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**Using the intergenerational solidarity framework to understand the grandparent–
grandchild relationship: A scoping review**

Marije Nouwen, PhD¹, & Mathilde Duflos, PhD²

1. Meaningful Interactions Lab (Mintlab, KU Leuven), Leuven, Belgium;
2. Laboratoire PAVeA, Université de Tours, France

Emails:

Marije Nouwen, Marije.nouwen@kuleuven.be
Mathilde Duflos, Mathilde.duflos@univ-tours.fr

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Abstract

The habits of families are affected during the COVID-19 pandemic, with limitations to socialization or visits. Grandparents and grandchildren use social media to sustain interpersonal relationships, as well as display intergenerational solidarity to others. This paper presents a qualitative content analysis of the display of different dimensions of intergenerational solidarity between grandparents and grandchildren during the COVID-19 pandemic in 2020, on TikTok. The analysis extends the understanding of intergenerational solidarity between grandparents and grandchildren on TikTok, by highlighting which characteristics or activities they find important to display to other users of the platform. The results suggest that grandparents and grandchildren value qualities of physical touch and family celebrations (i.e. affectual solidarity), and big life events (i.e. normative solidarity). Moreover, grandparents and grandchildren refrain from consensual solidarity on TikTok, but other categories of intergenerational solidarity provide clues to differences in the public display of their respective roles.

Keywords: TikTok; Grandparenting; Grandchildren; COVID-19; Intergenerational solidarity; Family display

Displaying intergenerational solidarity on TikTok during the COVID-19 pandemic:

Understanding the implications in the grandparent-grandchild relationship.

The habits of families are affected during the COVID-19 pandemic, with limitations to socialization or visits. Households are separated on a worldwide scale, due to barrier measures like keeping physical distance and self-isolation. Since the beginning of the pandemic, older persons have been identified as a group particularly exposed to health risks (Settersten et al., 2020) especially those with pre-existing health conditions (Ayalon, 2020). Sanitary measures were often associated with the imperative to protect them. Vervaecke and Meisner (2021) noted that the risks for older adults were often over-simplified, leading to an increase of paternalistic actions to protect older people from the virus. Younger generations were attributed an important role in keeping older generations safe. For families, COVID-19 health risks often resulted in different generations keeping physical distance which led to adaptations in the relationship pattern and in the enactment of intergenerational solidarity (Gilligan et al., 2020).

To avoid the transmission of the virus, grandchildren had limited face-to-face contact with their grandparents. Many families that lived in separate households turned to technology to maintain contact during the pandemic (Gilligan et al., 2020). Also, older adults between 65 and 74 years old were significantly more likely to use technologies and social media to maintain their connections while being physically separated from their friends and family (Cirilli & Nicolini, 2020). Most grandparents stated the importance of using technologies during the pandemic to reduce feelings of loneliness, even though they prefer physical meetings (Watson et al., 2021). The uptake and use of social media to maintain family connections emphasizes the role of such platforms for intergenerational solidarity between grandparents and grandchildren. Some platforms provide support for interpersonal communication, like sending text messages or video calling, while other platforms put on

display how grandparents and grandchildren experience the pandemic. In this paper, we consider the latter and focus on TikTok, a social media platform that features short videos, mostly for entertainment. During the pandemic, the number of TikTok users (Statista, 2020a) and scholarly attention has increased. Moreover, media reported on TikTok as a platform for grandparents and grandchildren to stay connected (Dodgson, 2020; Page, 2021). TikTok thus promises to display different ways in which intergenerational solidarity unfolds between grandparents and grandchildren. The Intergenerational Solidarity Framework, which is concerned with the social cohesion and belonging across generations (Bengtson & Oyama, 2007), and the concept of ‘family display’ (Finch, 2007) theoretically inform our study. This paper presents a qualitative content analysis of the display of different dimensions of intergenerational solidarity between grandparents and grandchildren during the COVID-19 pandemic in 2020, on TikTok.

The intergenerational solidarity framework

The widespread use of social media during the last decades has mediated family relationships (Cabalquinto, 2018; Carvalho et al., 2015), with the potential to enrich grandparent- grandchild relationships (Bangerter & Waldron, 2014). Mobile social media enhanced family solidarity among family members who live in separate households (Hänninen et al., 2021). Frequent mobile phone calls and text messages increased the feeling of closeness while members were physically separated (Christensen, 2009), also during the pandemic (McDarby et al., 2021). In sum, social media play an important role in maintaining feelings of belonging in families and displaying intergenerational solidarity.

The Intergenerational Solidarity Framework (ISF; Bengtson & Roberts, 1991) stipulates six dimensions of intergenerational solidarity (i.e., affectual solidarity, associational solidarity, consensual solidarity, functional solidarity, normative solidarity, structural solidarity) that are presented in Table 1. These six dimensions stem from interpersonal

relationship theories (Heider, 1958) and from studies in sociology on normative group commitment and group solidarity (Tönnies, 1957). The studies with the ISF have gradually moved their interest from functional dependence, from the oldest generation on younger generations, to a focus on intimacy as a cohesive force in families (Hammarström, 2005) sometimes emphasizing how emotional and social support between generations extends to the use of communication technology (Azevedo & Ponte, 2020).

Table 1. Six components of the Intergenerational Solidarity Framework (Bengtson and Roberts, 1991).

