

# **A Positive Psychological Understanding of Hope for the Future:**

## **Letters From a Life After the COVID-19 Pandemic**

*“Hope is the fundamental knowledge and feeling that there is a way out of difficulty, that things can work out, that we as human persons can somehow handle and manage internal and external reality”*

— W. F. Lynch

### **Master Thesis**

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## Abstract

Hope has increasingly been studied in terms of well-being, especially in connection with challenging life events, such as the COVID-19 pandemic. The aim of this study was to investigate how hope and hopelessness are displayed in personal narratives concerning a post-corona future. That way, insights into personal perspectives on hope for a future after COVID-19 were generated. As this study is part of a larger project on post-corona narratives, the collected data from that project was used for this study as well. This included data from a multi-dimensional questionnaire on personal and other-focused hope and the *Letters from the Future*, in which participants were asked to describe their post-corona life and the pathway which led to the described future. For this study, Digital Story Grammar as a form of Text-Mining Analysis was performed on the participants' (N=49) *Letters from the Future*. The results displayed that personal and other-focused hope were related to the most usage of positively associated *being* phrases, and least used negatively connotated *mental sensing* words. Also, people high on hope described their *existence* in the future more vividly and in-depth compared to people with less hope. Personal hope was especially observed by the most frequent use of *relational being* words, indicating a focus on personal assets in the form of interactions with family members or friends. *Material* and *expressional doing* phrases, as well as the stated *emotions* seemed to emphasise the presented perspective of hope or hopelessness in text. The results could be put into context with existing literature, setting it into perspective with linear restitution narratives and linear chaos narratives on hope, the definition of 'active hope' and its relation to faith. Moreover, the intermediate relationship between hope and mental health could be observed in narratives.

*Keywords:* Hope, post-corona future, Letters from the Future, Text-Mining Analysis, Digital Story Grammar

## Introduction

### Purpose

The interest in hope for both public and research purposes gained momentum around the late 20th century (Elliott, 2005). Various healthcare disciplines, such as medical and psychological sciences, argue for the beneficial value of hope on physical and mental health in society (Cheavens et al., 2005; Elliott & Olver, 2007). Some conducted research focused on hope and hopelessness during the COVID-19 pandemic and its influence on present well-being, stress, and mental health (Gallagher et al., 2021; Knowles et al., 2021; Walsh, 2020). It has been shown that hope can be related to greater subjective wellbeing, psychological health, less COVID-19 perceived stress and perceived emotional control (Gallagher et al., 2021; Pellerin & Raufaste, 2020; Yıldırım & Arslan, 2020). However, the experience of the pandemic can also negatively impact hope by causing mental health pathologies (Higgins et al., 2021; Kaplan Serin & Doğan, 2021; Saricali et al., 2020; Wang et al., 2020) due to the fear of own or others sickness, the loss of a loved one, financial insecurities (Kiliç et al., 2020; Ornell et al., 2020; Wang et al., 2020), or social distancing measures (Anderson et al., 2020; Wilder-Smith et al., 2020). Hence, there is well supported research available on the effects of COVID-19 on hope during the pandemic.

Contrastingly, little research explores the consequences of the COVID-19 virus on hope for a future after the pandemic. To address this gap, the current study is part of a larger project on COVID-19 narratives, the post-Corona Futures Project, in which participants' stories about a post-corona future and their levels of hopefulness during the pandemic were examined. For this current study, Text-Mining analysis was used to investigate how participants with different levels of hope personally constructed hope or hopelessness towards a post-corona future

retrospectively in text. Thus, the following research question was formulated “How hopeful are people towards a post-corona future and how is it constructed in narrative text?”.

### **Defining Hope Through a Positive Psychological Understanding**

Hope has been an object of research in various disciplines, ranging from theological and cognitive-behavioural to narrative and emotion-focused understandings (Larsen & Stege, 2010; Parse, 1999), making a single definition challenging. To combine several important aspects of hope, a positive psychological understanding was chosen in line with the purpose of this study. Hence, hope is defined as increasing well-being by influencing our “cognitive, emotional, and motivational stances toward the future, indicating a belief that future good events will outweigh bad events" (Peterson & Seligman, 2004, p. 572). In the field of positive psychology, hope can be understood as a key factor to enable happiness and health among a variety of humans that are not mentally ill but also not flourishing (Seligman & Csikszentmihalyi, 2014). This is especially relevant in the context of this study, as a high number of people do not necessarily suffer from a mental disorder but are negatively affected in terms of hope and well-being due to the consequences of the pandemic (Kaplan Serin & Doğan, 2021; Trzebiński et al., 2020).

To get further insight into the meaning of hope, Snyder et al. (2010) defined it according to four aspects. First, the expectation of better future perspectives compared to the present. Second, a person's ability to influence the future by being aware of one's own capabilities and limitations. Thirdly, setting future goals and perceiving multiple ways to reach them. And lastly, being aware that goal attainment involves challenges or drawbacks, while maintaining the motivation to act. The perception of goal attainment additionally influences the individuals' emotions (Fredrickson, 2013). People with low levels of hope are likely to experience more negative emotions when facing difficulties. This leads to a decrease in flexibility, problem-

solving skills, and life satisfaction in the long term. High-hope individuals oppositely are able to cope better with a challenging situation and are more likely to find solutions, increase their positive emotions, skills, and happiness (Fredrickson, 2013; Lazarus, 1999, 2000; Snyder, 2002; Snyder et al., 2002). Research showed that both trait hope, defined as dispositional hope, and state hope, defined as context-specific hope, increase well-being (Chang et al., 2013; Ciarrochi et al., 2015; Madan & Pakenham, 2014; Snyder, 2000; Snyder et al., 2002).

To create a more holistic view, different qualitative studies also support the positive psychological understanding of hope. They concluded that hope can be defined as a key factor for a supportive development of the self (Buckley & Herth, 2004; Larsen & Stege, 2012), perceived control (Elliott & Olver, 2007), and a change in perspective towards more positive thoughts, emotions and behaviours when facing challenging life events (Larsen & Stege, 2012). Therefore, hope can increase satisfaction with life and well-being (Duggleby et al., 2012).

Consequently, for the purpose of this study, hope was defined as a psychological resource that is important for different individuals with distinguishable mental health statuses. Hope can be understood as a learnable skill which is based on the interpretation of uncontrollable stressful life events like the COVID-19 pandemic, and the goalsetting, actions and emotions connected to it. This influences the perceived well-being of people when facing adversity (Fredrickson, 2013; Seligman, 1990; Seligman & Csikszentmihalyi, 2014; Snyder, 2002).

### **Measuring Hope**

Over the years, hope has been researched extensively and measured differently in previous studies. So far, a variety of different scales have been established to investigate hope. Overall, measures of hope can be either unidimensional (Snyder, 1995; Snyder et al., 1991) or multidimensional (Dufault & Martocchio, 1985; Miller, 1986; Nowotny, 1989; Raleigh &

Boehm, 1994; Schrank et al., 2011). Also, they can involve internal factors such as confidence and active involvement (Benzein & Saveman, 1998; Nowotny, 1989), or external factors like the influence of the environment (Cook, 2016; Schrank et al., 2011; Tipton, 2001) and support by others (Miller, 1986; Redlich-Amirav et al., 2018). Moreover, it has been shown that hope can be context-specific rather than covering all life areas equally (Farran et al., 1992; Rose & Sieben, 2017). It can be further distinguished between personal hope towards health or work performance (Madan & Pakenham, 2014; Rand & Cheavens, 2009), and other-focused hope towards saving the planet, economy, or overall humanity (Cook, 2016; Cretney, 2017; Polunin, 1991). Thus, measuring hope as a unidimensional construct limits the inclusion of important aspects. Therefore, investigating hope multidimensionally accounts for its complexity and measures it more comprehensively by considering that hope may vary over time, across different domains and significant life events like the COVID-19 pandemic (Duggleby et al., 2012).

