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To Be and When to Be: How Far into the Future do People Project their Self-Images?

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Abstract

Little research has been conducted as to how far older and younger adults extend their self-images into the future, that is, their imagined future selves, such as imagined future family roles, future hobbies, or future traits. According to one line of research, we should expect aging to be associated with changes in future time perspective, such that older adults perceive their futures as more limited and less central compared with younger adults. According to another view, the distance with which individuals project themselves into the future may not simply be a function of age-related changes in perspectives, but may be formed by age-independent cognitive and motivational constraints. To address these questions, this study examined the temporal distribution of future self-images generated by a large representative sample of Danish adults from 18 to 70 years of age, using the "I will be" task (Rathbone, Conway, & Moulin, 2011). The results showed that participants concurred on a surprisingly short future horizon, dating their future self-images within the first five to ten years from their present, irrespective of any demographic factor. The findings also revealed that all age-groups generated considerably more positive future images and that these were closer to their present whereas negative ones were pushed further into their future. The results suggest motivational and cognitive constraints producing uniformly short future horizons of the self-projections across all age-groups.

Keywords: time perception, future self, emotion regulation, self-enhancement, aging, future thinking

To Be and When to Be: How Far into the Future do People Project their Self-Images?

"It is always wise to look ahead, but difficult to look further than you can see… The thing is, you can't see the whole path anyway and it will shift and reveal itself along the way." (Churchill, W. 1874 – 1965)

People often conceive of life as being a journey (Lakoff & Johnson, 1980), where the distance left to travel decreases with increasing age. Thus, the past lies behind us and the future is the time that lies in front of us, the path to be traveled. Accordingly, while younger adults have a wider life span to draw on when it comes to thinking about their future, older adults' thoughts about the future would be constrained by a much shorter path (e.g., Lang & Carstensen, 2002). Alternatively, it might be the case that the distance with which individuals project themselves into the future is not simply a function of age-related changes in time perspective. Instead, how far people project their selves into the future may be constrained by age-independent motivational factors (Alicke & Sedikides, 2009), or general cognitive constrains (Trope & Liberman, 2003). Using a representative sample of the Danish population covering the adult life span, the present study examines, in a life span developmental perspective, how many years into the future adult participants project their future self-images.

Reminiscent of similar age-independent constraints in other cognitive and motivational domains (e.g., Breland & Breland, 1961; Miller, 1956), a regularly short time perspective into the personal future might be a rather natural characteristic of how people envision their future regardless of age. For example, temporal construal theory (Trope & Liberman, 2003) proposes that distant future experiences are harder to envisage since ordinary low-level information

regarding them are unreliable or even unavailable. One can then think about the distant future in broad terms of general knowledge (e.g., having a child), but to think about the future in a subordinate goals manner (e.g., buying diapers), one needs to get closer in time to the experience in query (Kivetz & Tyler, 2007). Similarly, temporal self-appraisal theory (Wilson & Ross, 2001) suggests that people can maintain a favorable self-regard by disparaging their distant and complimenting their recent past or future. There is evidence that people predict and evaluate more favorable personal qualities when thinking about closer, rather than distant, future times (Regan, Snyder, & Kassin, 1995; Wilson, Buehler, Lawford, Schmidt, & Yong, 2012).

In a different line of work, however, research on aging and emotion regulation has shown negative correlations between future time perspective and age (Fung & Isaacowitz, 2016; Lang & Carstensen, 2002). According to these findings, young adults perceive their future as open-ended whereas older adults see it as limited, leading to a difference on the selection of social goals in congruence with one's construal of future time (Carstensen, Fung, & Charles, 2003; Rutt & Löckenhoff, 2016), and prompting adjustment of goal orientation to cope with age-related biological and cognitive changes (Ebner, Freund, & Baltes, 2006; Freund & Ebner, 2005; Smith & Freund, 2002). These findings have been based mostly on psychometric measures, probing subjectively rated time perspective in older and younger adults (e.g., Hooker, 1992). However, convergent findings are reported in the literature on episodic future thinking, where participants are asked to imagine concrete events that are likely to take place in their personal future. Spreng and Levine (2006) found that as people age, memories of events extend further back in time, whereas the events they imagine in the future draw closer to the present. Spreng and Levine (2006) showed that young adults report possible autobiographical future events further in time (on average 2.6 years into their future) in comparison with older adults who provide future

events closer to their present (on average 0.3 years into their future). Still, it is not clear whether

these results will generalize to the literature on future self-images.