Component	Definition	Examples
<i>Affectual solidarity</i>	Feelings of closeness and reciprocity in emotions between members of a family	Saying “I love you”, hugging or making jokes
<i>Associational solidarity</i>	Different types and patterns of contact and interactions within a family	Visiting each other, dancing together or sharing a meal
<i>Consensual solidarity</i>	Concordance of opinions, values, and beliefs within a family	Sharing similar values and beliefs, common political and community commitments
<i>Functional solidarity</i>	Mutual help between generations, financial or non-financial, instrumental or emotional	Cooking, doing groceries, expressing empathy or listening to each other
<i>Normative solidarity</i>	Expectations toward filial and parental duties, and to the sense of obligation related to a person’s role within the family and compliance with family norms and values	Respecting filial piety and family values
<i>Structural solidarity</i>	Opportunities for intergenerational contact facilitated by geographical proximity	Living in the same house, travelling to visit each other or general health

The ISF proposes that different feelings and behaviors between two generations, including grandparents and grandchildren, define their relationship (Silverstein et al., 1998) among various cultures and at all ages (Duflos & Giraudeau, 2021). Moreover, Gilligan et al. (2020) argue for the relevance of using this model to investigate grandparenting during the pandemic as it provides a reading grid to understand the effect of the pandemic on

intergenerational cohesion. Although positive connotations are often implied with regards to intergenerational solidarity, ambiguity (Hammarström, 2005) or ambivalence (Lüscher & Hoff, 2013) also form part of intergenerational relationships. Related to technology use, Ivan and Nimrod (2021) reported on grandmothers that expressed concern about their grandchildren's exposure to potentially harmful online content as well as pressure to use new platforms. Also, grandparents express concerns about regular but shallow contact with their grandchildren via chat applications or feelings of exclusion (Azevedo & Ponte, 2020). The

The use of information and communication technology (ICT) and social network services (SNS) to interact between generations has previously been studied under the associational solidarity dimension only (Peng et al., 2018), or specifically with geographically separated extended families in the form of written chat messages on platforms like WhatsApp or Facebook (Taipale, 2019). Grandparents have been found to appreciate platforms like Skype when their grandchildren moved away (Taipale et al., 2018). Sharing affectual solidarity was only possible when grandparents and grandchildren used the same platforms (Taipale, 2019) and agreed on appropriate social conduct (e.g. refraining from embarrassing comments on SNS) (Taipale et al., 2018). Functional solidarity was reported to be more complex when grandparents and grandchildren were in geographically separate places, compared to physical meetings (Taipale, 2019). Structural solidarity between grandparents and grandchildren over digital devices was reported to become more complex due to physical deterioration (e.g. poor vision or finger control) (Taipale et al., 2018). Studies that investigated intergenerational solidarity between grandparents and grandchildren using ICT and SNS are scarce. However, there are indications that each dimension of intergenerational solidarity can be observed on SNS. For instance, expressing love (i.e. affectual solidarity) can occur during a visit as well as in an Instagram post. Considering that many family interactions moved online during the pandemic, there is a greater urgency to study intergenerational

solidarity on SNS. Although most studies on the grandparent-grandchild relationship under the ISF were quantitative studies (Duflos & Giraudeau, 2021), this paper presents a qualitative content analysis to understand how the different dimensions unfold on TikTok during the COVID-19 pandemic.

Displaying family on TikTok

The social media platform TikTok (“*Dou Yin*” in China) was launched internationally in 2017 and allows for creative video making (Bresnick, 2019). Like other social media, the content production on TikTok can be viewed as an iterative process between the physical world that people inhabit and the conversations that happen online (Alder, 2020). TikTok features videos are different from those shared on other video platforms, mainly in size and popularity (Chen et al., 2019). Whereas Instagram or Facebook users consume content of people or organizations that they follow, TikTok users land immediately on the ‘For You’-page where videos are presented based on the platform’s algorithms that estimate which videos are most likely to retain the user’s attention (Schellewald, 2021). The platform features of TikTok allow users to imitate and replicate existing content (Zulli & Zulli, 2020) like sounds, movements and challenges (e.g. dance, fitness or magic trick challenges) which users often personalize (Klug, 2020). Prior research on TikTok users has mainly focused on youth, who compose the largest user group of the platform (Statista, 2020b). TikTok influences younger users’ social and cultural lives. Pre-adolescents are more motivated to use TikTok to socialize than adolescents, as adolescents mainly pursue fame, self-expression and social recognition on TikTok (Bucknell Bossen & Kottasz, 2020). During the pandemic, when people were invited to stay home to comply with lockdown policies, teenage bedrooms (Kennedy, 2020) and other private spaces were often portrayed publicly.

The blurring boundaries between private and public display of private space is equally important for the grandparent-grandchild relationship on TikTok. In private conversations,

over Skype for instance, the possibility to see family members contributed to a meaningful relationship between grandchildren and grandparents during the pandemic (Watson et al., 2021). The need to ‘display family’ (Finch, 2007) to others increases when family practices change, like the impossibility to celebrate birthdays in each other’s presence. The desired audience can be both internal and external to the family. Visual display of grandparent-grandchild relationships has been studied on social media platforms, like Instagram and Facebook (Barnwell et al., 2021; Shannon, 2019), chat applications (Caballero, 2020) or Skype (Share et al., 2018). SNS expand the target audience of family relationships on display from family members to peers, and even strangers. The public aspect of TikTok possibly influences what grandparents and grandchildren share about their relationship, with the (unconscious) intention to conform with normative family representations (Barnwell et al., 2021; Shannon, 2019).