Furthermore, several researchers studied hope through narratives, which can be understood as interpreting individual text (Aase Schaufel et al., 2011; Davison & Simpson, 2006; Elliott & Olver, 2009). It is advantageous to study hope through stories since people's texts are diverse, extensive (Elliott & Olver, 2009), and interchangeably linked to the construction of the self, planned behaviour and emotions towards the future (Bruner, 1987, 1990). Hence, examining hope based on stories offers more depth by considering the personal thoughts and feelings that the individual connects with a future after COVID-19. Further, in anticipating a wanted future after the pandemic, people may construct the connection between their past, present and future lives differently by possibly drawing on contrasting contents and sentiments (Bradbury, 2012).

The analysis of narrative contents and sentiments is possible through Text-Mining, which analyses unstructured text files by coding them into quantitative, testable data (Trusko et al.,

2010). By investigating the frequency of words and emotions, insights into a large corpus of textual data can be gained (Andrade & Andersen, 2020; Feldman et al., 1998; Singh et al., 2007). The interpretation of the textual data can be based on the domains of experience framework (Halliday, 2004). In compliance with Halliday's (2004) theory, the grammatical units of a sentence are categorised as sensing, doing or being words<sup>1</sup>. This allows for the differentiation of distinct processes that symbolise the perception and understanding of the constructed future in narratives (Halliday, 2004).

Consequently, in the current study, a multidimensional questionnaire which separately focuses on personal and other-focused hope was used. Also, the narrative data was investigated through Text-Mining. This combination of the prior was central to create nuanced measurements of hope towards a future after COVID-19 and to answer the research question "How hopeful are people towards a post-corona future and how is it constructed in narrative text?".

## **Methods**

### **Design**

The aim of this study was to explore which narrative patterns and sentiments could be related to people with different levels of hope. Hence, an explorative and comparative between-groups design was employed by investigating hopefulness on two levels (personal hope: low vs high and other-focused hope: low vs high). Therefore, the participants were divided into four different groups. Firstly, participants low on personal and other-focused hope (30.61%), secondly, participants high on personal and other-focused hope (40.82%), thirdly, participants low on personal hope and high on other-focused hope (2.04%), and lastly participants high on

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<sup>1</sup> The domains of experience framework (Halliday, 2004) will be explained in detail in the data analysis section

personal hope and low on other-focused hope (26.53%). The research was approved by the Ethics Committee of the University of Twente with the request number 190547.

### **Participants**

This study is based on the data collection of Saghai and Sools (2020, in press) which was conducted from April to July 2020. Using a purposive sampling strategy (Mthuli et al., 2021), participants were recruited through personal and professional networks, local newspapers, and social media platforms, including Twitter and LinkedIn. As eligibility criteria, a minimum age of 16 years as well as sufficient linguistic and cognitive competence were required to be able to envision the future and put it into narrative form. Additionally, participants living in the Middle East, Europe, Asia, and North America were included in the study since those countries are representative of the countries affected by the pandemic (Saghai & Sools, 2020, in press).

Due to the fact that this study is based on the data collection of Saghai and Sools (2020, in press), a convenience sampling strategy was used to draw participants from the original data. In line with the purpose of this study, participants with missing values on the hope scale were excluded. Additionally, participants with a neutral score (a value of three on the Likert Scale) were not included since only the extremes (hopefulness vs hopelessness) were of interest. This is the case because a neutral score does not indicate either hope or hopelessness, which makes its use unclear when investigating the narratives of people with different levels of hope. The final sample consisted of 49 participants. The age ranged from 18 to 78 ( $M = 42$ ,  $SD = 12.74$ ) with more female (69.4%) than male (30.6%) participants. A majority originated from Ecuador (49%) and Greece (38.8%), followed by participants from Finland (8.2%) and Estonia (4.1%). The demographic constellation is based firstly on grammatical considerations (Andrade et al., 2022). This means that the European languages used make the letters more comparable for



interpretation, aiming for accurate results (Andrade et al., 2022). Secondly, the sample was based on hope levels of the participants. Hence, only letters with high (a value of four or five on the Likert Scale) and low (a value of or two on the Likert Scale) hope were included in this study. This means that for example people from Ecuador indicated the most extremes on hope. In terms of hope, Parse (1999) found that people from different countries have a similar meaning of hope.

## **Materials**

### ***Letters From the Future***

The *Letters from the Future* intervention serves as the basis for this study to explore how people with different hope levels towards the future differ in a narrative way (Sools, 2020; Sools et al., 2015). This intervention aims to externalise individual future perspectives and the own action necessary to reach this future (Sools, 2020; Sools et al., 2015).

In the mid-2020 formulated letters, participants were asked to envision a future after the COVID-19 pandemic and to write about it from a future perspective backwards to the present moment by addressing a person of choice (Sools, 2020). To do so, participants were asked to imagine travelling with a time machine to a post-corona future and to describe how far into the future they travelled. Furthermore, they were invited to describe how their future world after the COVID-19 pandemic is visualised, themselves in their future and their personal development. They were also questioned about how they achieved their personal future and how the future world generally developed. By answering the questions and reflecting on them, the participants were formulating their *Letter from the Future* to the present moment (Appendix A). This way, different narrative patterns and sentiments could be analysed.

Moreover, a writing exercise like the *Letters from the Future* intervention has a therapeutic benefit by aiding to make sense of the past, present and future, and to enhance health

and well-being during difficult times like the pandemic (Andrade et al., 2022; Pennebaker, 2018; Sools, 2020). Further, it allows researching subjective personal perspectives towards the future and how they have been affected by this crisis (Sools et al., 2015; Sools, 2020).

### ***Questionnaire***

Subsequently to collecting participant's sociodemographic data, Saghai and Sools (2020, in press) designed a 4-item hopefulness scale to examine the participants' differences in hope (Appendix B). The questionnaire was generated in Qualtrics, which is an online platform to produce and publish surveys. For this study, the data on hopefulness and sociodemographic data was used.

**Hopefulness.** In order to measure hope, the participants had the option to use a five-point Likert scale (very fearful=1, very hopeful=5) to rate four different items. The first item (“*My outlook on my personal future life is...*”) measured personal hope for the future, whereas the remaining items (“*My outlook on the future of the country where I reside is...*”, “*My outlook on the future of humanity is...*”, “*My outlook on the future of the planet is...*”) measured other-focused hope for the future.

**Sociodemographic Information.** Of all the sociodemographic information collected, the participants’ age, gender, and educational status were included in this study for comparisons.

### ***Digital Story Grammar***

In order to perform Text-Mining Analyses, including content and sentiment analysis, the Digital Story Grammar program (DSG) was employed. DSG is used to do quantitative narrative analysis by dividing sentences into its grammatical units (subjects, objects, verbs) to create variables (Andrade & Andersen, 2020). It functions based on a machine learning algorithm (Andrade, 2019), which was created in the data analysis program *R* and accounts for the relations

between the individual narrative units through social network techniques. Moreover, it has been repeatedly recalibrated to consider cultural differences in speech and linguistic slang (Andrade & Andersen, 2020). Thus, DSG is well suited to analyse a large corpus of narrative data and to uncover new information regarding a personal understanding of hope or hopelessness towards a post-corona future (Andrade & Andersen, 2020; Feldman et al., 1998; Singh et al., 2007).

### **Procedure**

In the study by Saghai and Sools (2020, in press), the participants could select a language of their choice when filling in the questionnaire and writing the *Letters from the Future*. In general, the study was available in nine languages (German, Dutch, English, French, Spanish, Italian, Greek, Estonian, Finnish). First, the participants were informed about the study, operations, and eligibility criteria. It was mentioned that the completion of the research would take approximately 20-30 minutes and that all data would be used sensitively for research purposes, ensuring confidentiality. The participants were informed that withdrawal during the study is possible at any point in time without providing a reason and involving complete deletion of their data. Also, participants had to give their consent for data usage. It was furthermore mentioned that the participants could take a break in between the study when experiencing discomfort or psychological stress. There was no compensation for participation. All letters were translated into English and pseudonymized. The data is stored in the UT Network Storage anonymously to ensure integrity and safety. The original data can only be accessed by Saghai and Sools (2020, in press).