Contrary to an imagined or remembered event, the concept people have about themselves

is not a single construct or point in time. It is instead based upon a number of diverse self-images

that enable them to describe the different elements of their identity and different roles and to

decide which are important to the definition of their own self (e.g., 'I am a father', 'I am an

architect'; see Kuhn & McPartland, 1954; Linville, 1985; Markus & Wurf, 1987). The study of

self-images in a developmental perspective is relevant as it is probable that future self-images, or

possible selves (Markus & Nurius, 1986), are more central to the person's identity than

imagination of discrete events, as the former help to unify the past, present, and future sense of

self in a broader way than that entailed by thoughts of a single future event (D'Argembeau,

Lardi, & Van der Linden, 2012; Schacter, Addis, & Buckner, 2007; Strahan & Wilson, 2006).

According to Szpunar, Spreng and Schacter (2014), future self-images represent a hybrid form of

episodic and semantic autobiographical future thinking.

As possible future self-representations, future self-images encompass both the hope-for

and feared future self-representations that guide behavior at present (Frazier & Hooker, 2006;

Markus & Nurius, 1986). Future self-images can include visions of negative, but realistic, future

selves (e.g., "I will be alone") as well as positive future selves (e.g., "I will be healthy"). This is

important, as research has shown that thinking about what one will become in the near future can

help to adjust present behavior in a goal-oriented manner (Hoppmann, Gerstorf, Smith, &

Klumb, 2007; Oyserman, Bybee, Terry, & Hart-Johnson, 2004) as psychologically close future

self-images are perceived as part of the current identity. Thus, whereas negative future self-

images might promote disengagement and disorganize behavior (Hooker, 1992; Hoppmann et

al., 2007), positive self-images might stimulate action and even serve a self-enhancement function (Strahan & Wilson, 2006; Wilson et al., 2012).

Surprisingly little research has examined how the distance with which people perceive their future self-images may be affected by the person's current age (and other demographics; Hoyle & Sherrill, 2006) or by the valence of such future self-images while using a free generating task. Instead, researchers tend to study possible selves by prompting the generation of future selves in specific domains (e.g., Oyserman et al., 2004), by asking participants specifically for either positive or negative future selves (e.g., Cross & Markus, 1991) or by manipulating the point in the future when their self-images will take place (e.g., Wilson et al., 2012; see Dunkel & Kerpelman, 2006 for a review).

One exception is Chessell, Rathbone, Souchay, Charlesworth and Moulin (2014), who asked 21 college students and 24 community dwelling older adults to freely generate future self-images in the form of "I will be _____" statements (Rathbone et al., 2011), and to give an estimated date of when their generated future self-images were most likely to occur. Their findings were similar to those in episodic future thinking in that older adults dated future self-images closer to the present (on average 2.60 years into the future) compared with younger adults who dated future self-images further into the future (on average 6.35 years into the future). However, as acknowledged by the authors, these findings should be considered with some caution, since it is not clear whether the younger and older participants were comparable in terms of their level of socio-economic status (SES) and education. In addition, the small group sizes may limit the generalizability of these findings.

In summary, research on age differences in how people envision specific future self-images across the life span is scarce. Taken together, some previous research suggests that

younger adults tend to imagine their future further in time than older adults, which would make sense in the light of their expectancies of more years left to live. Still, at the same time, the average years into their future at which young adults typically report their future self-images (roughly 7 years; see Rathbone, Salgado, Akan, Havelka, & Berntsen, 2016) is not representative of the long life span that young adults typically have ahead. This closeness to the present could reflect cognitive and/or emotional constraints on the construction of future self-images that may operate independently of age.

Given the nature of the samples in previous work on future self-images in different age-groups comparing college students with older adults from the general population, and often neglecting middle-age adults (e.g., Rathbone et al., 2011), it is unclear whether the findings reflect age effects or cognitive constrains and motivational factors operating independently of age. Using a large, representative sample of adults covering the entire adult life span from 18 to 70 years of age, and controlling for demographic factors, the goal of the present study was to examine the effects of age on the temporal distribution of future self-images. If age is a determinant factor, we should expect a decline in temporal distance of the future self-images with increasing age of the participants, with younger individuals showing temporally more distant future self-images than older individuals. Conversely, if the way that people construct their future self-images is not simply constrained by age but primarily by age-independent mechanisms, such as cognitive constrains or motivational factors favoring temporally close events, we should expect relatively uniform temporal horizons for imagined future self-images across all age-groups. Lastly, we might expect positive future self-images to be closer to the participants' present, regardless of their age.

