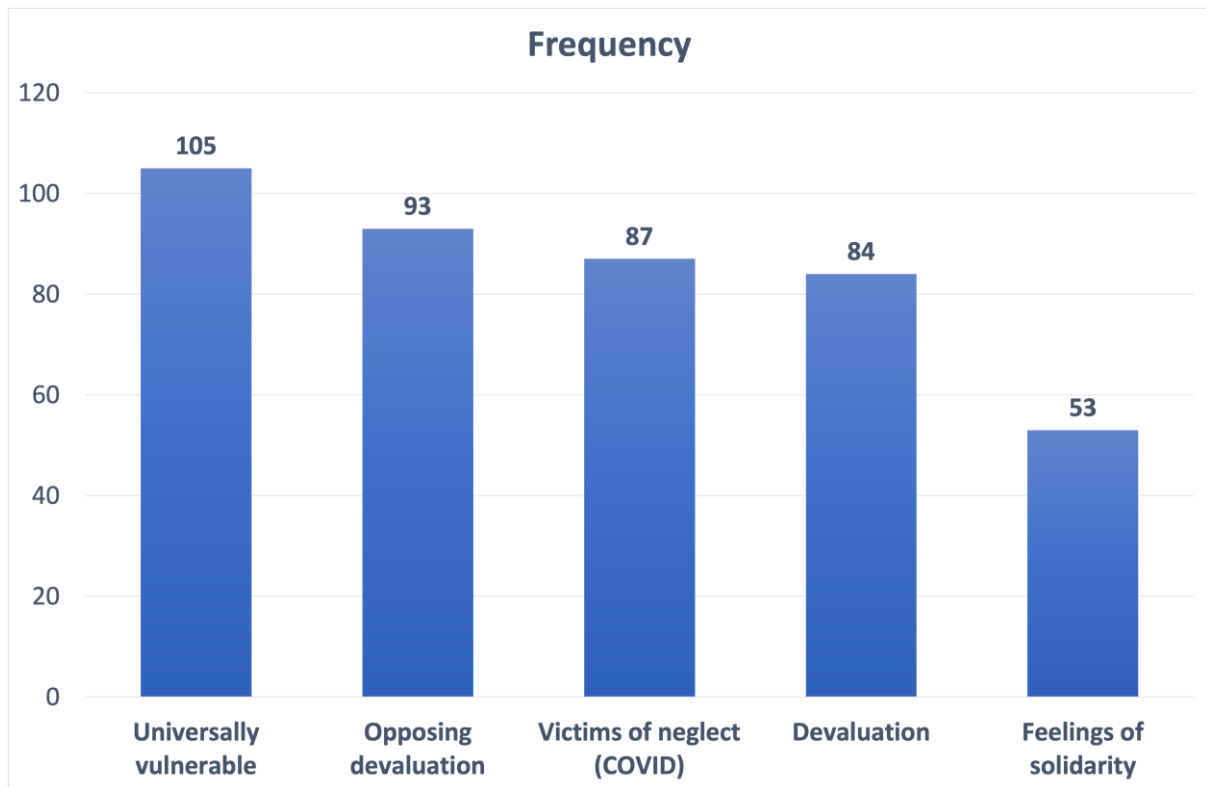
<sup>a</sup> Sum of likes, comments, and retweets

**Table 2. Frequencies of Each Subtheme in First and Second Time-Period.**

Category Name	Period 1	Period 2
COVID vulnerability	15	25
General vulnerability	2	5
Lonely	8	12
Burden	9	10
Irresponsible	25	19
<b>Victims of neglect (COVID)</b>	<b>32</b>	<b>55*</b>
Victims of neglect (general)	5	4
Other negative characteristics	11	10
Devaluation	36	48
Irritation	1	1
<b>Vaccination age limit 1 (contra)</b>	<b>1</b>	<b>14*</b>
<b>Vaccination age limit 1 (pro)</b>	<b>0</b>	<b>8*</b>
Lockdown critique	22	25
<b>Harmful behaviour of young</b>	<b>29</b>	<b>3*</b>
<b>Protection</b>	<b>32</b>	<b>14*</b>
Universally vulnerable	54	51
Heterogeneously vulnerable	0	2
Resource	4	2
<b>Opposing devaluation</b>	<b>57</b>	<b>36*</b>
Feelings of solidarity	31	22
Contra selective lockdown	1	0
Vaccination age limit 2	0	3
Awareness of age	7	7
Not related	16	18