Our study builds on previous work concerned with grandparents and grandchildren on SNS. We empirically scrutinize the mainstream user group (i.e. youth) of TikTok while adding another generation to the empirical scope – in their respective roles as grandchildren and grandparents. Studying two generations on TikTok advances previous work in two ways. On the one hand, our work aims to empirically understand the growing but relatively unknown user group of older adults, in their role of grandparent, on the platform. Adults over 50 years old represented 11% of total users on TikTok, a number that has increased since March 2020 (Statista, 2020b). We ground our decision to investigate the grandparent-grandchild relationship, specifically, based on previous work that suggests that in interpersonal contacts between two generations, individual preferences and practices are negotiated towards the habits of the other (Fernández-Ardèvol et al., 2022). Also, younger generations have been found to empathize with retirement-aged SNS users through hypothetical grandparent-grandchild relationships (Harley & Fitzpatrick, 2009).

On the other hand, our study broadens the empirical attention on young people from peer interactions to family relationships. The research goals expand the concept of ‘displaying family’ (Finch, 2007) on TikTok where families simultaneously maintain feelings of belonging to each other, and a space where they can be recognized by others as family members (Merla & Papanikolaou, 2021). The ISF (Bengtson & Roberts, 1991) endorses the goal of our study as it equally highlights the efforts of grandparents and grandchildren to maintain their relationship.

Our research paper is guided by the following research question: How do grandparents and grandchildren display their relationship on TikTok during the COVID-19 pandemic? Considering the restrictions that this pandemic entails, we will focus equally on the use of materials and physical arrangements used by grandparents and grandchildren to enforce barrier measures when they are together.

Methods

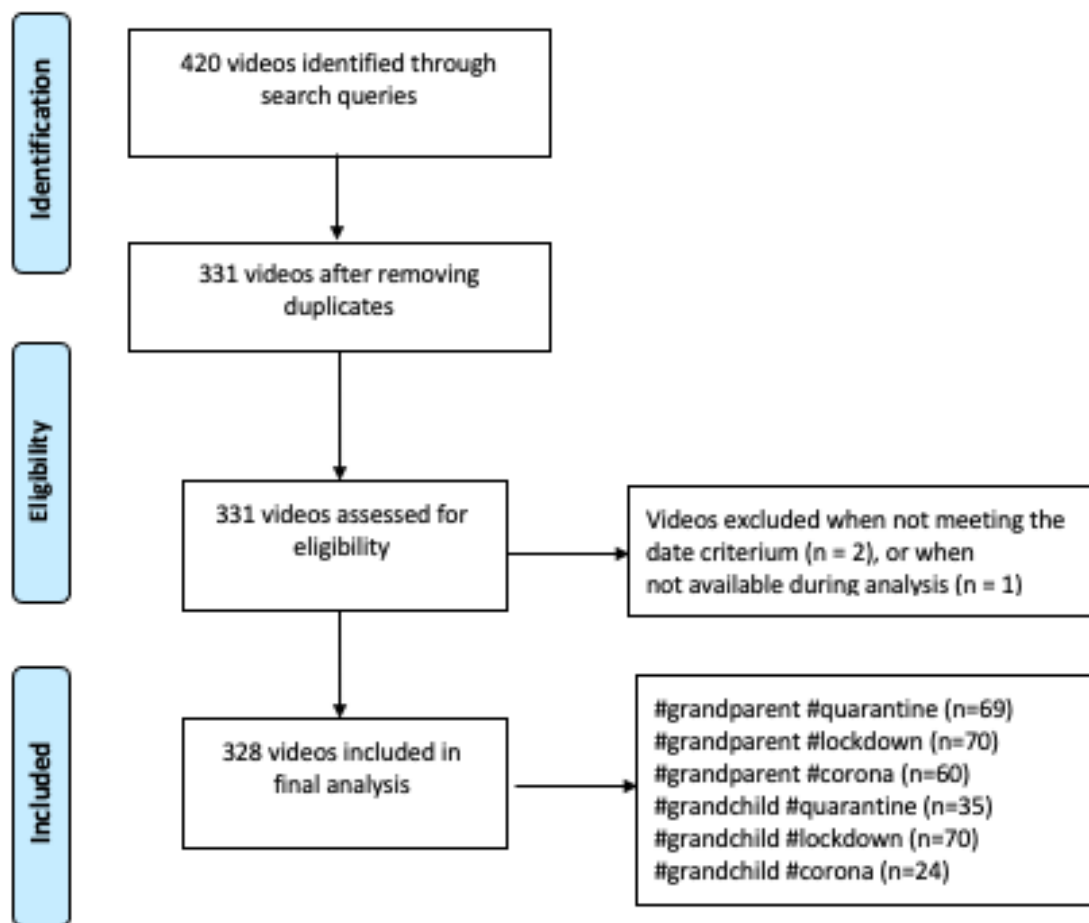
To understand how grandparents and grandchildren display intergenerational solidarity, we conducted a qualitative media analysis (Altheide & Schneider, 2013) of TikTok videos. Individual users were not informed about their selection for our study as this would entail a disproportionate distribution of information for publicly accessible video content. We took measures to protect the privacy of participants by excluding usernames and personal identifiable information in the data file. All videos were deleted from the researchers’ personal devices after analysis and stored on a network drive managed by the first author’s university. Prior to the study, the research protocol received approval from the social and societal ethics committee at the faculty of the first author.