### **Data Analysis**

Based on the formed groups regarding personal and other-focused hope, the *Letters from the Future* were analysed exploratively by performing a content and sentiment analysis using

DSG (Andrade, 2019). For each group individually, the *Letters from the Future* were examined based on the word frequency of the presented narrative units and its connected sentiments according to Halliday's (2004) experience framework.

The interpretation of the *Letters from the Future* was performed by referring to the three domains of the experience by Halliday (2004), namely sensing, doing, and being. The first domain of sensing is defined as personal, internal processes and can be divided into four subcategories of visual ('see'), verbal ('talk'), mental ('think'), and emotional ('fear') sensing processes. Consequently, it will be analysed how the participants visualise, hear, understand, and feel towards their post-corona future. Since hope is understood as a positive attitude and positive emotions towards the future (Snyder et al., 2010), DSG can get insights into the individual's inner worlds from the *Letters from the Future*. In the domain of doing, Halliday (2004) identified two subcategories. On the one hand, material doing words, which are defined as outer behavioural processes ('do'). On the other hand, expressional doing words are about inner processes, which are manifested in observable behaviour ('decide'). Since hope was conceptualised as goal-directedness in the face of adversity (Snyder et al., 2010), it could be investigated in the context of doing processes by examining the action words used in the *Letters from the Future*. The last domain of being is about the experience of the self and can be divided into existential being ('am') and relational being ('have'). Existential being concerns the way we perceive ourselves, whereas relational being is about the things we possess in life (Halliday, 2004). Consequently, people with high or low levels of personal or other-focused hope may construct a post-corona future differently in narratives. Therefore, the *Letters from the Future* were analysed based on the aforementioned groups on hope and hopelessness.

## Results

### Frequency Results of the DSG Analysis

The *Letters from the Future* were analysed for each of the four created groups using DSG. The results on frequency of the constructs established by Halliday (2004) are presented in the table below (Table 1) and will be interpreted in the following groupwise.

**Table 1**

*The frequencies of the narrative units established by Halliday's (2004) domains of experience framework as percentages in the 'Letters from the Future' of participants with different levels of personal and other-focused hope*

	Low on personal and high on other-focused hope (N=1)	Low on personal and other-focused hope (N=15)	High on personal and low on other-focused hope (N=13)	High on personal and other-focused hope (N=20)
<b>Sensing</b>	25.0	28.8	27.2	25.2
Mental	25.0	21.5	20.1	18.7
Verbal	-	2.7	2.1	1.6
Emotional	-	4.6	5.0	4.9
<b>Doing</b>	40.0	24.2	25.4	24.6
Material	40.0	22.4	21.8	22.0
Expressional	-	1.8	3.6	2.6
<b>Being</b>	30.0	37.3	38.9	41.7
Existential	15.0	11.8	13.5	13.2
Relational	15.0	25.5	25.5	28.5
<b>NA</b>	5.0	9.7	8.6	8.5

### Interpretation of the DSG Results

It could be observed that there were no differences visible between the sociodemographic variables age, gender, and educational status between the groups. This was the case because

among all groups, positively and negatively connotated letters have been formulated. Therefore, there was no indication for sociodemographic variables being correlated with differences in hope towards the future.

### ***Low Personal Hope and High Other-focused Hope***

The results of the first group were identified as homogenous, which means that the letter was generally written in a negative and past-focused way. This was supported by the highest number of negatively connotated *mental sensing*, *material doing*, and *existential being* words used as compared to the other groups. Also, few *relational being* words, and missing *emotive* as well as *expressional doing* words were characteristic for this group.

It was observable that words identified as *mental sensing* were most often used in comparison to the other groups. The *mental sensing* words were mostly used to describe the past instead of envisioning a future world after COVID-19. Additionally, the past was generally depicted as “a distant nightmare”, leading for example to the “avoidance of social activities, (...) contact, transport, and teaching in classrooms”. This suggests a negative and past-focused writing instead of focusing on a positive future, which is an important characteristic of hope.

This was supported by the majority of sentences that were analysed as *material doings*. Most were connotated negatively by only writing about the undesired consequences of the pandemic, such as having to “follow the personal hygiene rules for the past 20 years”. However, it was also talked about “finding a vaccine”, which associates some kind of activity towards the end of the virus for society as a whole. This implies some presence of other-focused hope to decrease the consequences of COVID-19. Other aspects of other-focused hope, including the development of nature, humanity, or the economy, were not mentioned.

Moreover, it was visible that the letter was written more general than personal because not much detail about a personal future was included. This was additionally supported by the use of few *relational being* words and indicates that personal assets, impediments, or other relational interactions were not mentioned in the letter. Also, no personal *emotions* or *expressions* were mentioned. Lastly, *existential being* words were used most often compared to the other groups. In line with the previous interpretation, those were connotated negatively. For example, phrases like “something has changed after this ordeal, there is an inward fear of a (...) deadly virus” were interpreted as *existential being*. This suggests a future that is characterised by fear of COVID-19.

In all, the letter was formulated in a negative and past-focused way. Additionally, no concrete aspects of personal or other-focused hope were mentioned, which was represented by the most use of negatively connotated *existential being* and *mental sensing* words as compared to the other groups. Additionally, low *relational being* and no *emotional sensing* or *expressional doing* phrases were used. However, the activity towards finding a vaccine implies some other-focused hope. Thus, hope towards a better post-corona future might be low but working towards a more positive perspective can be interpreted from the letter at hand.

### ***Low Personal and Other-focused Hope***

The majority of participants from this group described a negatively progressing future regarding the pandemic as compared to the present. This included a high amount of uncertainty, fear, and mutations of the disease. However, the results were heterogeneous because a minority of participants from this group mentioned a slightly positively developing future. It was stated that humans learned from the effects of the virus or were at least able to stop its spread.

Similarly to the first group, most participants wrote about the past, which was interconnected with the second highest number of *mental sensing* words in text. In addition, it

was observable that participants described the past very vividly and in detail by writing for example “I remember people running to get whatever antiseptic wipes and liquid they had never bothered to buy before, items gathering dust on the sale racks until then”. Moreover, a remarkable amount of text included negative *mental* thought processes towards the future. It was for example stated that in the future the “mutations have determined much more aggressive viruses, and not only vulnerable people are dying but also of all ages”. This implies a negatively progressing future due to the COVID-19 virus compared to the present, indicating hopelessness.

Furthermore, *existential being* words were lowest for this group, and mostly used by participants who described the future as worse than the present. As an example, the future was narrated as a “chaotic and fearful world”. Additionally, participants often described unfavourable social, economic, and natural consequences ranging from limited social contact, over unemployment, to climate change and economic crises. Therefore, the negatively connotated *mental sensing* and *existential being* words proposed personal and other-focused hopelessness towards the future for the majority of participants. This means that most participants did not write that the future will hold better perspectives than the present nor mentioned any form of ability to prevent the negative future narrated. This was also supported by negative *emotions* addressing anger and fear. Moreover, the *expressional doing* words mostly focused on themes about death and exhaustion, mentioning for example that “50% of the adult population has died”.

However, few participants described a constant or slightly better future. In the context of *mental* words, it was mentioned that society learned from the pandemic in the form of adapting hygiene measures, using public transportation, and improving the healthcare system.

*Existentially*, it was mentioned that “the coronavirus has been defeated”, and *emotionally*, individuals were characterised as “enjoying” and “loving”. In *expressional doing* words,



personal hope was supported by stating increased social contact. And, in concern of other-focused hope, it was positively spoken about a revived economy, and taking care of the planet.

In conclusion, the letters included mostly negatively associated *mental sensing* and *existential being* words about the future. Subsequently, next to the few more positive aspects about a post-corona future, the majority of participants represented hopelessness in text.

### ***High Personal and low Other-focused Hope***

The letters of the third group were generally of a heterogenous nature. This is the case because its focus was divided on either positive or negative change considering a post-corona life. On the one hand, the ability to make a difference towards a better future was emphasised. On the other hand, it was associated with a worse post-corona world that cannot be prevented.