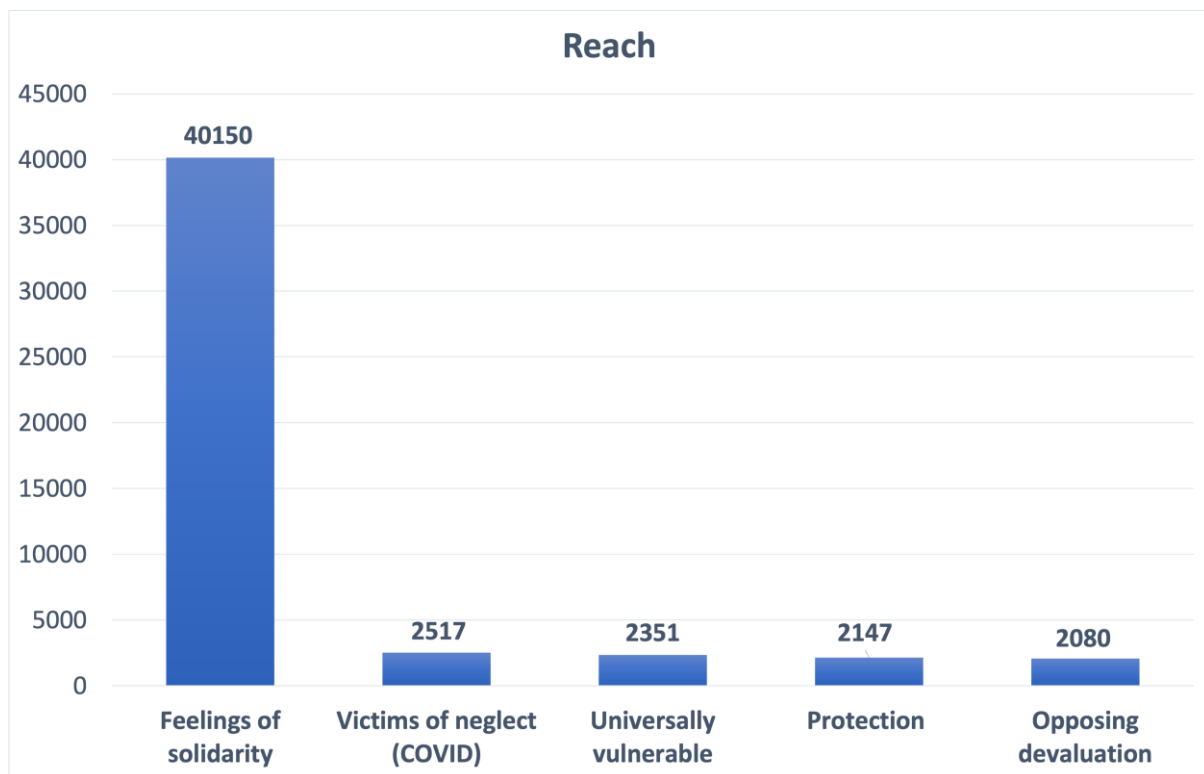
*Note.* COVID = coronavirus disease. The rows in bold represent all subthemes resulting from the inductive coding process. Asterisk (\*) indicates statistically significant differences in frequency between the two time periods (using individual two sample  $\chi^2$ -tests at  $p < .05$ ).

Figure 1



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Figure 2



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