Data collection

To search and download videos, we created a research account in January 2021 to avoid influencing TikTok’s algorithms based on previous search queries (Zulli & Zulli, 2020).

To compound the data corpus, we followed a common practice in online research by combining hashtags for data selection (Jackson & Foucault Welles, 2015). We identified and combined five relevant hashtags (#grandchild, #grandparent, followed by #quarantine, #lockdown, or #corona) to answer the research question. Selected videos were published when the pandemic hit globally, between March and December 2020. We only included videos in languages we mastered (i.e. Dutch, English, French, German, Spanish). The criterion for including videos in the data corpus was that at least one grandchild or grandparent should be visible or, that users referred to their role as grandparent or grandchild. For each search query, we estimated to select around one hour of video material (approximately up to 70 videos). The selection process is described in Figure 1.

Figure 1. Flow diagram of the selection process.



We first downloaded the videos from TikTok. Then, we added general information about the video in the data corpus (i.e. serial number, search query letter code, search date, upload date, amount of comments, amount of likes, amount of shares, hashtags, caption, duration in seconds, URL).

Data analysis

We transcribed all videos, with descriptions of the different components of the video (e.g. music, spoken words, written text, filter), and included analytic memos to textually interpret the moving images (Saldaña, 2013). The transcripts and memos amounted to approximately 71,000 words or 142 A4-pages. Then, we proceeded with three coding rounds of the six dimensions of the ISF, following an adaptive theory approach that builds on

principles of grounded theory while relying on prior theory to order the analysis (Layder, 1998). The first coding round unfolded over two stages. In the first stage, we coded the videos of one search query individually. Then, we checked for differences in interpretations in thorough discussions, which resulted in a refined set of concrete coding guidelines for the second stage. We then divided the coding dimensions for the remaining videos and iteratively engaged in discussions when doubts about interpretations arose. At the end of the first coding round, each video had a main code that related to one of the six dimensions of the ISF that structured the subsequent two coding rounds. In the second coding round, we looked for subthemes for each of the six dimensions inductively. Author two coded affectual, consensual, and structural solidarity, and author one coded associational, functional, and normative solidarity. Both authors regularly discussed the relations between and categorizations of the different sub themes. In the third coding round, both authors revisited the sub themes in the assigned dimensions to look for patterns in and between the different sub themes and dimensions. The final coding book can be found in Table 2.

Table 2. Coding scheme following the ISF.

Affectual	Associational	Consensual	Functional	Normative	Structural
Affectionate gestures	TikTok	Politics	Instrumental support	First grandchild	Health
Celebration and gift	Challenge	Sexuality	Food from GP to GC	Pregnancy announcement	Travelling
Fun and humor	Keeping entertained		Food from GC to GP	Favorite grandchild	Household
Art and cards	Door visit		Non-essential items	Protecting GP	
Grief	Garden visit				
Memories	Beauty salon				
Missing each other	Phone and video calls				
	Baking together				
	Accidental meeting				

In a final step, the list of codes was reviewed by means of upload date, number of comments, likes and shares, duration of the video, use of music, use of filters, identified cultural background and the person sharing the video. The goal of this final step was to explore the features of the platform, and its role in the performance of the grandparent-grandchild relationship on TikTok. Table 3 summarizes the description of the data corpus.

Table 3. Description of the videos related to TikTok features (left column) and summary of user characteristics (right column).

TikTok platform		Users	
Duration of videos	4 - 62 seconds	Grandchildren's age	1 foetus
M(SD)	24.23(15.08)		75 babies
			22 toddlers
Amount of shares	0 – 501,900		33 children
M(SD)	2,284.37(27,820.49)		115 adolescents
Amount of likes	0 – 6,800,000		81 adults
M(SD)	90,203.60(482,496.70)		2 unknown
Amount of comments	0 - 89,300		
M(SD)	729.27(5257.13)		
Music	Surrender by Natalie Taylor (<i>n</i> = 27)	Person sharing	Grandchildren (57.01%)
	Death bed (coffee for your head) by Powfu (<i>n</i> = 9)		Grandparents (21.64%)
	Laxed (siren beat) by Jawsh 685 (<i>n</i> = 8)		Parents (17.37%)
	You are the reason by Calum Scott (<i>n</i> = 6)		Other parties (3.98%)
	Dusk Till Dawn by Zayn & Sia (<i>n</i> =5)		
	The Cuppycake Song by Buddy Castle (<i>n</i> =5)	Cultural background	Asian (<i>n</i> = 30)
	This City by Sam Fischer (<i>n</i> =5)		Hispanic (<i>n</i> = 30)
			Black people (<i>n</i> = 14)
			Multiple cultural backgrounds (<i>n</i> = 11)
			White people (<i>n</i> = 243)

Results

Our results highlight the different ways in which grandparents and grandchildren displayed intergenerational solidarity on TikTok during the COVID-19 pandemic. The data corpus yielded most entries for affectual solidarity, illuminating how grandparents and grandchildren express their affection for each other. Associational solidarity was the second most prominent dimension, suggesting that grandparents and grandchildren found several ways to share common activities during the pandemic. The third largest category was functional solidarity, with videos showing how grandparents and grandchildren helped each other in a difficult time. The following sections present an overview of all six dimensions of the Intergenerational Solidarity Framework (ISF).