As compared to the aforementioned groups, less *mental sensing* words were used. This can be interpreted as writing about the past less often. Also in comparison to the previous groups, more positive thought processes were narrated. More than one participant described beneficial aspects of the future in terms of togetherness, gratefulness, and learning from the past. However, some negatively connotated *mental sensing* phrases were mentioned as well by writing for example that “the human race is very selfish and that is why we could not defend ourselves better from the pandemic”. This was supported by *emotive* words of anxiety and sadness.

Additionally, more *being* words were used as compared to the earlier groups. In regard to this, several participants mentioned a positive personal *existence* in the future by focusing on their happiness, occupation, finances, and free time. This can be related to more personal hope towards the future since that was not the case for the first two groups. It could be further emphasised by *expressional doing* words, which were most often used by this group, and *emotional sensing* words. Phrases focused on enjoying the physical contact after the pandemic.

Moreover, participants named some positive, *existential* changes in terms of nature, humanity, or society. This included themes like solidarity, kindness, and sustainability. However, negatively interpreted *being* phrases were also included in terms of other-focused hope. In that case, the future was described as being difficult due to several aspects, ranging from overcontrol of the government, over loss of individuality and labour exploitation, to further pollution. Those aspects were supported by *expressional doing* and *emotive* words, which indicated constant fear. An example phrase described that “people lifted their masks higher, (...) or at best reciprocated with an awkward smile full of anxiety and fear that our breaths might meet”.

In all, the lower use of negative *mental sensing* words and the more often used positive *being* words as compared to the previous groups can be related to a more positive personal future perspective, and thus, personal hope. Other-focused hope was mostly negatively presented in text. However, the few positive aspects of other-focused hope mentioned could to some degree be dependent on high personal hope. This is suggested because participants who wrote about a more positive personal future also tended to talk slightly more positive about the development of the environment, society, or economy. Thus, high personal hope could affect other-focused hope.

### ***High Personal and Other-focused Hope***

The content of these letters was homogeneous since all participants of this group wrote mostly positively about a post-corona future. The majority of individuals was only focused on changes towards a better future, but some participants additionally mentioned some negative aspects. Negative personal consequences of the pandemic mentioned ranged from social distancing to unemployment. Negative other-focused consequences included natural disasters, economic crises, and reduced healthcare. However, they warned and animated the reader to “fight” against those negative consequences, to be active and intervene in order to prevent them.

As compared to the previous groups, *mental sensing* words were lowest. This can be related to highly decreased negative thoughts about the past or towards the future. By contrast, participants depicted more learning tendencies from the consequences of COVID-19, focusing on for example the importance of “nature conservation and sustainable living”. Furthermore, the belief in a higher spirit guided a more hopeful outlook on the future for some participants. This was emphasised by statements like “We should not fear the future if we remember how you (God) have led us in the past”. Thus, a more positive post-corona future than present was visualised through *mental sensing* words as compared to the previous groups. This is supported by *emotive* words of happiness, gratefulness, and peace. Also, metaphors like “spring is coming”, or “sunny days” symbolised the end of a miserable time and the beginning of blooming days.

In comparison to the groups with lower personal or other-focused hope, *being* words in the letters at hand were used most often. This is the case because participants described the future very vividly and in much detail. In an example, a participant narrated himself in the future as being “surrounded by blossoming cherry trees, the flowers of which have a pleasant aroma, and by tourists whose cameras are flashing”. Moreover, *existential being* words were used mostly to describe a positive future, relating to personal and other-focused hope. Personally, participants described increased health, successful careers, improved working conditions, and strengthened social bonds. In regard to this, created plans were further supported by *material doing* phrases. Positive other-focused consequences ranged from improved healthcare, over sustainability, to a fair economic and political treatment of society. Thus, people with high hope described their future positively and in depth, which is shown by the frequently used *being* words in text. Oppositely, people with low personal and other-focused hope described the negative past vividly and in detail, supported by more *mental sensing* words used. This symbolises a contrast

in narratives concerning hope and hopelessness. Therefore, fewer negatively connotated *mental sensing* words and more positively connotated *being* words can be related to hope in general.

Lastly, the number of *relational being* words was highest for this group compared to the aforementioned groups. It was observable that participants from this group focused mostly positively on their relationships with close others. This is strengthened by active relational plans set for the future, categorised as *material doing* words. Examples were planning to buy a house with a partner, travelling with friends, or setting up a date to see the grandchildren play. Thus, personal hope in text was also represented as a high number of *relational being* words, which involved plans and actions towards relational interactions.

In all, the decreasing use of negatively connotated *mental sensing* words and the most frequent use of positively associated *being* words can be related to personal and other-focused hope in narratives. This was supported by positively associated *emotional sensing* and *material doing* words, emphasising a positive future perspective. Goal-directedness and making plans was demonstrated through relational interactions and can be related to personal hope specifically.

### **Discussion**

This study was conducted to investigate through DSG how participants with different levels of hope constructed hope or hopelessness from a future-focused perspective in the *Letters from the Future*. The results displayed that negatively connotated *mental sensing* words were more often used by people with less personal and other-focused hope and contrastingly, less often used by people with more hope. On the other hand, positively associated *being* words were more often used by participants with more personal and other-focused hope, whereas those were less common in the letters from people with lower hope. In particular, *relational being* words were most frequently used by people with high personal hope and supported by concrete plans.

In all, people with less personal or other-focused hope wrote more about the past or mentioned mostly critical aspects about the future, while people with more hope described the future and their place in it more positively, vividly and in depth. *Material* and *expressional doing* phrases as well as *emotive* words seemed to be dependent on the presented perspective in text, emphasising it by fitting emotions and planned, or missing behavioural actions towards a post-corona future.

Generally, the findings of this study are in line with previous research results on hope. Considering the positive psychological approach, hope in narratives was overall demonstrated as a positive perspective on the future, including cognitions, emotions, and motivations (Fredrickson, 2013; Peterson and Seligman, 2004), and as planned behavioural actions to attain goals (Snyder et al., 2010). Participants with a high level of personal hope wrote less about the past and a negative future, and *existentially* envisioned their future positively and in more depth. Also, they planned to achieve individual goals. Therefore, the current study results are in alignment with Ezzy's (2000) findings on linear restitution narratives. Linear restitution narratives relate to hope and are defined as wording that constitutes a plan to achieve personal goals in the future, keeping values that were set prior a difficult life event took place, and having a reliable social network of friends and family. In this study, participants with high personal hope mentioned for example plans of travelling with friends, graduating from a study program, or buying a house with a partner. In particular, plans that involve long-lasting decisions like buying a home demonstrate confidence in a future life (Ezzy, 2000). Also, buying a house was correlated with goalsetting for the future (Ezzy et al., 1998). This is further supported by a study of Arnaert et al. (2006) who labelled this type of hopefulness as 'active hope'. It enables a future-oriented planning and active engagement in goal achievement. This could also be related to the fact that the majority of participants with high personal hope focused on the post-corona

future earlier in time (2020-2025) compared to participants with low personal hope (2030-2080). According to Elliott (2005a) “relying on faith” could additionally be interpreted as an active response to difficult life events, thus being characteristic of personal hope in narratives (p. 141).

Based on that, other-focused hope does not only require a positive perspective on the future but also plans to rescue the planet or improve the economy and humanity. Surprisingly, this was not often found in the *Letters from the Future*. A part of this inaction towards saving the planet could be a lack of social mobilisation and education on a sustainable lifestyle, according to Gadotti (2008). In his research, Gadotti (2008) explains that only reaching awareness by the means of education is not enough to promote action towards solidarity in society, economy, and environmental intentions. Thus, education needs to be expanded on how to implement sustainable and solidaric actions in everyday life (Gadotti, 2008). While time has passed since Gadotti’s (2008) research has been conducted, based on the results of this study, there is still reason to believe that not enough actions have been taken in this regard. Other sources also support the importance of sustainable thinking in combination with the motivation to act (Corner et al., 2012; Doppelt, 2012; Klaniecki et al., 2016).

