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2023

<https://doi.org/10.25969/mediarep/22338>

Veröffentlichungsversion / published version

Zeitschriftenartikel / journal article

Empfohlene Zitierung / Suggested Citation:

Siever, Christina Margrit: Emojis in the Context of Digital Mourning:. In: *IMAGE. Zeitschrift für interdisziplinäre Bildwissenschaft*, Jg. 19 (2023), Nr. 2, S. 215–237. DOI: <https://doi.org/10.25969/mediarep/22338>.

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Christina Margrit Siever

Emojis in the Context of Digital Mourning:

A Twitter-based Analysis of Communication about ›Angel Babies‹

Abstract

Emojis have become an indispensable part of digital communication. There are undoubtedly cultural differences and individual preferences in their use, but the utilization of emojis naturally also depends on the communication situation and the topic. The present article is about emojis that are applied in the context of digital mourning on Twitter for so-called ›angel babies‹ (German: »Sternenkinder«), i.e., children who die (shortly) before, during, or after birth, and sometimes also later. The article analyzes the extent to which emojis are used in mourning processes in addition to verbally expressed grief for a deceased child and what function they have in this context. In particular, it will be analyzed what multimodal communication with emojis looks like, i.e., whether emojis are part of the message or rather have an illustrative character. In addition, the question is explored whether there are specific emojis for digital mourning communication and to what extent symbols that can be interpreted in religious terms can also be found (for example angels, praying hands, or candles). The facial signs used will also be examined; for example, the extent to which crying and sad emoticons are used to express grief and empathy. Furthermore, it will be discussed whether the heart as a symbol of love is also as present in grief communication on Twitter – as observed elsewhere in digital communication. The data basis for the analysis is a corpus of around 8,351 German-language tweets containing the sequence of characters »sternenkind« (angel baby).

1. Introduction

While emojis have found their way into various aspects of our lives and their communicative functions have been relatively extensively studied already, their role in the realm of mourning remains a captivating and underexplored subject. The focus of the present article is the use of emojis in the context of digital mourning for so-called ›angel babies‹ (German: »Sternenkinder«) who die (shortly) before, during, or after birth. Specifically, it aims to investigate the usage of emojis in the context of angel babies and the extent to which feelings of grief are expressed through emojis. The following tweet brings us immediately to the heart of the matter:


CN Stillbirth




Urgent intervention at a nearby hospital.

Twins, 1   and 1 

It is not easy to find the right words for something like this.

#angelbaby^[1]

The content note at the beginning and the hashtag at the end help readers grasp the theme of the tweet. What is interesting about the message is that the central message, namely that one of the twins has died and one has survived, is expressed through emojis. However, some prior understanding of the subject matter is required for this. The tweet can only be comprehended if one knows that children who die shortly before, during, or after birth are called »Sternenkinder« (angel babies) or affectionately referred to as »Sternchen« (literally: little stars) in German. Furthermore, one must know that a baby born after a deceased child is called a »Regenbogenbaby« (rainbow baby). The two hearts can be interpreted based on their color symbolism. Black is associated with death and mourning in the German cultural sphere (and many other cultures), while green is associated with life and hope. After the message is conveyed through emojis, the user writes that it is not easy to find words for such things. Apparently, for the author, it was easier in this case to convey the information through emojis. So, he expresses grief about this incident with the  emoji (Black Heart).^[2] Marcel Danesi (2019: 243) also states: »Emoji allow users to add emotional tones, from happiness and laughter to irony and critique, to written messages. In effect, they have emotive force, in the sense that they allow users to convey state of mind (opinion, judgment, attitude, outlook, sentiments, etc.)«.

1 »CN Totgeburt | Eiliger Einsatz im Krankenhaus bei mir in der Nähe. | Zwillinge, 1   und 1  | Es ist nicht leicht für so etwas die richtigen Worte zu finden. | #sternenkind«.

2 While reviewing academic literature on the topic under investigation, I encountered the problem that it often remains unclear which specific emojis were referred to, either because they were not explicitly mentioned or because images of emojis could not be accurately recognized. For this reason, in this study, the Unicode character of each emoji is cited together with its corresponding Unicode name in parentheses at its first mention. This ensures that each emoji can be uniquely identified.

The present article is concerned, among other things, with how mourning for angel babies is expressed. This study was conducted as part of the research project »Mourning Practices on the Internet«, which is part of the URPP Digital Religion(s) at the University of Zurich.^[3] Regarding the structure of the article, the corpus is first introduced, which serves as the basis for the subsequent analyses. Then, the suitability of Twitter as a communication platform for mourning in the context of angel babies is discussed. Subsequently, the German neologism »Sternenkinder« is elucidated, which is central to the following study. Next, the question of which emojis appear in the corpus and with what frequency is examined, categorizing the emojis into different categories. These results are then compared with the findings of other studies on emoji usage in general and, specifically, in digital mourning communication. Finally, two analysis sections follow, in which the functions of emojis that are typical for communication about angel babies are examined. They also take a closer look at emojis featuring death-symbolism and religious topics. The article then concludes with a summary and an outlook on future research.

2. The corpus used

The present corpus consists of tweets that contain the string »sternenkind«, whereby the difference between upper and lower cases was not taken into account. The data also includes tweets that contain the hashtag #sternenkind or hyperlinks that contain the string »sternenkind«. All tweets that were marked as German by Twitter were saved via the API, regardless of whether they were tweets or replies initially; retweets, on the other hand, were not crawled. The corpus includes tweets from Twitter's launch as a public platform in 2006 up to 2021; the crawling period thus ranges from 22.03.2006 to 19.12.2021 (10:33 pm). In this way, 32,741 tweets were collected. This corpus was cleaned by first searching for (near-)duplicates by machine and then removing these duplicates after selective checks. Tweets referencing Twitter users whose handles contained the string »sternenkind« were also deleted. In the end, all of this work resulted in a sub-corpus of 10,042 tweets that were then manually screened. All tweets that had nothing to do with the topic of interest were then sorted out. The expression »sternenkind« also exists, for example, in art, computer games, or music. The cleaned sub-corpus, which is the data basis for this article, comprises a total of 8,351 tweets.

3 Cf. https://www.digitalreligions.uzh.ch/en/research/internaldynamics/p1_mourning_practices_on_the_internet.html [accessed July 18, 2023].