Affectual Solidarity

Affectual solidarity was the most present dimension ($n = 128$). 30 videos coded under the subtheme “affectionate gestures”, mostly shared by parents ($n = 15$), showed grandparents and grandchildren cuddling, hugging, and kissing each other. Affectionate gestures were specifically adapted to respect barrier measures in six videos of grandparents or grandchildren dressed up in body suits (Figure 2) and in seven videos where they used a plastic wall to protect each other (Figure 3). Subscripts accompanying these videos highlighted the longevity of the time they were not able to hug (e.g. ‘finally’ or ‘haven’t hugged my grandparents in five months <3’), suggesting that hugging is an important gesture for their relationship.

Figure 2. Grandparents and grandchildren hug, while grandchildren are dressed in full body suits and wearing face masks.



Figure 3. Grandfather and granddaughter hug through a plastic wall.



30 videos were about “celebration and gifts”, as families celebrated birthdays ($n = 18$), Christmas ($n = 4$), Easter ($n = 2$), grandmother’s day ($n = 2$), or wedding or wedding anniversaries ($n = 2$). In most of the videos ($n = 23$), they made adaptations to respect physical distance, by remaining outside or celebrating over video calls.

16 videos showed “fun and humor” in the grandparent-grandchild relationship, like when a granddaughter told her grandparents that they would be “viral” on TikTok, and they answered that they refused to be “corona viral”. Moreover, other videos displayed pranks, excerpts from video calls where families displayed their struggles with technology or did antics to make a baby laugh. This subtheme also includes the video that received the most comments ($n = 89,300$), likes ($n = 6,800,000$) and shares ($n = 501,900$) in the corpus. This video featured a grandmother who yelled at her husband because he supposedly harassed his granddaughter. However, the granddaughter indicated in the written text on the video that she instigated it all.

The subtheme “art and cards” ($n = 6$) presents grandparents or grandchildren creating art pieces for each other or writing cards to their grandparents in order to continue to express their feelings for each other when they were unable to be together.

Another aspect of affectual solidarity was expressed through “grief” as an adult granddaughter filmed herself crying after her grandparents died of COVID-19. The subtheme “memories” ($n = 30$) puts forward the importance of family pictures. For instance, when grandchildren re-enacting pictures from their childhood with their grandparents ($n = 4$) and compilations of pictures or videos ($n = 25$) with subtitles that expresses affection or missing out (e.g., “I can’t take the pain of not seeing my grandson”). In the subtheme “missing each other” ($n = 5$), we see what grandparents and grandchildren do when they miss each other, like a toddler trying to open the door to go to the grandparents’ house or a grandfather using a mirror to reflect the sun and send signals to his grandson. In other videos, grandchildren

filmed themselves having strong emotions while talking to the camera or using text to accompany their emotions; e.g.:

I just realized that every single day that passes, it's one day closer to me losing my grandparents. I feel that their time might be coming. I'm not ready to lose them but eventually that day will come, and I'm going to have to say goodbye to the people who helped shape me into the person I am today...

Associational Solidarity

Associational solidarity was the second most present dimension ($n = 91$), with eight subthemes that explain the type and frequency of contact between grandparents and grandchildren during the COVID-19 pandemic. The first subtheme was “TikTok challenges” ($n = 34$) and displayed grandparents and grandchildren participating in these challenges. Most of these videos were uploaded by grandchildren (25 of 34). The challenge with the highest number of likes in our data set included the song Laxed (siren beat) by Jawsh 685 ($n = 7$), an instrumental song that is featured in 1.6 million TikTok videos. The choreography is slow and mainly involves upper body movements, which made the challenge accessible to grandparents seated in a wheeled walker, or in a wheelchair (see Figure 4). Six of the seven videos were danced outside and were posted between the end of April 2020 and the beginning of July 2020.

Figure 4. Grandparents and grandchildren stand in separate rows to perform the Laxed Siren Beat dance challenge which only include arm movements so grandparents can sit.



Only two videos coded under ‘TikTok challenge’ included a challenge without dancing

(i.e. culinary challenge, game challenge). In the subscript of challenge videos, grandchildren expressed their love for their grandparents or motivated TikTok users to like their videos. The grandchildren also addressed other TikTok users with affectual messages, to display warm feelings towards their grandparents.

The second subtheme under associational solidarity was “keeping entertained” (n = 33)

and included videos that showed how grandparents and grandchildren spent time together during quarantine. 15 videos were shared by grandchildren, six by parents, ten by grandparents and two by unknown persons. The most common activity involved dancing. Ten videos displayed children playing, dancing or singing. Four videos did not include grandchildren but featured grandparents dancing together. These videos were usually

uploaded by a grandchild but often recorded by the grandparents themselves. The captions refer to how grandparents kept entertained during quarantine for instance “dancing through quarantine” or “what happens when grandparents get quarantined!” Videos that stand out showed how grandparents took on rather extreme measures to entertain their grandchildren, like shooting a nerf gun at their grandchild.

Door visits ($n = 9$) and garden visits ($n = 7$) are two other sub-themes of associational solidarity that show how grandparents and grandchildren visit each other without entering the house, for instance by standing at the front door, with a window in between, or in a garden. The content of the videos often refers to grandchildren missing their grandparents. During garden visits, food and beverages were often shared, for instance with grandparents sitting inside and grandchildren sitting outside. Two videos, uploaded by the parents, showed toddlers and focused on greeting each other.