In particular, several aspects could hinder an active response towards saving the planet or humanity, including readiness to change (Arden & Armitage, 2008), current behavioural intentions (Guillaumie et al., 2012), and currently existing habits (Webb et al., 2009). Also, people experienced the pandemic as an urgent problem since they felt that their health and the health of their loved ones was at stake. Hence, only a minor role could have been given to thoughts about environment and society at large, while greater weight was put on egocentric perspectives and “survival” (Hochachka, 2020). Consequently, participants from this study with high levels of other-focused hope and a positive perspective on the future could be aware of

required change but several aspects could hinder proactive goal setting and action. To make this differentiation, a distinction between personal and other-focused hope by using a multidimensional questionnaire appeared relevant for this study.

Furthermore, the current study results showed that low hope was associated with mostly writing negatively about the past and mentioning negative thoughts and emotions towards the future. It was also related to low relational planning, including friends or family members. Therefore, the current study results on hopelessness in narratives are in line with Ezzy's (2000) definition of linear chaos narratives, which are related to phrases that express emotions of fear, depression, anger, and isolation. Also, an avoidance of future planning is observable (Ezzy, 2000). Moreover, research by Lee et al. (2021) demonstrated that death-related thinking, which was also presented in the narratives of people with low hope, reduced hope towards an end of the COVID-19 pandemic. In addition, the passing of a loved one (Wisman & Heflick, 2016) and a lacking social network (Arnaert et al., 2006) can limit hope. Due to that, not only mood pathologies like depression and anxiety can decrease hope further but low hope could also increase the chance for mental disorders, thus interacting in both directions (Ebright & Lyon, 2002; Lee et al., 2021; Sarna et al., 1996; Wisman & Heflick, 2016). Considering the DSG analysis and interpretation based on Halliday's (2004) framework, it can be reflected that this methodology offered insights into the intermediate relation between hope towards the future and current mental health or possibly developing mental health pathologies based on the presented negative thoughts, emotions, and missing actions in text.

In sum, hope in narratives was constructed as a positive outlook on the future compared to the past that was based on the planning of concrete goals (Peterson and Seligman, 2004; Snyder et al., 2010). This 'active hope' ranges from buying a house to relying on faith (Arnaert

et al., 2006; Elliott, 2005a; Ezzy et al., 1998). Personal hope can have an impact on other-focused hope, but a social network might be crucial (Arnaert et al., 2006; Lee et al., 2021). Further, the combination of religious beliefs and a present community offers belongingness, togetherness, and empowerment, which can increase hope for the future as well (Koenig, 2001; McGuire, 2008; Pargament et al., 2000; Tyas & Naibaho, 2020). Also, hope can impact and be impacted by mental health (Ebright & Lyon, 2002; Lee et al., 2021; Sarna et al., 1996; Wisman & Heflick, 2016). Thus, various aspects of the results were consistent with existing literature on hope.

### **Strengths and Limitations**

One major strength of this study was its use of DSG (Andrade, 2019) as a machine learning algorithm to perform Text-Mining Analyses on the *Letters from the Future*. DSG provided new and valuable insights in the area of Text-Mining Analyses by becoming aware of different words and sentiments belonging to hope or hopelessness in text according to the domains of experience framework by Halliday (2004). Secondly, the understanding of hope in a situated sample enabled research on a particular place, time, and culture.

Besides, some limitations need to be addressed. First, the sample size per group, especially for people with low personal hope and high other-focused hope, was rather small due to the especially high and low frequencies, influencing the interpretation of results (Malterud et al., 2016). Consequently, a higher amount of participation could have given more reliable frequencies (Marks et al., 2013). This means for this study that the results on differences of hope in narratives towards a post-corona future cannot be generalised, neither bold claims can be made. Furthermore, most letters were written by people with high personal and other-focused hope, which could be explained by a high degree of one-sided participation (Hammersley & Gomm, 1997). It may be the case that the one-sided participation is explained by lacking interest



of people with low personal or other-focused hope since it was a research study about hope towards the future. Secondly, since the survey only included four items, necessary determinants on hope might have been missed for this study. For example, research has shown that differences in health (Vellone et al., 2006), or perceived altruism (Slezackova & Krafft, 2016) impact hope of participants. Thirdly, the interpretation of results is subjectively skewed due to a single interpreter, decreasing reliability (Palinkas, 2014). Lastly, despite the fact that the DSG algorithm has been recalibrated several times (Andrade, 2019), some classifications of the data could be viewed critically. For example, the program categorised passive activity and active planning words both as *material doing*, making a further distinction supportive for interpretation. Furthermore, the program sometimes missed classifications or classified differently compared to the researcher. In particular, emotions were often ignored, especially when displayed as a noun instead of an adjective. Therefore, the algorithm should be further calibrated to analyse the data more thoroughly and in-depth.

### **Recommendations**

Based on the aforementioned limitations, some suggestions for further research can be provided. Firstly, different internal and external factors seem to be relevant to hopefulness. As previously conducted research showed, self-confidence, sensed meaning in life, an existing social network (Miller, 1986; Schrank et al., 2011), motivation to act (Nowotny, 1989; Snyder, 2002), or amount of perceived altruism (Slezackova & Krafft, 2016) among the participants could influence hope. In future research, the scale could be further adapted to gain more extensive insights that can be related to hope in narratives. Also, it is suggested to employ a larger sample, meaning at least more than one participants, to increase the accuracy of results by engaging further in a purposive sampling strategy (Moser & Korstjens, 2018). This means for the

current thesis that more information could be gained from this kind of letters, making this study a starting point for future research. However, valuable insights into hope in narratives could be gained from the current research results, nevertheless. Furthermore, participation bias could be reduced by animating more people to participate and by using all-inclusive wording (Silva Junior et al., 2015). Also, in reference to Hope (2016), mixing online and offline modes could increase participation. Moreover, interpretation could be done by more than one researcher to decrease subjectivity (Palinkas, 2014). Lastly, the DSG algorithm could be developed to be more specific in regard to the meaning of individual phrases in narratives related to hope or COVID-19.

## **Conclusion**

It can be concluded that hope in narratives was observable as a positive outlook on life, describing the future vividly and in detail, and mentioning concrete personal plans with family or friends. Thus, hope was displayed as a psychological resource for mental health and wellbeing, in line with a positive psychological understanding (Peterson and Seligman, 2004). The *Letters from the Future* or other forms of personal writing analysed by DSG could create valuable insights in a clinical setting. In a diagnostic process, the patient's perspective on the future in narratives could give important information on mental health, well-being, and hope, possibly influencing the treatment plan and therapeutic success. With a focus on positive psychological therapy, the *Letters from the Future* could also function as a tool for treatment by increasing awareness of current hope levels and creating a basis for working on a positive focus towards the future. In this way, the *Letters from the Future* intervention indicates a therapeutic benefit. Further, analysing different personal writings on hope through DSG could create deeper insights on the topic for later research on other populations or settings.

## References

- Aase Schaufel, M., Nordrehaug, J. E., & Malterud, K. (2011). Hope in action—facing cardiac death: a qualitative study of patients with life-threatening disease. *International journal of qualitative studies on health and well-being*, 6(1), 5917.  
<https://doi.org/10.3402/qhw.v6i1.5917>
- Anderson, R. M., Heesterbeek, H., Klinkenberg, D., & Hollingsworth, T. D. (2020). How will country-based mitigation measures influence the course of the COVID-19 epidemic? *The Lancet*, 395(10228), 931–934. [https://doi.org/10.1016/S0140-6736\(20\)30567-5](https://doi.org/10.1016/S0140-6736(20)30567-5)
- Andrade, S. B. (2019) The digital story grammar package (R package alpha version) [Computer software]. Retrieved from <https://github.com/sban/narratives/>
- Andrade, S. B., & Andersen, D. (2020). Digital story grammar: a quantitative methodology for narrative analysis. *International Journal of Social Research Methodology*, 23(4), 405-421. <https://doi.org/10.1080/13645579.2020.1723205>
- Andrade, S. B., Sools, A., & Saghai, Y. (2022). Writing styles and modes of engagement with the future. *Futures*, 141, 102986. <https://doi.org/10.1016/j.futures.2022.102986>
- Arden, M. A., & Armitage, C. J. (2008). Predicting and explaining transtheoretical model stage transitions in relation to condom-carrying behaviour. *British Journal of Health Psychology*, 13, 719-735. <https://doi.org/10.1348/135910707X249589>
- Arnaert, A., Filteau, N., & Sourial, R. (2006). Stroke patients in the acute care phase: role of hope in self-healing. *Holistic Nursing Practice*, 20(3), 137-146.