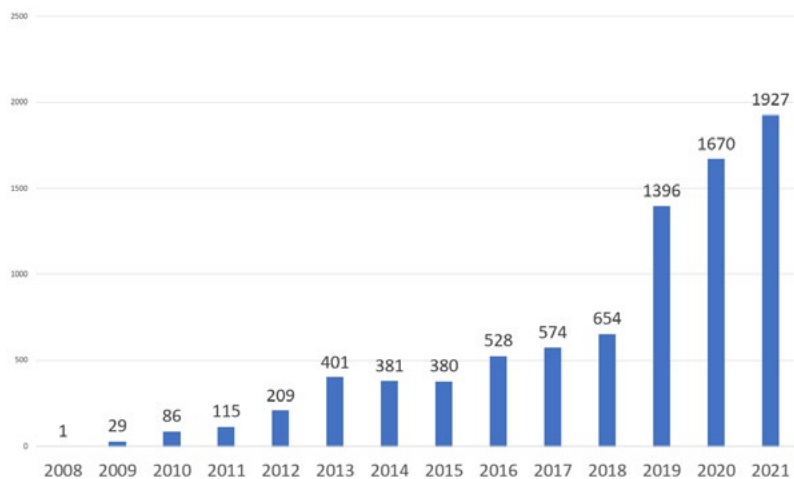


Figure 1: Tweets in the corpus grouped by year.

Twitter was founded in 2006 and the oldest tweet in the corpus dates from 2008. Figure 1 shows the years in which the tweets in the corpus were posted. From 2008 to 2018, the number of tweets increases moderately, but from 2019 onwards there are even significantly more tweets. The absolute numbers in figure 1 must of course be considered against the background of general Twitter use in the German-speaking world. However, if we look at the results of the ARD/ZDF online study^[4], we can see that the use of Twitter in Germany did not increase in the years 2016 to 2021. Accordingly, it can be assumed that the use of the term »Sternenkind« on Twitter has increased substantially in recent years.

3. Twitter as a communication platform for the mourning of angel babies

In contrast to online memorial sites, which are specifically designed to commemorate the deceased, or forums where parents of star children can exchange experiences, Twitter as a communication platform is open in its thematic diversity. Nevertheless, grief over the deceased is also expressed in many social media communities where »contact can be established with people in similar circumstances« (TIENKEN 2015: 132, translation C.M.S.^[5]). This happens in particular through

4 <https://www.ard-zdf-onlinestudie.de/> [accessed July 18, 2023].

5 Original: »Kontakt zu Menschen in ähnlichen Lebensumständen hergestellt werden [kann]«.

hashtags and so-called social tagging (cf. SIEVER 2015: 141-214). So, while some people specifically search for these topics using hashtags, other users may want to be alerted to potentially incriminating content because it could trigger them. Therefore, trigger warnings are often given by marking the tweet with »CN« (for »content note«).

When people write about their angel babies on Twitter, the narratives are often »small stories [...]: social media environments afford opportunities for sharing life in miniaturized form at the same time as constraining the ability of users to plunge into full autobiographical mode« (GEORGAKOPOULOU 2015: 266). Until 2017, tweets were known to be limited to 140 characters; currently, the limit is 280 characters. Some users deliberately want to be brief and, if necessary, exchange information with other users via direct messages. Others use threads for longer posts or the possibility to refer to other pages with more content via links. Other social media platforms such as Facebook, Instagram, as well as blogs and websites, are often linked.

How does digital mourning in social media communities differ from traditional mourning or even mourning in general on the internet? Korina Giaxoglou (2021: 33) states in her book on social media mourning: »The language used in digital mourning features digital writing features, such as emoji and hashtags, and also draws on platform-specific vernaculars, for example images in photo-sharing websites.« The focus of the present article revolves around the digital writing feature of emojis. Communication takes place accordingly »with various semiotic (multi-modal) resources« (GEORGAKOPOULOU 2015: 266), which is why the multimodality of communication is also discussed in the present analysis.

4. The German-language neologism »Sternenkinder« for deceased children

If a child dies shortly before, during, or after birth, people in the German-speaking area have been talking about so-called »Sternenkinder« (literally: »star children«) for about 30 years; the English equivalent is »angel« or »angel baby«. Whereas in the past the terms »miscarriage« or »stillbirth« were used to refer to the incident as such, the term »sternenkind« is now increasingly intended to highlight the deceased child as such. As per Julia Böcker's (2022: 32) sociological analysis, the metaphor inherent in the term »Sternenkinder« signifies the belief that children who pass away at a young age are believed to ascend directly to heaven or originate from there. Consequently, in the German language, the terms »Himmelskinder« (literally: »heavenly children«) or »Engelskinder« (literally: »angel children«) are occasionally employed as well. Within the context of this article, the designation »angel babies« is used correspondingly to denote

individuals referred to as »Sternenkinder« in the German language. In German, there is also the term »Schmetterlingskind« (»butterfly child«), often used for very early miscarriages where no actual body is yet present, which semantically also has a connection to heaven (cf. BÖCKER 2022: 32). Within a thread found in the analyzed corpus, it is elucidated that the term »Schmetterlingskind« is also employed to refer to children diagnosed with epidermolysis bullosa, a genetic skin disorder characterized by extremely fragile skin comparable to the delicate nature of butterfly wings. Hence, the usage of this expression is deemed unfavorable due to its inherent ambiguity.

Furthermore, a parallel evolution of novel linguistic expressions can be observed in English as well: »Earth baby, Angel baby, and Angel’s mother slowly emerge as such new linguistic categories« (RAFANELL/SAWICKA 2022: 82). The expression »Earth baby« corresponds to the German term »Erdenkind«, which appears in 6 tweets within the corpus. The term »earth baby/Erdenkind« refers to living babies or children, in contrast to deceased children. »Angel’s mother« corresponds to the German terms »Sternenmama« (found in 39 tweets) or »Sternemutter/Sternenmütter« (found in 8 tweets).

In relation to the frequency of usage observed for the aforementioned terms, it can be posited that the term »Sternenkind« demonstrates a substantially greater occurrence rate. It is important to note that, as mentioned above, the data was collected based on the search term »sternenkind«, so it is not surprising that the term appears in 6,697 tweets (the corpus analyzed consists of a total of 8,351 tweets, meaning that there are 1,654 tweets where the string »sternenkind« is only present in the linked content). The term »Schmetterlingskind« appears in 16 tweets, »Engelskind« in 11 tweets, and »Himmelskind« in 6 tweets. All the aforementioned expressions can be categorized as colloquial language. It is noteworthy to mention that some affected individuals may reject these expressions as they perceive them to be euphemistic, kitschy, or otherwise unsuitable (cf. BÖCKER 2022: 32). In the aforementioned thread, an individual also expressed their initial discomfort with the term »Sternenkind«; they further observed, however, that it is generally well comprehended, predominantly accepted, and appreciated.

Next, we will provide a concise overview of the historical background surrounding the emergence of the term »Sternenkinder«. Susanne Tienken (2015: 135) found an internet record of the expression on a memorial page on the internet from 1991; in the German Reference Corpus, »Sternenkind« first appeared in 2001. In 2008, a German-language Wikipedia article on the topic of »Sternenkind« was created.⁶ Although there were first occurrences of the word in the last millennium, it took a while for the word to become better known. In the 2013 *Rechtschreibduden* (the best-known dictionary on the orthography of standard

6 <https://de.wikipedia.org/w/index.php?title=Sternenkind&action=history&dir=prev> [accessed July 18, 2023].