Method

Participants

Participants were 1023 Danes recruited by TNS Gallup. The sample was representative of the Danish population between the ages of 18 to 69 and stratified by age, gender, education, and region. The participants were recruited by TNS Gallup through its participant panel and answered the survey online; response rate was 77%. Twenty-five participants were excluded from the study, as their answers indicated that they did not follow the instructions or understand the task (e.g., answering "I do not know" to all the questions). The final sample consisted of 998 participants distributed in 5 age-groups according to their decade (See Table 1 for demographics and distribution). The study received ethical approval from the TNS Gallup Ethics Review Board.

Materials

To examine the future self-images of our participants, we used the *I Will Be Task* (Chessell et al., 2014; Kuhn & McPartland, 1954; Rathbone et al., 2011, 2016), which is a modified version of the *I Am Task.* The *I Will Be Task* is a projective task, it aims to gather participants' future cognitions of themselves (self-images) by asking them to imagine what they might become in the future. Participants are asked to generate future images of themselves in the form of 'I will be ____' statements (e.g., I will be… "a father"). They are also requested to rate each image they generate on a scale of 1–10 (1 minimum; 10 maximum) for vividness, emotional intensity, and positivity (1 as "really negative" and 10 as 'really positive' for this last one). Lastly, participants are asked to provide an estimated age of when their generated future self-images might occur.

Procedure

After providing informed consent, participants were asked to provide their gender and current age. Demographic information regarding participants' education, socio-economic status (SES), and region was provided by TNS Gallup as it was already part of the information for ensuring the representativeness of the sample. All participants completed a questionnaire online, without time contains, that consisted of the *I Will Be Task*. Participants were asked to imagine what they might become in the future and to produce up to eight "I will be ____" statements that might describe their identities in the future, but did not describe them at the present time. They were also told that these statements might refer to personality traits (e.g., I will be… "truthful"), careers (e.g., I will be… "a doctor"), hobbies (e.g., I will be… "a skater"), family roles (e.g., I will be… "a husband"), or anything else that they felt might define their identities in the future. After participants had generated their set of statements, they were re-presented with each statement (one at a time), and asked to think about themselves in the future acting in accordance with the statement provided. They were instructed to hold each future self-image in mind while they completed rating scales for vividness, positivity, and emotional intensity. After completing the rating scales for each future self-image, participants were also asked to provide the age in which they thought their future self-images might happen. Participants who successfully completed the task received the opportunity to be part of a raffle with TNS Gallup where they could win a voucher certificate as a compensation for their time.

Results

All the participants generated a total of 4501 future self-images (range by subject 1 – 8, $M = 4.51$, range 4.10 – 4.92; see Table 2 for more details). Since we were interested in the temporal distribution of the self-images, results are analyzed in a life span developmental

perspective (see below for details). Typical future self-images included statements like "I will be a dad", "I will be financially stable" or, "I will be healthy".

Life span distribution

Participants were asked to provide an estimated age in years for when they thought their future self-image might occur. The estimated ages of all the future self-images were averaged for each participant. Table 2 contains the mean ages of participants future self-images according to age-group. For all groups, mean ages of the participants' future self-images were in the first years of their immediate next decade. Figure 1 shows the life span distribution of all future self-images generated according to age-group. As the figure illustrates, all self-images distributed according to age-groups presented a similar pattern. It also demonstrates that participants tended to date their future self-images as taking place in average within the next 10 years, rarely dating them at later points in their life span. Both the mean ages of future self-images and their life span distribution show a short temporal perspective into the future.

Distance from present

We conducted similar analyses based on distance from present, calculated as the age of future self-image minus the participant's current age. For example, if a participant aged 25 generated a future self-image that might occur at age 33, the distance from present would be 8 years. The average distance in years between the age of each participant and all their future self-images was calculated as such. Analyses of these data showed that participants projected their self-images on average 6.25 years (95% CI [5.90, 6.60]) into the future. Table 2 shows the mean distances for each age-group. An analysis of variance (ANOVA) revealed a small, but significant, main effect of age-group, $F (4, 993) = 5.06$, $p < 0.001$, $\omega = .13$. This effect reflected that participants in their 40s had a significantly longer temporal perspective into the future

compared to participants in their 30s, 50s, and 60s (all ps < .05). No other differences among groups were found. In addition, there were significant linear, $F (1, 993) = 4.46, p = 0.035, \omega = .06$, and quadratic trends, $F (1, 993) = 6.16, p = 0.013, \omega = .07$, indicating that distance from present increases through participants in their 30s to those in their 40s, but decreases in the following age-groups (see Table 2).