- Benzein, E., & Saveman, B. I. (1998). One step towards the understanding of hope: a concept analysis. *International journal of nursing studies*, 35(6), 322-329.  
[https://doi.org/10.1016/S0020-7489\(98\)00045-5](https://doi.org/10.1016/S0020-7489(98)00045-5)
- Bradbury, J. (2012). Narrative possibilities of the past for the future: Nostalgia and hope. *Peace and Conflict: Journal of Peace Psychology*, 18(3), 341-350.  
<https://doi.org/10.1037/a0029069>
- Bruner, J. (1987). Life as narrative. *Social Research*, 54, 11–32.
- Bruner, J. (1990). Acts of meaning. Cambridge, MA: Harvard University Press.
- Buckley, J., & Herth, K. (2004). Fostering hope in terminally ill patients. *Nursing Standard*, 19(10), 33-41.
- Chang, E. C., Kahle, E. R., Yu, E. A., Lee, J. Y., Kupfermann, Y., & Hirsch, J. K. (2013). Relations of religiosity and spirituality with depressive symptoms in primary care adults: Evidence for hope agency and pathway as mediators. *The Journal of Positive Psychology*, 8(4), 314–321.  
<https://doi.org/10.1080/17439760.2013.800905>
- Cheavens, J. S., Michael, S. T., & Snyder, C. R. (2005). The correlates of hope: Psychological and physiological benefits. In J. A. Elliott (Ed.), *Interdisciplinary perspectives on hope* (pp. 119–132). New York: Nova Science.
- Ciarrochi, J., Parker, P., Kashdan, T. B., Heaven, P. C., & Barkus, E. (2015). Hope and emotional well-being: A six-year study to distinguish antecedents, correlates,

and consequences. *The Journal of Positive Psychology*, 10(6), 520–532.

<https://doi.org/10.1080/17439760.2015.1015154>

Cook, J. (2016). Young adults' hopes for the long-term future: From re-enchantment with technology to faith in humanity. *Journal of Youth Studies*, 19(4), 517-532.

<https://doi.org/10.1080/13676261.2015.1083959>

Corner, A., Kane, G., & Owen, P. (2012). *Behaviour Change for Sustainability* (1st ed.).

Routledge. <https://doi.org/10.4324/9781351274883>

Cretney, R. M. (2017). Towards a critical geography of disaster recovery politics: Perspectives on crisis and hope. *Geography compass*, 11(1), e12302.

<https://doi.org/10.1111/gec3.12302>

Davison, S. N., & Simpson, C. (2006). Hope and advance care planning in patients with end stage renal disease: qualitative interview study. *Bmj*, 333, 886.

<https://doi.org/10.1136/bmj.38965.626250.55>

Doppelt, B. (2012). *The Power of Sustainable Thinking: How to Create a Positive Future for the Climate, the Planet, Your Organization and Your Life* (1st ed.). Routledge.

<https://doi.org/10.4324/9781849773232>

Dufault, K., & Martocchio, B. C. (1985). Symposium on compassionate care and the dying experience. Hope: its spheres and dimensions. *The Nursing Clinics of North America*, 20(2), 379-391.

- Duggleby, W., Hicks, D., Nekolaichuk, C., Holtslander, L., Williams, A., Chambers, T., & Eby, J. (2012). Hope, older adults, and chronic illness: a metasynthesis of qualitative research. *Journal of advanced nursing*, 68(6), 1211-1223.  
<https://doi.org/10.1111/j.1365-2648.2011.05919.x>
- Ebright, P. R., & Lyon, B. (2002). Understanding hope and factors that enhance hope in women with breast cancer. *Oncology nursing forum*, 29(3), 561-568.
- Elliott, J. A. (2005). *What have we done with hope? A brief history*. In J. A. Elliott (Ed.), *Interdisciplinary perspectives on hope* (pp. 3–46). Hauppauge, NY: Nova Science.
- Elliott, J. A. (2005a). *Interdisciplinary perspectives on hope*. Nova Publishers.
- Elliott, J. A., & Olver, I. N. (2007). Hope and hoping in the talk of dying cancer patients. *Social Science and Medicine*, 64(1), 138–149. <https://doi.org/10.1016/j.socscimed.2006.08.029>
- Elliott, J. A., & Olver, I. N. (2009). Hope, life and death: A qualitative analysis of dying cancer patients' talk about hope. *Death Studies*, 33(7), 609-638.  
<http://doi.org/10.1080/07481180903011982>
- Ezzy, D. (2000). Illness narratives: time, hope and HIV. *Social science & medicine*, 50(5), 605-617. [https://doi.org/10.1016/S0277-9536\(99\)00306-8](https://doi.org/10.1016/S0277-9536(99)00306-8)
- Ezzy, D., Bartos, M., de Visser, R., McDonald, K., O'Donnell, D., & Rosenthal, D. (1998). *HIV futures community report*. National Centre in HIV Social Research, La Trobe University, Melbourne.

- Farran, C. J., Wilken, C., & Popovich, J. M. (1992). Clinical assessment of hope. *Issues in Mental Health Nursing, 13*(2), 129-138. <https://doi.org/10.3109/01612849209040528>
- Feldman, R., Dagan, I., & Hirsh, H. (1998). Mining text using keyword distributions. *Journal of Intelligent Information Systems, 10*(3), 281-300.  
<https://doi.org/10.1023/A:1008623632443>
- Fredrickson, B. L. (2013). Positive emotions broaden and build. *Advances in experimental social psychology, 47*, 1-53.  
<http://dx.doi.org/10.1016/B978-0-12-407236-7.00001-2>
- Gadotti, M. (2008). What we need to learn to save the planet. *Journal of Education for Sustainable Development, 2*(1), 21-30. <https://doi.org/10.1177%2F097340820800200108>
- Gallagher, M. W., Smith, L. J., Richardson, A. L., D'Souza, J. M., & Long, L. J. (2021). Examining the longitudinal effects and potential mechanisms of hope on COVID-19 stress, anxiety, and well-being. *Cognitive Behaviour Therapy, 50*(3), 234-245.  
<https://doi.org/10.1080/16506073.2021.1877341>
- Guillaumie, L., Godin, G., Manderscheid, J., Spitz, E., & Muller, L. (2012). The impact of self-efficacy and implementation intentions-based interventions on fruit and vegetable intake among adults. *Psychology & Health, 27*, 30-50.  
<https://doi.org/10.1080/08870446.2010.541910>
- Halliday, M. A. K. (2004). *An introduction to functional grammar*. London, UK: Routledge.

- Hammersley, M., & Gomm, R. (1997). Bias in social research. *Sociological research online*, 2(1), 7-19. <https://doi.org/10.5153%2Fsro.55>
- Higgins, V., Sohaei, D., Diamandis, E. P., & Prassas, I. (2021). COVID-19: from an acute to chronic disease? Potential long-term health consequences. *Critical reviews in clinical laboratory sciences*, 58(5), 297-310. <https://doi.org/10.1080/10408363.2020.1860895>
- Hochachka, G. (2020). Unearthing insights for climate change response in the midst of the COVID-19 pandemic. *Global Sustainability*, 3. <http://doi.org/10.1017/sus.2020.27>
- Hope, J. (2016). Mixing Modes to Widen Research Participation. In: Snee, H., Hine, C., Morey, Y., Roberts, S., Watson, H. (eds) *Digital Methods for Social Science*. Palgrave Macmillan, London. [https://doi.org/10.1057/9781137453662\\_5](https://doi.org/10.1057/9781137453662_5)
- Kaplan Serin, E., & Doğan, R. (2021). The relationship between anxiety and hopelessness levels among nursing students during the COVID-19 pandemic and related factors. *OMEGA-Journal of Death and Dying*, <https://doi.org/10.1177/00302228211029144>
- Kiliç, R., Hatipoğlu, Ç. A., & Güneş, C. (2020). Quarantine and its legal dimension. *Turkish Journal of Medical Sciences*, 50(9), 544-548. <http://doi.org/10.3906/sag-2004-153>
- Klaniecki, K., Wuropulos, K., & Hager, C. P. (2016). Behaviour change for sustainable development. *Encyclopedia of Sustainability in Higher Education*, 1-10. [https://doi.org/10.1007/978-3-319-63951-2\\_161-1](https://doi.org/10.1007/978-3-319-63951-2_161-1)
- Knowles, J. R., Gray, N. S., O'Connor, C., Pink, J., Simkiss, N. J., & Snowden, R. J. (2021). The role of hope and resilience in protecting against suicidal thoughts and behaviors during



the COVID-19 pandemic. *Archives of Suicide Research*, 1-18.