German), the lemma »Sternenkind« was not yet listed; in the 2017 edition, one finds an entry: »euphemistic for a child who died before or shortly after birth« (DUEDENREDAKTION 2017: n.pag., original emphasis, translation C.M.S.^[7]). According to Tienken (2016: 168), online forums have played a significant role in establishing the term. Of course, it is mainly personally affected persons who use such forums, but the term can since also be found more and more often in newspaper articles. As discussed earlier, based on the Twitter corpus used here, it can be observed that tweets contribute to the dissemination and awareness of the term. Other social media platforms such as Instagram likely also add to the increased familiarity of the expression.

Finally, let us consider the most frequent 20 hashtags found in the corpus as they clearly reflect the subject matter at hand (the hashtag »sternenkind« was excluded as it served as the search term for creating the corpus). The hashtags mention the individuals involved, the event, associated evaluations and emotions, as well as memorial occasions and locations (cf. figure 2).

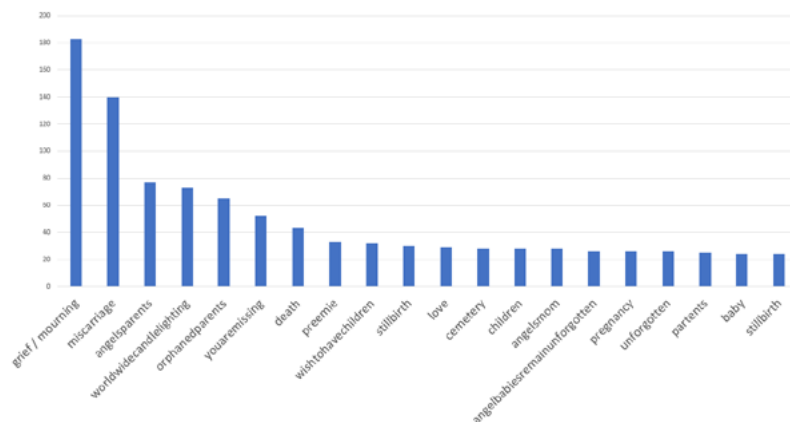


Figure 2: Top 20 hashtags in the corpus (translated into English)^[8]

Seven hashtags refer to the individuals involved. The angel babies are also referred to as »preemies« (premature babies), »children«, or »babies«. The parents are referred to »as angels' parents and orphaned parents«^[9]; with 28 occurrences, the hashtag »sternenmama« made it into the top 20, while the hashtag

7 Original: »verhüllend für vor oder kurz nach der Geburt gestorbenes Kind«.

8 Original: »1. trauer, 2. fehlgeburt, 3. sterneneltern, 4. worldwidedandlelighting, 5. verwaisteeltern, 6. du-fehlst, 7. tod, 8. frühchen, 9. kinderwunsch, 10. stillegeburt, 11. liebe, 12. friedhof, 13. kinder, 14. sternenmama, 15. sternenkinderbleibenunvergessen, 16. schwangerschaft, 17. unvergessen, 18. eltern, 19. baby, 20. totgeburt«.

9 The verb »verwaisen« (to become an orphan) actually means »to lose one's parents through death«, but in this context, the reference is reversed, meaning »parents who have lost their child through death«.

»sternenpapa« appears only three times throughout the corpus. The two most frequently mentioned emotions in the context of angel babies are grief/mourning and love. The hashtag »grief«/»mourning« (in German, there is no distinction between both) ranks first, while the hashtag »love« can be found in the 11th position. In the context of family planning, more general hashtags such as »wish to have children« and »pregnancy« are present, with the latter potentially ending in death and the birth being referred to as a »miscarriage« or »stillbirth« (in German, the terms »stille Geburt« and »Totgeburt« are used for »stillbirth«, with »stille Geburt« carrying a significantly more positive connotation than »Totgeburt«). Furthermore, several hashtags with evaluative positions can be found. There are 26 instances of the hashtags »angel babies remain unforgettable« and »unforgotten« each. It can also be noted that in the German-language online mourning discourse, the hashtag »dufehlst« (»you are missing«) has also become established. Therefore, not only are the deceased spoken about, but they are also spoken to directly using the pronoun »du« (»you«). In addition to the mentioned hashtags, the mourning discourse also includes additional ones addressing the deceased directly, predominantly containing present tense verbs such as »to be missing«, »to love«, and »to miss someone« (cf. BODENMANN et al. 2023). Finally, within the top 20 hashtags in the corpus, there is one hashtag for a memorial occasion and one for a memorial site. The initiative »Worldwide Candle Lighting« has established the annual World Remembrance Day to commemorate all children who have passed away. It takes place on the second Sunday of December, during which individuals place burning candles in their windows at 7 p.m. as a symbol of remembrance. In addition, there is the lesser-known »Tag der Sternenkinder« (»Day of Angel Babies«), which goes back to the »Pregnancy and Infant Loss Remembrance Day« originating in America and taking place on 15 October every year. The hashtag »cemetery« refers to a physical memorial site; often newspaper articles report on cemeteries when new burial sites are opened specifically for angel babies (which is then quoted on Twitter).

5. Frequency and type of emojis in the corpus

Emojis cannot be considered a typical feature in the corpus studied here; only 18% of all tweets contain emojis. Of the 1,538 tweets with emojis, 868 tweets contain only one emoji, which corresponds to 56% of the tweets with emojis. Also, 2 to 4 emojis per tweet still occur relatively frequently. More than 6 emojis, in contrast, can only be found extremely rarely (cf. figure 3).

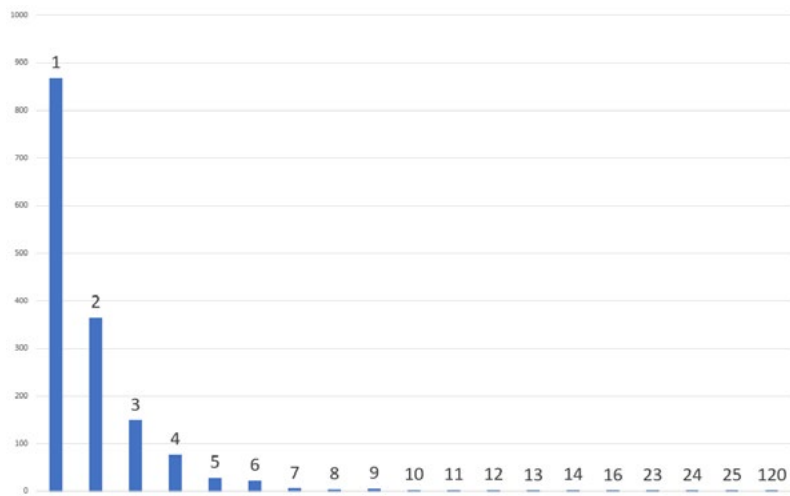


Figure 3: Number of emojis per tweet

Let us now take a closer look at the 20 most frequently used emojis in the corpus. As shown in figure 4, there is again a long-tail distribution. At the outset, it should be noted that the ranking of emojis on positions 12 and 13, as well as 14 and 15, are tied in terms of frequency of occurrence. This means that the positions can be interchangeable or that the emojis can be considered on the same level. Furthermore, it should be noted that variant selectors (text style vs. emoji style) were not taken into account in the ranking, meaning that variations of emojis were grouped together.