The remaining subthemes include “beauty salon” ($n = 4$) with videos of doing each other’s hair and make-up, “phone and video calls” ($n = 3$) with videos that highlight the act of calling over phone or video, “baking together” with two videos where grandchildren and grandparents bake a cake or bread together, and a final video coded under “accidental meeting” where a granddaughter and grandparents bump into each other at the supermarket.

Consensual Solidarity

Consensual solidarity was the least present dimension ($n = 3$). These videos were shared by adolescent or adult grandchildren. Two videos were about differences in political views. One video showed how a granddaughter cut her grandfather’s Trump Card in pieces before handing it back to him. This video received the second most comments in our data corpus. Another video showed a granddaughter inciting a grandmother to dance with her on a song with lyrics that promoted the use of marijuana. When the grandmother heard the lyrics,

she stopped dancing and walked away. In the last video, a grandson filmed himself while coming out to his grandmother by phone and she expressed him her unconditional love:

It makes absolutely no difference to me. You are my grandson, in spite of everything.

I love you as you are and no matter what... I will never change the way I feel about you. I'm okay with it. Just be yourself! Just don't worry about anything.

Functional Solidarity

Functional solidarity was identified in 49 videos. Most of these videos included grandchildren or grandparents who provided instrumental support to each other ($n = 25$). In 14 videos, grandparents ($n = 1$) and grandchildren ($n = 13$) did chores for each other. Chores included doing groceries (mainly grandchildren shopping for grandparents), grandchildren painting a shed in their grandparents' garden ($n = 2$) or gardening, a grandfather installing a bookshelf, a granddaughter cleaning up or a grandchild shaving a goat. Another type of instrumental support was technical support ($n = 4$) provided by grandchildren to their grandparents. These videos included checking the Wi-Fi connection, dropping off a tablet streaming the Sunday mass live, or helping out grandparents during video calls ($n = 2$). Other videos displayed emotional support ($n = 4$) to cheer up grandparents or grandchildren (e.g., grandparents cheering a baby who started crawling, grandchildren helping their grandparents to engage in an activity in order to prevent boredom such as setting up a Netflix or TikTok account or lending a pet for a sleepover). The last example of instrumental support is displayed through one video of a grandson offering physical support to his grandparents over distance by showing them different physical exercises during a video call from his bedroom.

Another subtheme under functional solidarity is related to food. When grandchildren brought food, that was usually homemade, to their grandparents ($n = 9$), videos were about adolescent or emerging adult grandchildren. In the videos about grandparents who prepared and brought food to their grandchildren ($n = 7$), three were about adolescent grandchildren

who, in turn, expressed love towards their grandparents. The food was handed over in the car or at the doorstep. Three videos, uploaded by grandparents, showed them feeding a baby grandchild. Another video, uploaded by a parent, includes a grandmother who brings homemade cookies to her toddler grandchild.

The last subtheme of functional solidarity includes gifting or bringing by non-essential items ($n = 9$; all uploaded by grandchildren). In eight videos, grandchildren offered different items to their grandparents (e.g., hand sanitizer, sweets, cards, clothes). The reactions of grandparents ranged from being ecstatic and grateful to bursting into tears and being disappointed that the grandchild could not come inside. Most of the subtitles for the videos coded under functional solidarity emphasized that this type of intergenerational solidarity required little effort from the giver, while having a big impact on the well-being of the receiver.

Normative Solidarity

Normative solidarity was identified in 38 videos, all of which put forward different expectations about how grandparents and grandchildren should behave towards each other. Most videos were themed around meeting baby grandchildren for the first time ($n = 21$), hinting towards the importance that new grandparents and parents give to the addition of a new generation to the family. 11 of these videos were uploaded by parents and six were uploaded by grandparents. In one of these videos, a grandmother emphasized that she was tested negative to COVID-19 before holding her grandchild. Similarly, other videos that showed grandparents meeting their grandchildren inside ($n = 6$) emphasized that grandparents had to wait for a long time and grandparents portrayed strong emotional reactions, like crying when holding the baby. Other videos showed how grandparents met their grandchild through windows ($n = 5$), in outdoor spaces ($n = 6$), or at the airport. Two videos stressed that the baby

was named after the grandfather or great grandfather. One video showed that the grandmother prepared clothing for her newborn grandchild. Not all videos emphasized that grandparents waited or altered this moment due to COVID-measures, although many captions stated that grandparents were only able to visit a newborn after some months (e.g., “After being quarantined for months, Nana & Papa get to meet their granddaughter for the first time.” To some grandparents, that situation was heartbreaking and it seemed that holding grandchildren was more important than the possibility to see them (e.g., “Please stay home during quarantine. I missed the birth of my only grandchild. I’ve never held her & have to stay 6’ ft back to see her”). Like the subtheme “affectionate gestures” under affectual solidarity, the longevity and importance of physical touch becomes explicit

In addition to meeting baby grandchildren for the first time, five videos included pregnancy announcements to the soon-to-be (great-)grandparents ($n = 5$). Pregnancy announcements happened during a video call, at the front door, in the living room or by posting a series of pictures (e.g., the echo, the parents). The announcement was usually accompanied by a material token, like a mug that said “Just when grandparents think their work is finished someone calls them great” or a positive pregnancy test.