<https://doi.org/10.1080/13811118.2021.1923599>

Koenig, H. G. (2001). Religion and medicine II: Religion, mental health, and related behaviors.

*The International Journal of Psychiatry in Medicine*, 31(1), 97-109.

<https://doi.org/10.2190%2FBK1B-18TR-X1NN-36GG>

Larsen, D., & Stege, R. (2010). Hope-focused practices during early psychotherapy sessions:

Part I. Implicit approaches. *Journal of Psychotherapy Integration*, 20, 271–292.

<http://doi.org/10.1037/a0020820>

Larsen, D. J., & Stege, R. (2012). Client accounts of hope in early counseling sessions: A

qualitative study. *Journal of Counseling & Development*, 90(1), 45-54.

<https://doi.org/10.1111/j.1556-6676.2012.00007.x>

Lazarus, R. S. (1999). Hope: An emotion and a vital coping resource against despair.

*Social Research*, 66, 665–669.

Lazarus, R. S. (2000). Toward better research on stress and coping. *American*

*Psychologist*, 55, 653–678.

Lee, J., Kim, Y., & Kelsey, J. P. (2021). Beyond wishful thinking during the

COVID-19 pandemic: How hope reduces the effects of death arousal on

hostility toward outgroups among conservative and liberal media users for

COVID-19 information. *Health Communication*, 1-10.

<https://doi.org/10.1080/10410236.2021.1921906>

- Lynch, W. F. (1965). *Images of hope: Imagination as the healer of the hopeless*. Baltimore, MD: Helicon Press.
- Madan, S., & Pakenham, K. I. (2014). The stress-buffering effects of hope on adjustment to multiple sclerosis. *International Journal of Behavioral Medicine*, 21(6), 877–890. <https://doi.org/10.1007/s12529-013-9384-0>
- Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample size in qualitative interview studies: guided by information power. *Qualitative health research*, 26(13), 1753-1760. <https://doi.org/10.1177%2F1049732315617444>
- Marks, P. E., Babcock, B., Cillessen, A. H., & Crick, N. R. (2013). The effects of participation rate on the internal reliability of peer nomination measures. *Social Development*, 22(3), 609-622. <https://doi.org/10.1111/j.1467-9507.2012.00661.x>
- McGuire, M. B. (2008). *Religion: The social context*. Waveland Press.
- Miller, J. F. (1986). Development of an instrument to measure hope. [Doctoral Dissertation]. University of Illinois
- Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research. Part 3: Sampling, data collection and analysis. *European journal of general practice*, 24(1), 9-18. <https://doi.org/10.1080/13814788.2017.1375091>
- Mthuli, S. A., Ruffin, F., & Singh, N. (2021). ‘Define, Explain, Justify, Apply’(DEJA): An analytic tool for guiding qualitative research sample size. *International Journal of Social Research Methodology*, 1-13. <https://doi.org/10.1080/13645579.2021.1941646>

- Nowotny, M. L. (1989). Assessment of hope in patients with cancer: development of an instrument. *Oncology nursing forum*, *16*(1), 57-61.
- Ornell, F., Schuch, J. B., Sordi, A. O., & Kessler, F. H. P. (2020). “Pandemic fear” and COVID-19: mental health burden and strategies. *Brazilian Journal of Psychiatry*, *42*, 232- 235. <https://doi.org/10.1590/1516-4446-2020-0008>
- Palinkas, L. A. (2014). Qualitative and mixed methods in mental health services and implementation research. *Journal of Clinical Child & Adolescent Psychology*, *43*(6), 851-861. <https://doi.org/10.1080/15374416.2014.910791>
- Pargament, K. I., Koenig, H. G., & Perez, L. M. (2000). The many methods of religious coping: Development and initial validation of the RCOPE. *Journal of clinical psychology*, *56*(4), 519-543. [https://doi.org/10.1002/\(SICI\)1097-4679\(200004\)56:4%3C519::AID-JCLP6%3E3.0.CO;2-1](https://doi.org/10.1002/(SICI)1097-4679(200004)56:4%3C519::AID-JCLP6%3E3.0.CO;2-1)
- Parse, R. R. (1999). *Hope: An international human becoming perspective*. Sudbury, Mass: Jones & Bartlett Learning
- Pellerin, N., & Raufaste, E. (2020). Psychological resources protect well-being during the COVID-19 pandemic: A longitudinal study during the French lockdown. *Frontiers in Psychology*, *11*, 590276. <http://doi.org/10.3389/fpsyg.2020.590276>
- Pennebaker, J. W. (2018). Expressive writing in psychological science. *Perspectives on Psychological Science*, *13*(2), 226-229. <https://doi.org/10.1177%2F1745691617707315>

- Peterson, C., & Seligman, M.E.P. (2004). *Character strengths and virtues*. Oxford University Press, 569-582.
- Polunin, N. (1991). Rays of hope for planet Earth and even its biosphere. *Environmental Conservation*, 18(3), 193-196.  
<https://doi.org/10.1017/S0376892900022050>
- Raleigh, E. H., & Boehm, S. (1994). Development of the multidimensional hope scale. *Journal of nursing measurement*, 2(2), 155-167. <http://doi.org/10.1891/1061-3749.2.2.155>
- Rand, K. L., & Cheavens, J. S. (2009). Hope theory. *Oxford handbook of positive psychology*, 2, 323-333.
- Redlich-Amirav, D., Ansell, L. J., Harrison, M., Norrena, K. L., & Armijo-Olivo, S. (2018). Psychometric properties of Hope Scales: A systematic review. *International journal of clinical practice*, 72(7), e13213. <https://doi.org/10.1111/ijcp.13213>
- Rose, S., & Sieben, N. (2017). Hope measurement. *The Oxford handbook of hope*, 83-94.
- Saghai, Y., & Sools, A. (in press). *Will the World Ever Be the Same Again? Letters from a Post-Corona Future*.
- Saricali, M., Satici, S. A., Satici, B., Gocet-Tekin, E., & Griffiths, M. D. (2020). Fear of COVID-19, mindfulness, humor, and hopelessness: a multiple mediation analysis. *International journal of mental health and addiction*, 1-14.  
<https://doi.org/10.1007/s11469-020-00419-5>

- Sarna, L., van Servellen, G., & Padilla, G. (1996). Comparison of emotional distress in men with acquired immunodeficiency syndrome and in men with cancer. *Applied Nursing Research, 9*(4), 209-212.  
[https://doi.org/10.1016/S0897-1897\(96\)80113-3](https://doi.org/10.1016/S0897-1897(96)80113-3)
- Schrank, B., Woppmann, A., Sibitz, I., & Lauber, C. (2011). Development and validation of an integrative scale to assess hope. *Health expectations, 14*(4), 417-428.  
<https://doi.org/10.1111/j.1369-7625.2010.00645.x>
- Seligman, M. (1990). *Learned optimism: How to change your mind and your life*. New York: Knopf.
- Seligman, M. E., & Csikszentmihalyi, M. (2014). Positive psychology: An introduction. In *Flow and the foundations of positive psychology* (pp. 279-298). Springer, Dordrecht.
- Silva Junior, S. H. A. D., Santos, S. M., Coeli, C. M., & Carvalho, M. S. (2015). Assessment of participation bias in cohort studies: systematic review and meta-regression analysis. *Cadernos de saude publica, 31*, 2259-2274.  
<https://doi.org/10.1590/0102-311X00133814>
- Singh, N., Hu, C., & Roehl, W. S. (2007). Text mining a decade of progress in hospitality human resource management research: Identifying emerging thematic development. *International Journal of Hospitality Management, 26*(1), 131-147.  
<https://doi.org/10.1016/j.ijhm.2005.10.002>
- Slezackova, A., & Krafft, A. (2016). Hope: A driving force of optimal human development. *Idea of excellence: Multiple perspectives, 1-12*.