The ❤️ emoji (Red Heart)¹⁰ emerges as the unequivocal frontrunner, exhibiting 584 instances and thereby establishing itself as the preeminent and most prevalently employed emoji within the examined corpus. Apart from the red heart, which takes first place, there are other heart emojis in the corpus. In fourth place is the 🖤 (Black Heart), which symbolizes grief and love at the same time. Likewise, the 🩸 (Broken Heart) symbolizes the simultaneous existence of pain and love. Positions 12 and 16 are occupied by the 🍀 (Green Heart) and the 💙 (Blue Heart) emojis, while the 😊 emoji (Smiling Face with Heart-Shaped Eyes) occupies the 18th place. The 19th and 20th positions in the ranking are comprised of the 💕 (Two Hearts) and 💎 (Sparkling Heart) emojis. It can thus be

¹⁰ It can be seen that different forms of the red heart are used in the corpus. The records of the red heart include both the Heavy Black Heart and Heart Suit emoji, both used with and without variant selector 16 (U+FE0F) for the emoji style. In the corpus, the Heavy Black Heart with variation selector (U+2764U+FE0F) dominates with 290 occurrences, followed by the same emoji without variation selector with 181 records. The Heart Suit emoji (U+2665U) is found 63 times with a variation selector and 50 times without.

summarised: Within the top 20 emojis, a total of 8 symbols are included that represent different forms of hearts, with two of these hearts symbolizing both love and grief. In addition, one emoji is depicted as a facial emoji with heart-eyes.

Grief is expressed with the already mentioned ❤️ in 4th position, the 💔 in 9th position, or the sad face emojis in 6th (😭 Crying Face), 7th (😱 Loudly Crying Face), 8th (😞 Pensive Face), and 17th (😓 Sad but Relieved Face) position.

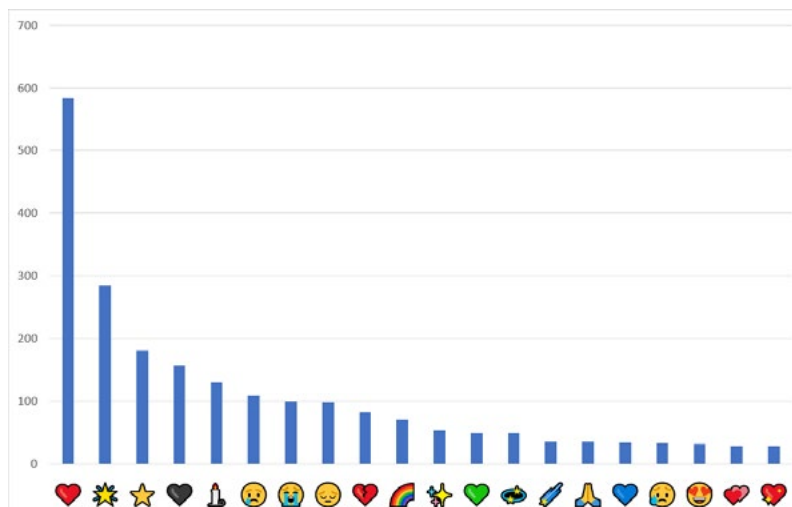


Figure 4: The most frequent 20 emojis in the corpus

When comparing the symbols representing love and grief, including the ❤️ and the 💔 in both categories, it is evident that the top 20 encompasses a total of 990 emojis symbolizing love, whereas 576 emojis symbolize grief. The symbol for love thus clearly dominates on the visual level before the emotion of grief and this is an interesting result because with regard to the hashtags, the situation is reversed: the hashtag »#mourning« leads the top 20 with 183 occurrences, while the hashtag »#love« in 11th place has only 29 occurrences.

As a result of the thematic orientation, emojis related to the topic of stars are naturally frequently encountered. The 🌟 emoji (Glowing Star) is in second place, followed by the ★ emoji (White Medium Star)¹¹ in third place. ✨ (Sparkles) follows in 11th place, 🌀 (Dizzy Symbol) in 13th place and finally 🌠 (Shooting Star) in 14th place. According to this, a quarter of all emojis in the top 20 can be

11 This emoji has only been available since 2015, cf. <https://emojipedia.org/star> [accessed July 31, 2023]. Other emojis have also been added to Unicode over the years, but as we know from figure 1, most of the tweets in the corpus were written after 2016.

classified as star symbols. In addition to the emojis mentioned so far, there are only three more emojis in the top 20 that we will now take a closer look at. To start with, we should mention the 🌈 (Rainbow) emoji, which is in 10th place. As in English, a child born into a family that has previously lost one or more children, for example through stillbirth, miscarriage, or even in infancy (or later), is called a »Regenbogenbaby« in German (»rainbow baby«). The symbol of the rainbow thus signifies the convergence of the sorrowful loss of a child (rain) with the subsequent joyous birth event (sun) and symbolizes the bond with the deceased sibling (cf. BÖCKER 2022: 32). So, the rainbow symbol is also closely connected to the topic of interest.

The 🕯️ (Candle) emoji, the 🙏 (Person with Folded Hands) emoji, and the 🍼 (Baby Angel) emoji can be seen as religious or spiritual symbols. In terms of popularity, the 🕯️ ranks fifth, behind the two different heart and two different star emojis. The act of lighting a candle holds significance in various religious beliefs. For instance, according to Carsten Stage and Tina Thode Hougaard (2018: 51-52), the Catholic Church has a tradition of lighting candles to commemorate the deceased; they also state that the flame can symbolize the soul of the deceased when lighting a candle in the context of death and remembrance. Additionally, grave lights are commonly placed at gravesites as a way to remember the deceased. As mentioned earlier in the text, the global commemoration day Worldwide Candle Lighting plays an important role in the remembrance of angel babies. Therefore, it is not surprising that the 🕯️ emoji plays an eminent role in the corpus. The 🙏 emoji represents a prime illustration of an emoji that elicits diverse interpretations across different cultures. In Japanese contexts, this emoji is employed to convey meanings such as »please«, »sorry«, or »thank you«. In the German-speaking regions, in contrast, folded hands are also interpreted as a gesture of humility, which conventionally can be associated with gratitude (cf. BEISSWENGER/PAPPERT 2022: 109). Conversely, in other cultural contexts, it is perceived as a representation of praying hands, while certain segments of the US population interpret it as a gesture symbolizing a »high five« (cf. SIEVER 2020: 136). When considering the interpretation of the folded hands as a symbol of prayer, the usage of the emoji can be attributed to the religious or spiritual domain. The act of prayer is typically associated with the gesture of folding one's hands in front of the chest, and prayer itself represents a central religious practice in many faiths.