No age-group dated their future self-images further than 7.52 years on average into the future (i.e., participants in their 40s, see Table 2). Thus, participants concurred on a relatively short future horizon, irrespective of their current age. Figure 2 shows the distribution of all future self-images generated by the participants in each age-group and according to their distance from present. The figure illustrates that the distributions of the different age-groups are highly overlapping, and that the majority of selves are dated within the first five to ten years from the present, across all age-groups.

Distance from present and demographics

To ensure the representativeness and stratification of the sample, participants were recruited through the TNS Gallup participants' panel considering their gender, education, and SES. Participants were categorized in 2 groups according to their gender; into 5 groups of education according to the highest level of schooling they had completed and; into 3 SES-groups (see Table 3 for details). Accordingly, and to examine any possible effect of these demographic factors on the distance into the future with which participants projected their future self-images, gender, education, and SES of the participants were included as separate factors in a series of analyses of variance (ANOVA), with distance from present as the dependent variable.

Results of these analyses revealed no significant effect of gender ($t (966.13) = 1.80, p = .072, r = .06$) or of SES ($F (3, 994) = 0.03, p = .993, \omega = .05$) on distance from present. However,

there was a small, but significant, main effect of Education (F (4, 993) = 2.52, p = .040, ω = .06). Tukey post-hoc analyses revealed that participants with Elementary School as their highest education degree had a significantly longer perspective into the future in comparison to those with Short or Medium-length professional degrees ($p < .05$). No other significant differences were found.

Largely, the analyses showed that, out of these three demographic factors, only the education level of the participants affected the distance of future self-images, still no education group dated their future self-images further than 7.03 years on average into the future (see Table 3). Altogether, the results showed that regardless of the way distance from present was analyzed (i.e., by age, gender, SES, and education), none of the emergent groups dated their future self-images further than 10 years on average from present. Thus, the short temporal horizon across age-groups was highly robust when analyzed with regard to other demographic factors.

Distance from present and emotional valence

In order to explore possible motivational mechanisms underlying the short temporal perspective, subjective ratings of emotional valence were examined. All the future self-images generated by the participants were then distributed into three different categories according to their emotional valence ratings; negative (from 1 to 4), neutral (from 5 to 6), and positive (from 7 to 10). A first inspection of these data shows a highly pronounced preference for the generation of positive future self-images as, 3838 (85%) of the total amount of future self-images generated were positive, 440 (10%) were neutral, and only 223 (5%) future self-images were negative. This pattern was consistent across age-groups (see Figure 3).

Examination of the distance from present according to valence category showed that positive future self-images were dated to occur on average 6.55 years from present (CI [6.12,

6.59]), neutral self-images 6.95 years from present (CI [6.34, 7.57]), and negative future self-images 9.15 years from present (CI [7.80, 10.50]). An analysis of variance was conducted on distance from present with valence categories as the independent variable. This analysis revealed a main effect of emotional valence, $F(2, 4498) = 15.20$, $p < .001$, $\omega = .08$; Tukey post-hoc analyses demonstrated that participants dated negative future self-images to occur significantly more distant from present than positive and neutral ones (all ps < .05), whereas there was no difference between these last two categories of self-images ($p > .05$; see Figure 4). The preference for negative self-images to be dated further into the future compared to positive and neutral ones was consistent across age-groups (all ps <. 001), with the exception of participants in their 50's who dated both to occur equally close in time.

To control for a possible confound of emotional intensity and vividness with the effect of valance, as both correlated significantly with it (both rs (4501) < .59, ps < .001); and also, to control for the fact that the 4501 future self-images generated were clustered around 998 participants, a three-step hierarchical regression analysis was carried on with distance from present as the dependent variable. To control for variance among participants, 997 dummy-coded variables were created and treated as independent variables in the regression alongside vividness and emotional intensity. This method ensures that each future self-image is strictly treated as an independent observation as it partials out participant variance (J. Cohen & Cohen, 1983; Thompson, Skowronski, Larsen, & Betz, 1996). Valence group was entered in Step 1, whereas emotional intensity and vividness ratings were entered in Step 2. The dummy-coded variable were entered in Step 3 (see Berntsen & Hall, 2004 for a similar procedure).