Normative solidarity was also reflected by grandchildren stating that they were the “favorite grandchild” ($n = 6$) when they received or expected special treatments. In three videos, grandchildren played with the audio to emphasize that they were their grandparents’ favorite grandchild. Other videos showed how grandparents’ expectations did not match the grandchildren’s needs, for instance when grandparents did not appreciate the special gestures of their grandchildren or when a grandchild received less attention than other grandchildren. All videos hinted towards how being a grandchild or grandparent is often performed in relation to other grandchildren, rather than a simple one-on-one relationship.

The last subtheme under normative solidarity includes videos where grandchildren paid special attention to protect their grandparents from getting infected by the COVID-19 virus ($n = 4$). All videos featured and were uploaded by adolescents. These videos showed a granddaughter running after her grandfather to check if he was carrying his face mask and hand sanitizer before driving off, grandparents trying out thermometers, a celebrity convincing TikTokers to respect the measures in order to protect all grandparents, and a grandchild who wear a gas mask when visiting her grandmother inside. These examples show additional barrier measures that could be observed in other videos like wearing body suits (see affectual solidarity) or keeping physical distance.

Structural Solidarity

Structural solidarity was highlighted in 20 videos. These videos were mostly shared by grandchildren (75%), followed by parents (15%), and only one of them was shared by a grandparent. Another video was shared by the partner of a grandchild who filmed the grandparent-grandchild interaction. Structural solidarity was expressed through focusing on the health of a grandparent and how families adapted their interactions ($n = 10$), on traveling to visit each other ($n = 7$), like this granddaughter who commented her video: “So I haven’t seen my grandparents in months due to the coronavirus. So now that Boris relaxed the rules, we traveled an hour and a half to see them... They had no idea! They were so excited!”

Other videos of this dimension focused on the living arrangement, either when grandchildren had to move from a shared household to protect their grandparents ($n = 1$) or when grandchildren spent the lockdown with their grandparents to take care of them ($n = 2$) by, for instance, keeping them company: “My grandma told me mom I’m her ‘ray of sunshine’ during this dark time. My heart is broken, make them viral”. This comment combines the grandchild’s emotional involvement during lockdown with a call for other TikTok users to comment, like, or share the video.

COVID-19 protective measures

Among the 328 videos of the present corpus, 72 could not be associated with adaptations related to COVID-19 due to their specificity (e.g., slideshow of memories prior to the pandemic, phone call), 127 videos showed grandparent-grandchild interactions without any kind of protective measures and the last 129 videos showed grandparent and/or grandchildren who used one or more protections to limit the transmission of the virus. Barrier measures used in these videos were physical distance ($n = 78$), wearing a mask ($n = 35$), interacting through a window ($n = 27$), wearing gloves ($n = 7$), and wearing full-body suits ($n = 6$). Interestingly, on videos shared by grandchildren, 46 were not eligible to report the use of barrier measures but on the other 141 videos, 65.96% showed the use of barrier measures in the interaction with grandparents and 34.04% did not show any kind of barrier measures. On the opposite, on the 70 videos shared by grandparents, if 19 were not eligible to report the use of barrier measures, on the other 51 videos, 84.31% did not show any use of protection during interactions with grandchildren and only 15.68% showed the use of barrier measures (wearing a mask = 4; physical distance = 3; interacting through a window = 2).

Discussion

This qualitative content analysis aimed to study the display of the different dimensions of intergenerational solidarity among grandparents and grandchildren on TikTok during the COVID-19 pandemic. Although most of the videos (over 60%) were posted by grandchildren, our analysis also yields insights into grandparents' use of TikTok (about 20% of the videos). The analysis identified videos for each dimension of the ISF, with some dimensions more populated by grandparent-shared content than others. In this discussion, we frame our findings in previous work on ISF as well as the implications for family display in the context of the pandemic. During this period, families were challenged to renegotiate their relationship and responsibilities towards each other, and family norms and values became scrutinized

(Ellerich-Groppe et al., 2021). Moreover, family relationships tend to become more open-ended in light of such events, which intensifies the need to display relationships that matter (Finch, 2007), like the grandparent-grandchild relationship.

Spending longer periods without touching each other is a common concern and frustration expressed in our data corpus, in line with the difficulties expressed by transnational families in previous studies (Cabalquinto, 2018). Notwithstanding, some videos featured creative and COVID-compliant ways to maintain physical contact when the urgency to hug became increasingly unbearable after weeks and months in lockdown. These videos displayed hugging (i.e. affectual solidarity) as actions that confirm their sense of belonging as grandparents and grandchildren. Moreover, the urgency to hold newborns was also made explicit in videos displaying normative solidarity. In some videos, grandparents did not wait to hold their newborn grandchild even when infants were susceptible to be infected (Mehta et al., 2020), especially in familial clusters (Posfay-Barbe et al., 2020). In other videos, grandparents displayed their struggles with withdrawing from holding their newborn grandchild. Motivations to not postpone physical touch during the first meeting with a grandchild or to display it on TikTok might be the special circumstances in which the grandchild was born. When grandparents cannot engage themselves in activities they consider of value, it becomes especially meaningful to display ‘grandparenting’ during key life moments (Ducu, 2020).