As mentioned earlier, the variant selectors that influence text style and emoji style were not taken into account in the ranking. Emojis with different variants in terms of skin tone or gender were not grouped together. If this were done, there would be a total of 28 records of the 🍼 (Baby Angel) emoji, which corresponds to position 19 in the ranking. The frequent occurrence of the 🍼 emoji is not surprising considering that occasionally the term »Engelskind« is used in

German. The notion that the deceased (>child in heaven<) could take on the form of an angel, perhaps even that of a guardian angel, is also quite plausible. We find tweets in which an angel baby is explicitly mentioned as »Sternenkind« but is nevertheless referred to as an angel: »This can't be true.. We will always have the little angel in our hearts. #Angelbaby ❤️👼🇩🇪🌟«. [12] Furthermore, it is worth noting that all four emojis used in this tweet belong to the top 21 most frequently used emojis in the corpus, and they serve as a representation of the theme of »mourning for an angel baby.«

6. Emojis in the context of digital mourning

The use of emojis will now be compared to general emoji usage and emoji usage in the context of digital mourning. In a large-scale project on WhatsApp communication in Switzerland, the ❤️ emoji was also identified as the most frequently used emoji (cf. DÜRSCHIED/SIEVER 2017: 276). In positions 2 to 10 within the top 10, face emojis are found, with no >frowneys< (any sort of sad faces) included. Therefore, apart from the heart emoji, there is no overlap in usage. In a study on German-language Instagram communication, only the 😊 emoji and the ❤️ emoji, which are also commonly used in the emojis under investigation, occupy the first and second positions (cf. SIEVER/SIEVER 2020: 187). Let us finally examine a study on Twitter data. Mengi Li et al. (2019: 1753) analyzed emoji usage with data from the year 2016, collecting a thematically neutral corpus. In their data, the 😊 (Face with Tears of Joy emoji) ranks first by a large margin, followed by the ❤️ emoji in second place, and the 😊 emoji in third place (cf. LI et al. 2019: 1757). Interestingly, in these data, we find the 😞 emoji ranking fifth, which corresponds to the seventh position in our corpus. Additionally, we also observe other sad faces such as the 😊 or the 😞 emoji, which are also present in our corpus.

This indicates that the ❤️ emoji is widely popular in communication, ranking first or second in both the current study and the mentioned investigations. However, in everyday communication on WhatsApp and Instagram, joyful emotions dominate, while in mourning communication, sad faces are prevalent. On Twitter, conversely, we also observe the presence of frowney face emojis. It would be valuable to conduct further research in order to examine the potential platform-specific disparities in the utilization patterns of frowney face emojis. Besides the technical affordances offered by different platforms, it is particularly likely that distinct communicative practices have emerged on various social media platforms, which in turn have an influence on emoji usage. For instance,

12 Original: »Das kann nicht wahr sein.. Wir werden den kleinen Engel trotzdem immer im Herzen haben. #Sternenkind ❤️👼🇩🇪🌟«.

on Twitter, there are so-called ›RIP storms‹, a term coined by journalists to describe the »phenomenon of mass mourning or widespread expressions of emotional engagement«^[13] (STEIN 2021: 65). This phenomenon has also been referred to as collective fan mourning, as the death of prominent individuals is often collectively mourned under the hashtag »#RIP« (cf. FRICK 2019: 179). While Karina Frick (2019: 186) was unable to include emojis in her analysis due to technical reasons, Giaxoglou (2020: 144) notes as a side remark in her work on the hashtag #RIP: »it is worth noting that on Twitter, the expression R.I.P. is often accompanied by the use of emoji, e.g. folded hands emoji, heart emoji or a combination of these, where emoji further intensifies the specific affective undertone of the message.« This frequently observed communicative practice of so-called ›RIP storms‹ on Twitter could therefore be a reason why there is a higher occurrence of frowney emojis in Twitter communication compared to other forms of digital communication.

The following discussion will focus on the emojis that are relevant in mourning communication. Xinyuan Xu et al. (2021: 262) conducted a study to identify mourning communication on Twitter using machine learning techniques. They concluded that emojis alone are insufficient for this task, and the most effective strategy for identifying mourning tweets involves the combination of emojis and words. For their analysis, they considered which emojis could be most representative in mourning contexts, categorizing them into two groups: 1. »*Emotional emojis* that express grief and condolences, for instance, ❤️, 🖤, 😞, 😓, 😔, 🍀« and 2. »*Death symbolic emojis*, that may reflect the offline symbols of death and mourning, for instance: 🙏, 🙏, 🙏, 🙏, 🙏« (XU et al. 2021: 257, original emphases). The analyses revealed that the key emojis in the context of mourning were ❤️, 😞, 😞, 🙏, 😔, and 🖤. This implies that only the 🙏 emoji originates from the category of death-symbolic emojis, while all the other emojis belong to the first category of emotional emojis representing grief and condolences (cf. XU et al. 2021: 261). In comparison to our data, we can observe that all the emojis mentioned in the analysis also appear in our dataset, specifically ranking 6 to 9 and 15. Conversely, in our corpus, we find the 🙏 and the 🙏 emoji among the death-symbolic emojis, which were deemed less relevant in Xu et al.'s analysis. However, as explained earlier, this can be attributed to the specific theme of angel babies or the commemoration of angel babies.

Regarding Danish mourning communication on Facebook, Stage and Hougaard (2018: 57) note that, while facial emojis play an increasingly important role in expressing empathy and grief on social media, the ❤️ emoji was by far the most frequently used. Unfortunately, the authors do not specify the respective emojis but make a more general statement: »*In addition to the heart, we observed*

13 Original: »Phänomen der Massentrauer bzw. massenhaft bekundeter Betroffenheit«.

different varieties of the crying or sad face, stars, angels, praying hands, and flowers« (STAGE/ HOUGAARD 2018: 57). The appearance of star and angel symbols in contrast to the other mentioned online mourning communication can be attributed to the nature of the data: the corpus consists of two public Facebook groups discussing cancer in children (cf. STAGE/HOUGAARD 2018: 5). Stage and Hougaard (2018: 44) also note that »participants write about ›a children’s heaven‹ from which the child ›is looking down‹ on us, or when they describe the children as ›stars‹ and ›angels‹ having ›wings‹.« Consequently, it can be inferred that these emojis, which were described earlier as typical for mourning angel babies, are generally used in mourning the loss of deceased children. Flowers play a minor role in the corpus analyzed here, in contrast to the analysis by Stage and Hougaard. In the present study, the emoji 🌿 (Wilted Flower) only appears in 69th place with 6 occurrences, followed by 🌺 (Hibiscus) with 5 occurrences, 🌹 (Rose), and 🌸 (Cherry Blossom) with 3 occurrences each, 🌼 (Bouquet of Flowers) and 🌻 (Sunflower) with 2 occurrences each, and 🌷 (Tulip) finally appears once.