The final model was significant by explaining 51% of the variance in distance from present ($F(997, 3500) = 3.75$, $R = .72$, $p < .001$). Step 1 ($F(1, 4499) = 27.15$, $\Delta R = .01$, $p <$

.001) confirmed that valence group significantly predicted distance from present ($\beta = -.08$, $t = -5.21$, $p < .001$). Step 2 showed that vividness and emotional intensity did not make any significant contribution to the model ($\Delta R^2 = .00$, $p = .691$), and that the predictive value of valence group prevailed after controlling for these ($\beta = -.07$, $t = -4.30$, $p < .001$). Lastly, Step 3 indicated that, when controlling for individual differences ($\Delta R^2 = .51$, $p < .001$) the effect of valence group remained ($\beta = -.06$, $t = -3.40$, $p = .001$), emotional intensity remained non-significant ($\beta = .01$, $t = 0.63$, $p > .250$) and, vividness becomes significant ($\beta = -.06$, $t = -3.14$, $p = .002$), but with a negative effect, showing that distant self-images tend to be less vivid.[1]

Discussion

How far do people extend their selves into the future? Our results revealed that participants concurred on a rather short future horizon, dating their future self-images within the first five to ten years from their present, irrespective of any demographic factor (see Table 2 and 3). This may be seen as especially puzzling in relation to younger adults, whose futures would be expected to extend over several decades.

At face value this may be seen in contrast with multiple studies using psychometric measures that have demonstrated that future time perspective is negatively associated with age, in that older adults perceive their future as more limited and as less focal compared with younger adults (Fung & Isaacowitz, 2016; Lang & Carstensen, 2002). Similar findings have been reported in the field of episodic future thinking, where older adults have been shown to produce imagined future events dated closer to the present (Spreng & Levine, 2006).

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[1] Given the size of our sample, and following Cohen (1994), it was possible for us to try to replicate our own results by randomly splitting our data in 2 equivalent subsamples, and examining whether the effects found here replicate on both halves. The main results described in this section were replicated on both halves of the data and are presented in the supplemental material.

However, the present findings do not necessarily contradict these results for episodic future projections. Rather, by using a different non-episodic future orientation task in a large stratified sample, the present study showed that age-related differences in time perspective are not always present. These divergent findings are in line with research suggesting that the perception of time is malleable and dynamic. Zimbardo and Boyd (1999) suggest that our perception of time depends on task features, situational considerations, and personal resources rather than fixed characteristics of a particular time perspective direction. Consistent with this view, it has been shown that young adults can perceive their future as restrictive and older adults can see it as open-ended (Carstensen, Isaacowitz, & Charles, 1999). Thus, it might be the case that, due to the more complex nature of future self-images (Frazier & Hooker, 2006; Markus & Nurius, 1986; Smith & Freund, 2002), they all fall into the restricted future time perspective category, where specific contextual details are required in order to envisage future self-images; hence, the short future horizon regardless of age.

Consequently, it might be the case that near-future self-images are reported more frequently using a free generative task and regardless of the participants' age, as their subordinate, contextual, and incidental features have higher cognitive availability in comparison with the features of far-future self-images (Wakslak, Nussbaum, Liberman, & Trope, 2008). This idea seems plausible since it is likely that some future self-images, especially those closer to the present, might be nurtured from already present features of current self-images (e.g., "I am student" and "I will be a graduate"). Furthermore, given that future self-images are thought to have an adaptive emotional and behavioral self-regulatory function in the current sense of self (Hoppmann et al., 2007; Hoyle & Sherrill, 2006; Wilson et al., 2012), it is likely that, in order to guide behavior, future self-images need to be in close-timed interaction with current self-images

for the emergence of goal-directed behavior (Oyserman, Bybee, & Terry, 2006; Peetz, Wilson, & Strahan, 2009; Strahan & Wilson, 2006).

Analyses of the future self-images according to their emotional valence revealed a strong predilection for participants to generate positive future self-images. This effect was also independent of age (See Figure 3). These results are in line with the self-enhancement literature (Alicke & Sedikides, 2009), which postulates that future self-images are typically viewed favorably and optimistically. Contrary to the belief that thoughts about the future in older adults may be outshined by a focus on the present and by closeness of death, our results demonstrated that older adults still think about their future in a positive manner. It is likely that, older adults still might benefit from such positive future thinking by striving toward new positive self-images and avoiding particular negative ones; similar to younger adults but in different domains of their lives and in accordance to their age-related physical and mental capabilities (see Smith & Freund, 2002).

Supporting this idea, the findings also revealed that positive and neutral future self-images are drawn closer to the present in comparison to negative ones. This is crucial, as, although close-time interaction with present is important to incentive goal-directed actions, closer future self-images also need to be appealing to motivate engagement and to fulfill an emotional self-regulatory purpose. According to temporal self-appraisal theory (Wilson & Ross, 2001), people can maintain their typically favorable self-regard by disparaging their distant and complimenting their recent past/future self-images. In view of that, a positive bias might drive the short distancing effect across all ages.