- Snyder, C. R., Harris, C., Anderson, J. R., Holleran, S. A., Irving, L. M., Sigmon, S. T., ... & Harney, P. (1991). The will and the ways: development and validation of an individual-differences measure of hope. *Journal of personality and social psychology*, 60(4), 570-585. <https://psycnet.apa.org/doi/10.1037/0022-3514.60.4.570>
- Snyder, C. R. (1995). Conceptualizing, measuring, and nurturing hope. *Journal of Counseling & Development*, 73(3), 355-360. <https://doi.org/10.1002/j.1556-6676.1995.tb01764.x>
- Snyder, C. R. (2000). The past and possible futures of hope. *Journal of Social and Clinical Psychology*, 19(1), 11–28. <https://doi.org/10.1521/jscp.2000.19.1.11>
- Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological inquiry*, 13(4), 249-275. [https://doi.org/10.1207/S15327965PLI1304\\_01](https://doi.org/10.1207/S15327965PLI1304_01)
- Snyder, C. R., Rand, K. L., & Sigmon, D. R. (2002). Hope theory: A member of the positive psychology family. In C. R. Snyder & S. J. Lopez (Eds.), *Handbook of positive psychology* (pp. 257–276). Oxford University Press.
- Snyder, C.R., Lopez, S.J., & Pedrotti, J.T. (2010). *Positive psychology: The scientific and practical exploration of human strengths*. Thousand Oaks CA: Sage Publications.
- Sools, A. (2020). Back from the future: a narrative approach to study the imagination of personal futures. In *International Journal of Social Research Methodology* (Vol. 23, pp. 451–465). Routledge. <https://doi.org/10.1080/13645579.2020.1719617>.

- Sools, A.M., Tromp, T., & Mooren, J. H. (2015). Mapping letters from the future: Exploring narrative processes of imagining the future. *Journal of Health Psychology, 20*(3).  
<https://doi.org/10.1177/1359105314566607>
- Tipton, L. E. M. (2001). *A qualitative study of hope and the environment of persons living with cancer*. Austin: The University of Texas in Austin.
- Trusko, B., Rosenbloom, S. T., Montella, D., Jackson, J. C., Fitzhenry, F., Brown, S. H., . . . Speroff, T. (2010). Are posttraumatic stress disorder mental health terms found in SNOMED-CT medical terminology? *Journal of Traumatic Stress, 23*, 794-801.  
<https://doi.org/10.1002/jts.20591>
- Trzebiński, J., Cabański, M., & Czarnecka, J. Z. (2020). Reaction to the COVID-19 pandemic: The influence of meaning in life, life satisfaction, and assumptions on world orderliness and positivity. *Journal of Loss and Trauma, 25*(6-7), 544-557.  
<https://doi.org/10.1080/15325024.2020.1765098>
- Tyas, E. H., & Naibaho, L. (2020). A harmony among of religious community is required amidst the covid-19 pandemic. *International Journal of Research-GRANTHAALAYAH, 8*(9), 422-428. <https://doi.org/10.29121/granthaalayah.v8.i9.2020.1583>
- Vellone, E., Rega, M. L., Galletti, C., & Cohen, M. Z. (2006). Hope and related variables in Italian cancer patients. *Cancer nursing, 29*(5), 356-366.
- Walsh, F. (2020). Loss and resilience in the time of COVID-19: Meaning making, hope, and transcendence. *Family process, 59*(3), 898-911. <https://doi.org/10.1111/famp.12588>

- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International journal of environmental research and public health*, *17*(5), 1729
- Wilder-Smith, A., Chiew, C. J., & Lee, V. J. (2020). Can we contain the COVID-19 outbreak with the same measures as for SARS? *The Lancet Infectious Diseases*, *20*(5), 102–107. [https://doi.org/10.1016/S1473-3099\(20\)30129-8](https://doi.org/10.1016/S1473-3099(20)30129-8).
- Webb, T. L., Sheeran, P., & Luszczynska, A. (2009). Planning to break unwanted habits: Habit strength moderates implementation intention effects on behaviour change. *British Journal of Health Psychology*, *48*, 507-523. <https://doi.org/10.1348/014466608X370591>
- Wisman, A., & Heflick, N. A. (2016). Hopelessly mortal: The role of mortality salience, immortality and trait self-esteem in personal hope. *Cognition and emotion*, *30*(5), 868-889. <https://doi.org/10.1080/02699931.2015.1031643>
- Yıldırım, M., & Arslan, G. (2020). Exploring the associations between resilience, dispositional hope, preventive behaviours, subjective well-being, and psychological health among adults during early stage of COVID-19. *Current psychology*, *41*, 5712–5722. <https://doi.org/10.1007/s12144-020-01177-2>



## Appendix A

### Instructions about the *Letters from the Future*

(Sools, 2020)

#### Box 1. Instructions for writing a letter from the future.

In three variations: written, audio and focus group

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##### 1. Instruction for pencil-paper and online data collection

The following suggestions are hints which give you an idea about what your own letter from the future might look like.

Feel free to use these instructions as a basis for writing the letter your own way. Don't worry about spelling, sentence structure, or grammar but simply write anything that comes to your mind. Keep in mind that it is a letter that is written backwards from a desired future to the present, so you imagine *a desired future situation as if already realized*. Feel free to use your full imagination: Remember that it is about the future which has not occurred yet. Consider it an opportunity to think about possibilities that could happen.

##### Where and When?

Imagine that you are travelling in a time machine. Imagine as vividly as possible where and when you are in the future.

When. How far into the future do you travel? This may be an hour, a day, a week, years, decades or even millennia later.

Where. Where you are travelling to and what does the environment looks like? (e.g. a place, a country; in space; at home or your garden; in the city or in nature; a crowded or a deserted place; a colorful or a dull place; a noisy or quiet place; etc.) You may also think about what you look like yourself, what you are wearing, who else is present.

##### What?

Future image. Imagine that a *desired* future has become true. This could entail the fulfillment of wishes, positive changes, dreams or that you accomplished ways of coping with a difficult situation. Tell your story of a *specific day*, a *specific moment* or a *specific event* in that it comes clear how you have solved a problem or have found a good way of dealing with it.

Trajectory. Describe the *path* towards this future, how it came into being and how you look back on your life.

##### To Whom?

You decide to whom you want to write the letter and give a *message* to this person in the present.

To your present self

- To another person (for example: your child or grandchild, friends, the next generation, etc.)

Guideline for the duration of writing the letter is about 20 minutes of writing or a maximum of 400 words/ 1 A4 page.

2. Audio instruction with guided meditation emphasizing sensory detail see supplemental material

##### 3. FutureNowExperience focus group

This focus group methodology generally adheres to the following format: after a guided meditation letters are first written individually, then read aloud and consequently reflected on in a group discussion (Sools, Mooren, & Tromp, 2013). The letter instruction and reflective questions are adapted to the purpose and composition of the focus group, but participants are always given the opportunity to share their experiences of writing, reading and listening. Participants are given agency on what and when to share (or not).

## Appendix B

### Hopefulness Scale

(Saghai & Sools, 2020 in press)

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Very	Fearful	Neutral	Hopeful	Very
fearful				hopeful

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My outlook on my personal future life is

My outlook on the future of the country  
where I reside is

My outlook on the future of humanity is

My outlook on the future of the planet is

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