In summary, regarding emojis in mourning communication, it can be concluded that in addition to the ❤️, emojis expressing grief, such as frowneys or broken hearts, play a central role. Death-symbolic emojis like folded hands or religious symbols are of secondary importance in mourning communication. Symbols like stars, the 🌈, and the 🙏 are even more specific to mourning communication associated with the death of angel babies or the death of children in general. As noted by Stage and Hougaard (2018: 57), the »inventory of emojis mirrors what many Westerners associate with death, mourning, and funerals.« Accordingly, the emojis used in mourning for angel babies or deceased children generally reflect the associations that people have with this topic.

Lastly, two exemplary tweets will be discussed, featuring heart emojis and emojis that are typical for mourning communication in general as well as for communication related to angel babies. This will also involve a closer examination of the multimodal relations between the text and the emojis. In the first tweet, the question could be raised whether they actually represent mourning communication at all, as neither the text nor the emojis express grief, but rather love: »❤️❤️❤️❤️❤️❤️ Remembrance may fade, but my love for you shines in many colours. 🌸🌸🌸🌸🌸🌸 #angelbaby«. ¹⁴ In terms of multimodality, specifically semantic text-image relations, it can be observed that there is redundancy present: The emojis mirror the message conveyed in the text. In the second tweet quoted in the following, the child’s date of birth and name have been anonymized: »On [date of birth], [first name] was stillborn ❤️💔😭 My dear wife was in her 19th week of pregnancy. However, [first name] already received angel

14 Original: »🌸🌸🌸🌸🌸🌸 Andenken verblissen aber meine Liebe zu dir leuchtet voller Farben. 🌸🌸🌸🌸🌸🌸 #sternenkind«.

wings in the 17th week 😞😞 #AngelBaby #AngelBabies 🕯️🙏🌟🌟🌈«.^[15] The quoted example tweet includes a total of 10 different emojis, all of which are represented in the top 20 of the analyzed corpus. The use of these emojis can thus be considered prototypical for this type of communication. However, the number of emojis used significantly exceeds the usual number in the analyzed tweets. In this example, we find the semantic relation of complementarity, meaning that the overall meaning of the tweet arises from the combination of the text and the emojis. Evaluative verbal expressions are only found regarding the wife, but not regarding the deceased child. The grief for the deceased child is expressed in two places in the tweet not verbally, but non-verbally through sad faces and a broken heart. The emojis at the end of the tweet are typically used in the context of angel babies, thus showing a certain degree of redundancy within the text. However, it should be noted that although the text mentions angel wings, there is no corresponding emoji present. The following two sections will present exemplary analyses of emojis in communication related to angel babies.

7. Analysis of the functions of emojis in mourning communication regarding angel babies

As mentioned before, there are certain emojis that are typical for communication related to the death of children. In this context, various star emojis are most commonly used, as explained in section 5 above. However, conducting a comprehensive analysis of the usage of these star emojis would exceed the scope of the present article. Instead, I focus on analysing the 🕯️ emoji, 🙏 emoji, and 🥰 emoji in this context.

In the corpus, the 🕯️ emoji was found 130 times, spread across 109 tweets. The following analysis focuses on the functions and contexts in which this emoji appears in the corpus. From a thematic perspective, we can elicit the following aspects. As mentioned above, lighting a candle is associated with the global commemoration day for angel babies, Worldwide Candle Lighting. Additionally, on Twitter, candles are specifically ›lit‹ for individuals who have (just) lost an angel baby, similar to the practice of lighting a candle on an online memorial site (cf. FRICK 2021: 253). At this point, let us give an example in which a parent asks to light a candle for their angel baby. »🌈 [First name]. 🕯️. Have a safe journey, my darling. 🥰 I love you! . . Would you do me a favour and light a candle for my son?

15 Original: »Am [Geburtsdatum] wurde [Vorname] still geboren❤️💔😞 Meine liebe Frau war da in der 19. ssw. Engelsflügel hat [Vorname] aber bereits in der 17. ssw bekommen. 😞😞 #Sternenkind #Sternenkinder 🕯️🙏🌟🌟🌈«.

🕯️ The thought of a sea of lights for my angel baby feels comforting.«^[16] Finally, candles are also used ›only‹ for purposes of illustration related to the topic of angel babies, sometimes in combination with other emojis. The analysis of the tweets shows that a total of 39 tweets can be found in relation to the mentioned commemoration day, with 19 tweets belonging to the practice of lighting candles on Twitter. The remaining 51 tweets are generally related to the topic of angel babies.

Regarding the semantic relations in the domain of multimodality or interpicture-ality, it can be observed that in 22 tweets with 🕯️ emojis, candles are explicitly mentioned as such or as light. In 28 cases, the emoji refers interpicture-ally to an image associated with the tweet, where a candle is also visible. In 53 tweets, 🕯️ emojis are used purely illustratively, an example being: »Another angel baby in the family. I would have loved to meet you, my little niece. ❤️⭐️🕯️«^[17]. Lastly, there are 4 cases of iconographic communication, indicating a complementary relation. In two cases, the noun »candle« is replaced by an emoji, with both tweets coming from the same author: »A 🕯️ for our angel baby« and »A 🕯️ for our #angelbaby ❤️⭐️«^[18]. Another Twitter user employs the emoji in a similar manner: »Today is #angelbaby day. At 7:00 PM, a 🕯️ will be lit for all angel babies. We will never forget you. 🙏❤️«^[19]. In the fourth example, the emoji represents »one candle« (instead of 18): »18th birthday. 🕯️🎂 Actually. But instead, like every year, only 🕯️. And infinite love.«^[20] In 2 cases, the emojis have a segmenting function, i.e., the emojis serve as structuring individual signs within the communicative messages: »🍌🍌🍌🕯️🕯️🕯️🍌🍌🍌🕯️🕯️🕯️🍌🍌🍌« and »🕯️ [first name] 🕯️«.

In summary, it can be concluded that approximately half of the tweets with 🕯️ emojis can be thematically attributed to the commemorate day for angel babies and the practice of (virtual) candle lighting. Regarding the text-image or image-image relations, a redundant relation can be found in approximately half of all tweets. Taken together, the 🙏 emoji appears a total of 47 times in the corpus, distributed across 44 tweets. The total count is higher than the numbers indicated in the top 20, as the emoji exists in various skin tones in the corpus. When examining the functions^[21] of the emoji, it can be observed that expressing solidarity is the most common in 18 cases. An example of this is the following

16 Original: »🌈 [Vorname]. 🕯️. Gute Reise, mein Schatz. 🌟 Ich liebe dich! . . Würdet ihr mir einen Gefallen tun und eine Kerze für meinen Sohn anzünden? 🕯️ Der Gedanke an ein Lichtermeer für mein Sternchenkind fühlt sich gut an«.

17 Original: »Wieder ein Sternchenkind mehr in der Familie. Ich hätte dich gern kennengelernt, meine kleine Nichte. ❤️⭐️🕯️«.

18 Original: »Eine 🕯️ für unser Sternchenkind« und »Eine 🕯️ für unser #Sternchenkind ❤️⭐️«.

19 Original: »Heute ist #sternchenkind Tag. Um 19.00 Uhr wird eine 🕯️ angezündet für alle Sternchenkinder. Wir werden euch nie vergessen 🙏❤️«.