Together, our findings have relevant implications for research in other areas of psychology, such as clinical areas working with different disorders (e.g., anxiety disorders,

PTSD, depression, etc.) in which the present sense of self is threatened by thoughts of negative

close future scenarios. Likely, patients may benefit by working on expanding their future

horizons to include thoughts of future cognitions that are positive, and which are outshined by

the negative ones. For example, patients with suicidal ideation often concretely imagine

themselves in relation to their suicide, such as imagining themselves as dead (e.g., Crane, Shah,

Barnhofer, & Holmes, 2012; Holmes, Crane, Fennell, & Williams, 2007; Ng, Di Simplicio,

McManus, Kennerley, & Holmes, 2016). These images often are vivid and persistent and seem

to correspond to a future self-image of being dead. In such and similar cases psychologists could

develop techniques in which patients work on re-appraising the near future to include positive

images that motivate both engagement and approach towards more constructive goals. Moreover,

our results might elucidate ways of working with near positive future self-images aid to serve

defense mechanisms against fear of death in the elderly. Finally, and beyond psychology, our

findings have relevance for disciplines dealing with models of decision making and planning.

Areas such as sustainability, responsible consumption, and political behavior, where motivation,

goal pursuit, approach, and timely action-taking play a central role are likely to benefit from

further developments of this line of research.

Our work has also some limitations. First, our conclusions are based on null findings.

Nonetheless, we used a large, stratified and representative sample of the Danish population

which provides sufficient power to trust the validity and accuracy of our findings (see also the

supplemental material). Second, our age range in the sample does not include very old adults

(e.g., above 70 years of age). It might be the case that by including participants in later stages of

their lives we might had found different patterns of results. It is possible that in very old adults

thoughts of their future are not only constrained by cognitive and motivational factors, but more

so by age related changes in their health profile, life expectancy, locus of control, etc. (e.g., Frazier, Hooker, Johnson, & Kaus, 2000), likely causing an even shorter prospection into their future. Examining future self-images with free generative tasks in very old age is an important question for future research. Third, and relatedly, we did not control for physical health profile of our participants. As a poor physical health, or a better than average health profile, can certainly alter the time horizon into the future, future research should examine the role of health profile in how far into the future adults project their self-images while using free generative tasks with opened-ended life span horizons.

Conclusion

The present study examined, in a life span developmental perspective, how many years into the future adults projected their future self-images. We showed that participants concurred on a short future horizon, dating their future self-images within the first five to ten years from their present, irrespective of any demographic factor. Our results also revealed that participants in all age-groups generated significantly more positive future images compared to negative ones. Also, positive self-images were dated to occur closer to the participants' present whereas negative ones were assed to happen further into their future. These findings suggest that a short perspective into the future likely reflects cognitive and/or motivational constrains that operate independently of age. Together, our findings are consistent with a functional perspective, where it seems beneficial for all age-groups to have a rather uniform, short and desirable future time perspective when imagining future self-images. A near future furnished with positive self-images may boost self-esteem and motivate approach and goal pursuit.

Author Contributions

"All authors contributed to the study design. Sinue Salgado performed the data analysis and interpretation under the supervision of Dorthe Berntsen. S. Salgado drafted the manuscript, and D. Berntsen provided critical revisions. All authors approved the final version of the manuscript for submission."

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Table 1

Distribution and Demographics of the Final Sample across Age-groups

Participants	n	(%)	Age		Women	
			M	95% CI	Count	(%)
18-29 years	236	24	25.37	[25.03, 25.72]	118	50
30-39 years	176	18	35.27	[34.84, 35.69]	94	53
40-49 years	210	21	45.19	[44.81, 45.57]	103	49
50-59 years	189	19	54.74	[54.32, 55.15]	94	50
60-69 years	187	19	64.94	[64.54, 65.33]	96	51
Total	998	100	44.26	[43.37, 45.16]	505	51