Our findings revealed that families were having a good time together despite the lockdown, which is at the heart of grandparenting (Neugarten & Weinstein, 1964). This came forward in our data corpus in the dimensions of affectual and associational solidarity. Our results suggest that families celebrated special occasions in offline and online settings. Indeed, families were found to organize online celebrations during the pandemic, that would not have been organized online in pre-pandemic times (Watson et al., 2021). Celebrating special

occasions, then, is important to display family to other family members. Organizing celebrations to include as many people as possible confirms that the people present are part of the family (Finch, 2007), which becomes especially important when sanitary circumstances disrupt their festive habits. Also, the results of this study showed families' willingness to do dance challenges together. Associational solidarity was expanded by trends on TikTok, just like other social media have been found to enrich interactions between remote family members (Taipale et al., 2018). From our data it is not possible to compare the prevalence of dance challenges performed by grandparents and grandchildren with pre-COVID times. However, the finding suggests that young TikTok users can appreciate intergenerational content and that this content is meaningful to all users of the platform (Harley & Fitzpatrick, 2009).

Consensual solidarity was scarcely present in our analysis and suggests that TikTok is not a place to share different views or opinions explicitly in relation to the grandparent-grandchild relationship. Across the different dimensions, however, there were some indications about different conceptions of the health risks of grandparents mostly in line with the general discourse to protect elderly people from the virus (Meisner, 2021). In the associational solidarity dimension, this was most obvious when grandchildren refused to enter their grandparents' house, even when invited to come inside. Moreover, a small number of videos explicitly featured the efforts of grandchildren to protect their grandparents by different means under normative solidarity. Cooking and delivering meals to each other also seemed important and appeared as a privileged way to support each other during the pandemic. Both grandparents and grandchildren took part in this type of functional solidarity, while in the literature, grandparents, and especially grandmothers, are more likely to feed their grandchildren than the opposite (Maijala et al., 2013).

The results of our study pointed out that grandchildren were more likely than grandparents to share videos in which they took actions in protecting their grandparents, maybe because they need approval from their peers on SNS (Cipolletta et al., 2020) or because they want to use social media to display good ‘grand-childrening’ (Barnwell et al., 2021, p. 15) in accordance with common expectations (Gorea, 2021). Indeed, during the pandemic positive feelings towards grandparents (i.e. affectual solidarity) increased when college-aged grandchildren had more frequent contact with their grandparents (i.e. associational solidarity), even when an increase in contact was partly motivated by the perceived responsibility of grandchildren to do so (McDarby et al., 2021). Grandchildren displayed their grandparents both as ‘badass’ (for instance when displaying them as fun-loving dancers (i.e. associational solidarity)) and in need of care, in line with findings from a study on Instagram (Barnwell et al., 2021). Grandparents, on the other hand, seemed less sensitive to feelings of increased responsibility towards their grandchildren during the pandemic. Moreover, grandparents might use TikTok as a platform to be the voice of their generation (Brewer & Piper, 2016) about their role as grandparents during the pandemic, as a counter-discourse of ageist reports. Grandparents and grandchildren, thus, connect a different set of personal experiences to a more generalized understanding of family relationships (Finch, 2007) which leads to contrasting displays of grandparent-grandchild relationships on TikTok during the COVID-19 pandemic.

Limitations and Future Directions

The current study is the first one to qualitatively study grandparent-grandchild intergenerational solidarity on TikTok. Our results expand previous work on young TikTok users across generations and highlight both differences and commonalities between grandparents and grandchildren on TikTok. Comparative studies not only combat ageist stereotypes regarding digital practices of older people, but they also provide novel insights on

young people beyond peer-to-peer interactions. Similar efforts on social media platforms are meaningful to study both in the scope of ISF and family display beyond the COVID-19 pandemic. Notwithstanding our intention to include both grandparents and grandchildren in our study, the display of intergenerational solidarity between grandparents and grandchildren on TikTok is dominated by the grand- children. Even though they are likely to post idealized content (Barnwell et al., 2021) our results emphasize experiences and intentions of the grandchildren. Also, the current analysis is restrained by the language barrier, which may restrict the cultural diversity of the videos included in the data corpus.

Each video is a brief overview of what TikTok users want to show to their community. It does not allow us to understand the context of the video, the intentions of the video creators or the shared meaning-making processes between the family members who interact with each other on TikTok. Further studies could use interviews to focus on grandparents and grandchildren, and inquire into motivations, doubts and experiences related to how they display family relationships on TikTok. Of special interest are studies that focus both on those who make and post videos, and those who are featured in videos to understand both intentions and effects. Additional analysis of the user comments on TikTok would foster possibilities to understand the impact of the representation of grandparents and grandchildren (or older people and youth in general) on this platform.

Conclusion

This paper offers an account of the display of intergenerational solidarity between grandparents and grandchildren on TikTok during the COVID-19 pandemic. The results suggest that grandparents and grandchildren value qualities of physical touch and family celebrations (i.e. affectual solidarity), and big life events (i.e. normative solidarity) in their relationship, as they put these on display to other users on TikTok. We also found that grandparents and grandchildren participate in platform-initiated activities, like dance

challenges. Although grandparents and grandchildren refrain from consensual solidarity on TikTok, the results in other ISF categories provide clues to differences in the public display of their respective roles. Grandchildren were found to emphasize their role in protecting their grandparents when remaining outdoors (i.e. associational solidarity), taking extra sanitary measures (i.e. normative solidarity), or preparing meals and care packages for their grandparents (i.e. functional solidarity). Such differences emphasize the different experiences and display needs of grandparents and grand- children during the COVID-19 pandemic on TikTok.

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