20 Original: »18. Geburtstag. 🕯️🎂 Eigentlich. Aber stattdessen wie jedes Jahr nur 🕯️. Und unendliche Liebe«.

21 Adding up the respective counts of all functions results in a total of 47. This is because, in some tweets, multiple functions were found.

tweet: »Today is the day of #angelbabies, which may be a very emotional day for many of you. I'm thinking of you and your little stars [angel babies] 🙏🌟«. [22] In 14 tweets, the emoji is used to express thanks or gratitude, as in the following example: »[...] Many thanks for your kind and comforting words 🙏❤️ [...].« [23] In 7 tweets, the religious meaning of prayer can be found: »I will include you and the angel baby in my prayers. 🙏❤️«. [24] In 5 tweets, the emoji is used along with other emojis to signify a form of remembrance, as in the following example: »Yesterday, I composed a little song. I dedicate it to my dear father ❤️ and my dear #angelbaby [first name] ❤️ I miss you both infinitely ❤️❤️😭😭😭😭🕯️🕯️ 🙏🙏🌈🌟🌟🌟📺«. [25] Finally, in 3 cases, it is used to frame requests: »🙏 PLEASE 🙏 RETWEET ❤️ [...].«. In conclusion, it can be observed that the 🙏 emoji primarily expresses solidarity with those affected and gratitude. Only in a few cases is the emoji used in a religious interpretation of prayer.

Finally, the 🧚 emoji is found 27 times in 19 different tweets. Explicit mention of angels is only made in two cases, as in the following tweet: »I believe this needs to be made public! Thank you for your attention! Fly high little angel 🧚❤️ † 27.05.2020 #AngelBaby«. [26] In the other 17 cases, the emoji is used to refer to angel babies, with the implicit notion that angel babies are angels. Therefore, unlike the previously analyzed 🙏 emoji, the 🧚 emoji is predominantly associated with religious or at least spiritual connotations. Lastly, let us look at two more examples where the 🧚 emoji is used for angel babies. In the first example, a distinction is made between a late and two early losses in pregnancy: »+1 angel baby 🧚 +2 early 🌟 little stars«. [27] In another tweet, the 🧚 emoji is used to differentiate between living and deceased children: »Today was the baptism of child number 4: Four candles but unfortunately only three children. #Angelbaby ❤️🧚🧚🧚«. [28] Through the emojis, additional information is conveyed that the third of the four children has passed away. The tweet text refers to a photo with four (baptism) candles, where the third candle stands out from the others due to its smaller size. It is worth noting that the tweet mentions candles, but it does not include a 🕯️ emoji.

In summary, it can be concluded that the emojis 🕯️ and 🧚 are primarily used with a religious connotation in communication about angel babies. The 🙏 emoji

22 Original: »Heute ist der Tag der #Sternenkinder, für viele von euch vielleicht ein sehr bewegender Tag. Ich denke an euch und eure Sternchen 🙏🌟«.

23 Original: »[...] Vielen lieben Dank für eure lieben und tröstenden Worte 🙏❤️[...]«.

24 Original: »Ich werde dich und das Sternkind in meine Gebete einschließen. 🙏❤️«.

25 Original: »Gestern habe ich ein kleines Lied gedichtet. Ich widme es meinem lieben Papa❤️ und meinem lieben #Sternkind [Vorname]❤️ Ihr fehlt mir beide unendlich ❤️❤️😭😭😭😭🕯️🕯️🙏🙏🌈🌟🌟📺«.

26 Original: »Ich denke mir, sowas muss einfach an die Öffentlichkeit! Danke für Eure Aufmerksamkeit! Fly high little angel 🧚❤️ † 27.05.2020 #SternenKind«.

27 Original: »+1 Sternkind 🧚 +2 frühe 🌟 Sternchen«.

28 Original: »Heute war Taufe von K4: Vier Kerzen aber leider nur drei Kinder. #Sternenkind ❤️🧚🧚🧚«.

is rarely used in the meaning of prayers or praying, but rather expresses a sense of solidarity, thanking, and gratitude.

8. Death-symbolic emojis and religious emojis in the context of digital mourning regarding angel babies

As previously explained, death-symbolic emojis generally play a minor role in the context of mourning communication. However, we have observed that in the context of angel babies, the emojis analyzed in the previous section, such as the 🕯️ emoji, the 🙏 emoji, and the 🙄 emoji, play a central role. All these emojis can potentially be used as religious symbols. In this section, we will investigate whether there are additional emojis that can be classified as death-symbolic emojis or religious emojis. It should be noted, however, that the corpus contains very few of these emojis. Nevertheless, these emojis are briefly discussed on the basis of the tweets.

Firstly, we find the ☁️ (Cloud) emoji with 26 records, which can indirectly serve as a symbol for the sky or – here – heaven. Upon closer examination, however, we see that the emoji only appears in two tweets, which will be briefly explained here: »Day of Angel Babies – Oh, how beautiful. My little rascals in heaven are rejoicing! ☁️☁️🕯️🍏🕯️🍓🕯️🍌🕯️🍌☁️☁️«^[29]. The parent who wrote this repeats the verbal expression »my little rascals in heaven« using emojis, indicating redundancy in terms of multimodality. However, the post is only partially redundant, as the emojis actually provide more information than the text. Based on the emojis, we learn that there are four angel babies. The second tweet contains 22 ☁️ emojis arranged in an ASCII art style. It is a reply to a tweet where a father asks people to light a candle for his deceased angel baby. The frequency of the candle emoji in the corpus can be attributed, among other things, to many replies to this tweet. As seen in the example tweet, a candle was initially used.

» 🕯️

I hope it is cosy for an angel baby on the fluffy clouds. Say hello to Dad and [first name]. They are kind.

☁️☁️☁️☁️☁️☁️

☁️☁️E★R☁️☁️☁️☁️

☁️☁️☁️☁️☁️☁️☁️«^[30]

In the first tweet, the concept of heaven as an afterlife is explicitly mentioned, while in the second tweet, only the fluffy clouds are referred to. However, here

29 Original: »Tag der Sternenkinder – Oh wie schön. Da freut sich meine kleine Rasselbande im Himmell! ☁️☁️🕯️🍏🕯️🍓🕯️🍌🕯️🍌☁️☁️«.

30 Original: »Ich hoffe, dass es kuschelig für ein Sternenkind auf den Flauschwolken ist. Grüße Papa und [Vorname]. Die sind nett«.

too, heaven is implied casually, since greetings are also directed to other, previously deceased individuals. We also observe redundancy here, as the angel baby on the fluffy clouds is visually depicted with a star emoji and presumably the initials »E.R.« amidst cloud emojis.