Table 2

Means and 95% CI of Participants' Number of Future Self-Images, Ages for Future Self-Images

and their Distance from Present according to Age-Group

	No. of Future self-images		Age of future self-image		Distance from present	
	M	CI	*M*	CI	*M*	CI
18-29 years	4.92	[4.64, 5.19]	31.89	[31.25, 32.54]	6.52	[5.92, 7.12]
30-39 years	4.10	[3.76, 4.44]	41.14	[40.26, 42.03]	5.88	[5.08, 6.67]
40-49 years	4.29	[3.96, 4.62]	52.71	[51.73, 53.69]	7.52	[6.60, 8.45]
50-59 years	4.28	[3.91, 4.64]	60.65	[59.88, 61.43]	5.92	[5.19, 6.65]
60-69 years	4.87	[4.49, 5.25]	70.10	[69.18, 71.01]	5.16	[4.36, 5.96]

Table 3

Means and 95% Confidence Intervals of Distance from Present of Participants' Future Self-

Images according to Gender, Socio-Economic Status and Education

Demographic Factor	*M*	CI
Gender		
Men	6.57	[6.04, 7.10]
Women	5.93	[5.48, 6.38]
Socio-economic Status		
High	6.17	[5.51, 6.83]
Medium	6.26	[5.66, 6.86]
Low	6.32	[5.65, 6.98]
Not Specified	6.22	[5.18, 7.25]
Education		
Elementary School	7.03	[6.24, 7.82]
High School	6.27	[5.35, 7.20]
Technical education	6.11	[5.49, 6.73]
Short or Medium-length professional degrees	5.41	[4.78, 6.05]
Graduate studies	6.10	[5.27, 6.94]

Figure 1

Figure 1. Life Span Distribution of Future Self-Images according to Age-Group.
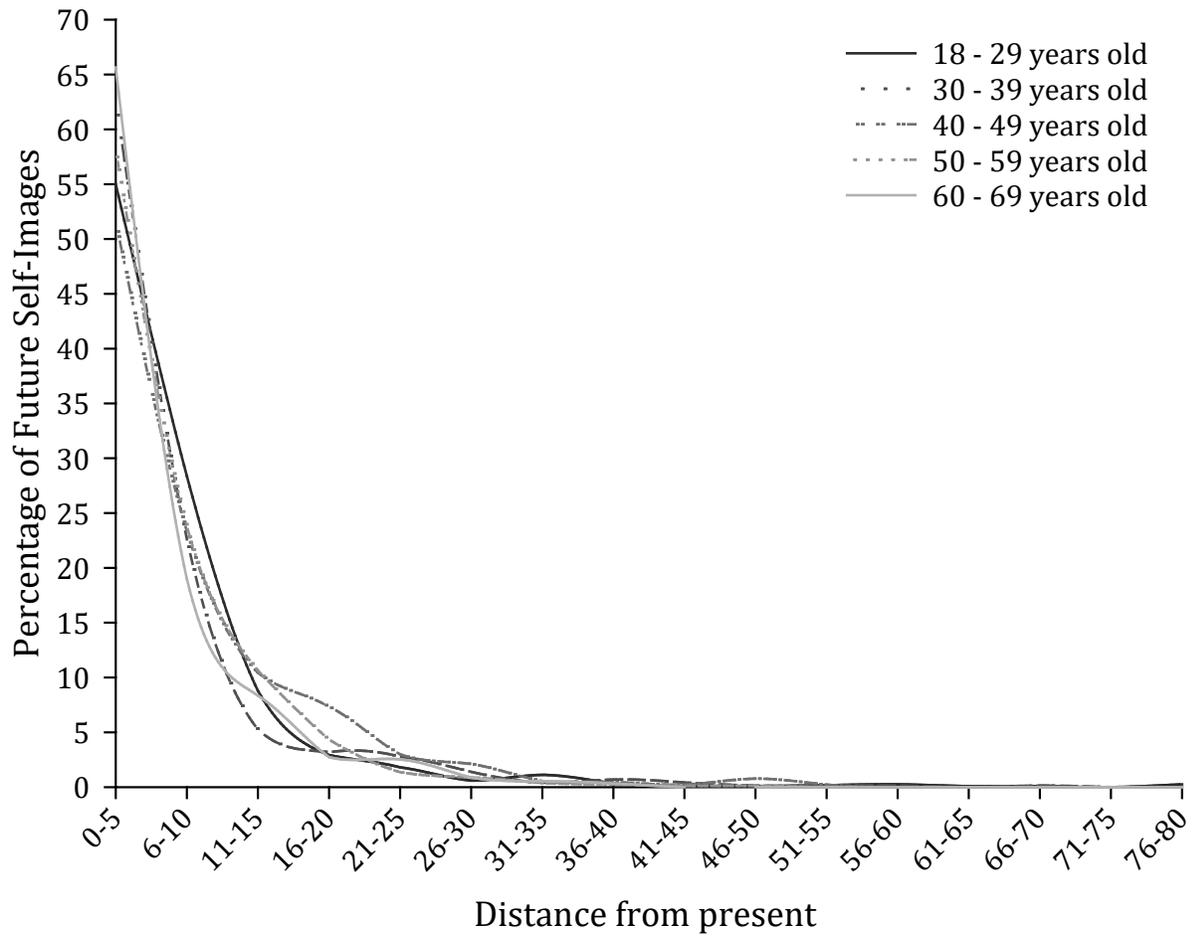
Figure 2

Figure 2. Distribution of all Self-Images according to their Distance from Present for each Age-Group.
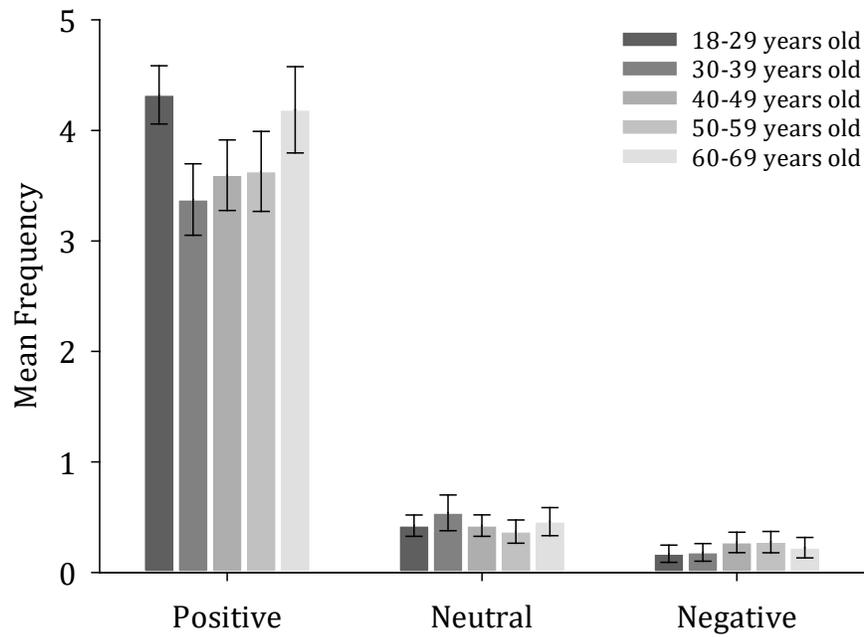
Figure 3

Figure 3. Mean of Frequency of Future Self-Images in Function of Valence Categories; error

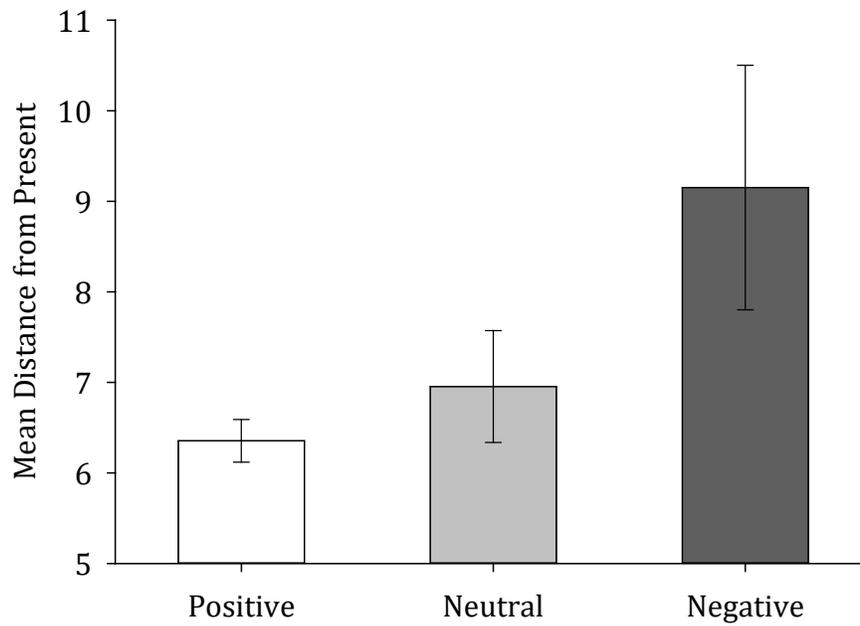bars represent 95% Confidential Intervals.

Figure 4.

Figure 4. Mean of Distance from Present in Function of Valence Categories; error bars represent

95% Confidential Intervals.