The 😊 (Smiling Face with Halo) emoji is present 5 times in the corpus. In Christian art, angels are depicted with a halo, just like saints. In 2 out of these 5 tweets, angels are mentioned. In one tweet, from which only a part is quoted here, the emoji can be understood as a symbol for a child in the iconographically (cf. SIEVER 2015: 281) realized compound »Sternenkind« (🌟😊): »Thank you also for showing the important 🌟😊 photographers^[31]/images in the hospital.«^[32]

The ✝️ (Latin Cross), which is arguably the most unmistakably Christian symbol for death, appears a total of 4 times in the corpus, and in each case, it is mentioned alongside a date of death. As an example, consider a tweet in which the cross is contrasted with the 🍼 (Baby) emoji. The exact birth and death times have been anonymized, but the child was born in the early morning and passed away late in the evening: »The toughest day of my life! [first name] [date and time of birth] 🍼 [date and time of death] ✝️ #angelbaby.«^[33]

All other emojis in the corpus that can be classified as death-symbolic emojis and religious emojis are only attested once in the corpus. The 🏛️ (Church) emoji is used to illustrate the expression »healthcare chaplaincy«^[34]. The 🪦 (Gravestone) emoji, on the other hand, has only been available on Twitter since May 2020. It would be interesting to observe over time whether the use of newly available emojis increases. The tweet with the gravestone reads as follows: »On the way to visit the big brother to light a few grave candles 🕯️ 🪦 #angelbaby #angelbabies-remainunforgotten [photo of a toddler in a cemetery among gravestones]«^[35] We once again have a semantic relation of redundancy here: The word »grave candle« is depicted visually through a candle and a gravestone.

In one tweet, we find the 🤝 (Palms Up Together) emoji and 🙏 (Prayer Beads) emoji: »I am so ashamed.... 🙏♀️ 🤝 Rest in peace, little Artin, you are also an #angelbaby 🤝🕯️🙏 [Link to another tweet]«^[36] The tweet only becomes understandable when considering another tweet it refers to. There, it is mentioned that the body of a 15-month-old child, washed ashore in Norway, has been identified.

31 »Sternenkindfotografen« (literally: photographers of angel babies) are widespread in German-speaking countries: Photographers take pictures of angel babies on a voluntary basis so that their parents have a memory of the deceased child.

32 Original: »Vielen Dank, auch dafür, dass die so wichtigen 🌟😊 fotografen/Bilder im KKH gezeigt wurden«

33 Original: »Der härteste Tag meines Lebens! [Vorname] [Geburtsdatum und -zeit] 🍼 [Todesdatum und -zeit] ✝️ #sternenkind«.

34 Original: »Klinikseelsorge«.

35 Original: »Auf dem Weg zum großen Bruder um noch ein paar Grablichter anzuzünden 🕯️ 🪦 #Sternenkind #SternenkinderBleibenUnvergessen [Foto eines Kleinkinds auf einem Friedhof mit Grabsteinen]«.

36 Original: »Ich schäme mich so sehr.... 🙏♀️ 🤝 Rest in peace, kleiner Artin, auch Du bist ein #Sternenkind 🤝🕯️🙏 [Link zu einem anderen Tweet]«.

It is a Kurdish boy who had been missing since the sinking of a refugee boat. This context explains the use of the two emojis mentioned above: In the Muslim context, the 🙏 emoji can represent prayer while the 💖 is a symbol of significance in various religions. The commonly used phrase »rest in peace« (Latin: *requiescat in pace*) is expressed here as a wish. The author of the tweet may not be aware that this is used in the liturgy of the Roman Catholic Church in a prayer for the deceased, asking God to let them rest in peace. In any case, in terms of multimodality, we find the semantic relation of redundancy here, as both words of prayer and the prayer emoji are used. Furthermore, we see an example here that even older infants can be referred to as angel babies.

Finally, there are the emojis 🙇♀️ (Woman Bowing Deeply) and 🙇♂️ (Man Bowing Deeply), representing the female and male versions of the 🙇 (Person Bowing Deeply) emoji. This emoji would not be classified as a religious emoji, but users seem to perceive a kind of halo above the heads of the figures. Looking at the two tweets in which the emojis are used, there are indeed references to angels. In one tweet, the 😊 emoji is also included: »Sternenkind [first name] 🙇♂️ Rest in peace, angel«^[37] and »Angel babies watch over us as guardian angels 🙇♀️ 🙇♂️ 😊«.^[38]

In summary, it can be concluded that death-symbolic emojis and religious emojis – apart from the three emojis 🙏, 🙇, and 🙇 – play a marginal role in the examined mourning communication. Future research could focus on analysing the contexts in which these emojis are used. Additionally, comparing religious emojis from various religions and cultures in larger datasets could provide further insights.

9. Conclusion and outlook

In the present study, the use of emojis in the context of digital mourning, specifically in relation to angel babies, was examined. Based on an analysis of a Twitter corpus, various emojis were identified that are typical for this type of communication, and their functions and meanings were investigated.

The key finding is that emojis cannot be considered a typical feature of the analyzed mourning communication, as only 18% of all tweets in the corpus actually contain emojis. However, the tweets that contain emojis were examined. It can be stated that the 💖 emoji – just as in digital communication in general – is the most important emoji in mourning communication. Grief for angel babies is strongly associated with the concept of love. This is evident not only in the frequent use of heart emojis but also in the hashtag »#love«, which appears

37 »Sternenkind [Vorname] 🙇♂️ Ruhe in Frieden Engel«.

38 »Sternenkinder passen auf uns auf als Schutzengel 🙇♀️ 🙇♂️ 😊«.

relatively frequently. Additionally, other emojis play a role, which can be categorized as emotional emojis and death-symbolic emojis. In this context, it was discussed to what extent there are grief-specific emojis used across platforms in general, as well as specifically in relation to mourning for deceased children. Emotional emojis include emojis such as the ❤️ or 🥰, as well as various sad faces that express sadness and compassion. These emojis can be considered grief-specific, regardless of the specific topic or platform. Among the death-symbolic emojis, three emojis are particularly relevant in the context of communication about angel babies and the death of children in general: 🙏, 🙌, and 🥲. These emojis and their functions in communication were analyzed, and it was observed that the 🙏 emoji is rarely used in the sense of praying. Furthermore, it was found that death-symbolic emojis and religious emojis play a minor role in the context of digital mourning for angel babies. Although they occur occasionally, mourning communication primarily focuses on emojis that express grief and compassion. Furthermore, using various examples, the relations between text and emojis in multimodal communication were examined, particularly in terms of their (partial) redundancy or complementarity.

In future studies, a more detailed analysis of the use of different star emojis could be conducted. Building upon the insights from sections 4 and 5, it would also be interesting to further investigate the 🦋 (Butterfly), 🌈, and the various flower emojis. Exploring platform-specific differences in the context of digital mourning for angel babies would be valuable as well. Additionally, it would be intriguing to examine cultural variations, particularly between German and English, as emojis are culturally influenced symbols. In particular, the different terminologies used for children who have died shortly before, during, or after birth, as well as the concepts underlying the terms »Sternenkind« and »angel baby«, are likely to also influence the use of emojis.

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