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## Individual approaches to futures thinking and decision making

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### ABSTRACT

This paper presents results of a second international web-based survey designed to gather data about how individuals approach thinking about their futures and making decisions regarding their futures. Five hundred and five respondents from 38 countries participated in the survey. Similar to the first survey, the sample has gender, age and religious diversity but is not representative with respect to education, income and race/ethnicity. The results suggest that the external environment provides a great deal of stimuli for people to think about the future (e.g., special occasions like New Years day, birthdays, and funerals). Individuals tend to think about the future more in the morning, and just before bed. Overall, most respondents experience happiness, confidence, and lightness when thinking about the future. Respondents employ many different approaches to thinking about the future, such as relying on personal past experiences, imagining future situations, and relying on their personal intuitions. Most respondents do not pattern their futures decision making on decisions made by others or on tradition. Most respondents believe that their thinking about the future is very worthwhile; most develop plans and take decisive action as a result of their efforts. About three quarters of the respondents report that they are able to predict their personal futures at least one-half of the time. Most respondents face few barriers to thinking about the future, although many reported it would be nice to have more energy, be able to concentrate better, and be able to better organize their thoughts. Females report that thinking about the future is a more emotional experience than it is for males. Males, on the other hand, have more confidence in their futures-oriented decision making abilities. Age plays a big part in how individuals relate to and think about the future. Younger respondents think more about the future more times during the day and find thinking about the future more fearful and anxious. They also pattern their decisions more on those made by others and older individuals. Older respondents tend to rely a great deal upon their lifetime of experiences and worry less about the future. Middle-aged respondents report worrying more about financial and career issues and report that thinking about the future can be emotionally draining.

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### 1. Introduction

This paper reports the results of a second international, web-based survey about how people think about the future, conducted in spring 2007. The first survey, conducted in the spring of 2004, focused on how frequently individuals think about the future, how much they worry about the future, and how clearly they imagine the future and on their opinions

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about many issues of import to the future. This second survey focused more how people feel when they think about their personal futures and how they go about thinking about their personal futures.

Complete results of the first survey are reported in Tonn et al. [1] and Tonn and Conrad [2]. To summarize results in the former paper, when the respondents hear the word 'future', they think about a point in time 15 years into the future, on average, with a median response of 10 years. Respondents think less about the future than the present. On the other hand, they tend to worry more about the future than the present. Respondents' ability to imagine the future goes 'dark' around 15–20 years into the future. Most of the respondents are optimistic about the near-term, but become more pessimistic about the longer-term. Respondents believe that humankind is not acting very responsibly with respect to a whole host of environmental and social issues but is acting responsibly with respect to technology. Almost half of the respondents would not wish to have been born in the future. Most of the other respondents would have preferred to have been born 50–500 years into the future. Approximately 45% of the sample believes that humankind will become extinct. The data suggest that Christians are more optimistic and do not believe that we will become extinct. Males worry less but also think more about the future.

The second paper explores the relationships between three endogenous variables – thinking, worrying and imagining the future – and the relationships between these variables and a rich set of exogenous demographic and belief variables. Among many reported observations, individuals who are better able to imagine the future think about the future more than those who cannot imagine the future well. Those who worry more about the future think more about the future than those who do not. Older individuals think about the future less than younger individuals even though age is not correlated with worrying about or imagining the future. Christians think more about the future than others although they tend to worry less about the future. Secularists are less able to imagine the future.

As noted above, the research reported on below extends the research just summarized in several ways. Explicit attention is paid to what stimulates individuals' thinking about their personal futures. Insights are also gained into how individuals feel when they think about their personal futures, the approaches they use when thinking about their personal futures, and perceived outcomes of their efforts. Respondents were also asked what they thought they could do to improve their thinking about their personal futures. Demographic data were also collected from the respondents to help further clarify how gender and age, for instance, mediate individuals' thinking about the future.

The next section presents the survey methodology and Section 3 presents the results.

## 2. Survey methodology

As mentioned above, data were collected for this research via a web-based survey. A web-based survey was chosen for reasons of cost and convenience. Additionally, using the web offered us the opportunity to include people from all over the world through the implementation of a network survey. Essentially, the authors of this paper sent the web address of the survey to their primary e-mail correspondents and to various list serves. Those receiving the requests to complete the survey were then asked to pass the request along to others. There were no restrictions placed on who could answer this survey. This methodology was successful at generating a fairly large number of respondents in a fairly short period of time: 505 people completed the survey from during the spring of 2007. Additionally, it is apparent that numerous secondary and tertiary contacts completed the survey.

The network sample using a web-based approach, while cost and time efficient, does have drawbacks. First, the survey was limited to those with e-mail and web access. Second, because the sample was not random in the classical sense, we cannot say that  $X\%$  of the population of the United States, for example, experiences thinking about the future in some particular way. We can only say what percentage of our sample held such views. However, we believe it is important to reveal to futurists what these views might be in the first place.

Lastly, the sample is biased based upon the composition of our primary contacts. The composition of our primary contacts, in combination with the demographics of the typical internet user, lead to a sample dominated by U.S. citizens and people with higher than average incomes and educations, although our sample is somewhat typical of web-users [3,4]. We hope that future research will be more inclusive.

## 3. Results

This section presents the results of this survey research into how individuals approach and make decisions about the future. Section 3.1 presents the basic demographic results. Section 3.2 describes what types of external stimuli prompt respondents to think about their personal futures. Then, the different approaches respondents use to help them think about the future are presented in Section 3.3. The outcomes respondents experience as a result of their future thinking are reported in Section 3.4. Sections 3.5–3.7 describe differences in how males and females, individuals of different ages, and individuals with different religious backgrounds experience and think about their individual futures.

### 3.1. Demographics

Five hundred and five individuals completed the survey. Table 1 presents the distribution of respondents by region of the world. Given the survey methodology, as expected, most respondents live in the United States. However, approximately 25% of the respondents live outside the United States and represent 38 different countries.

**Table 1**  
Where survey respondents live.

Country/area	Number	Percentage
United States	378	74.9
Other North America	13	2.6
Western Europe	36	7.1
Eastern Europe	23	4.6
Australia and New Zealand	24	4.7
Asia	7	1.4
Middle East	8	1.6
Other	16	3.1
Total	505	100.0

Table 2 presents the demographic characteristics of the respondents. Since a classic random sampling methodology was not used in this study and because the study was limited to internet users, it was anticipated that the sample would be diverse in some aspects and not diverse in other aspects. The sample is fairly evenly split between males and females. The ages of the respondents range from 12 to 80. Individuals aged 30–50 are somewhat over-represented in this sample (43%), but the sample does contain substantial numbers of younger (29%) and older individuals (28%). Other aspects of the sample are not very representative of the population in the United States or the world. The preponderance of the respondents is Caucasian, very highly educated, and have middle class or higher household incomes. About one-half of the respondents are married and have children, although few have grandchildren. The respondents are somewhat diverse with respect to religious beliefs, although most of respondents consider themselves Christian (which includes Roman Catholics, Protestants, Anglicans, among other Christian denominations) or secular/non-religious (which also includes agnostics and atheists). The Asian traditional category contains Hindus, Buddhists, Taoists, and Shintos. Not many of the respondents report being extremely or very religious.

It should be pointed out that the demographics of this second international survey are remarkably similar to the respondents who participated in the first international survey [1]. Both samples are diverse over gender, age and religion and less so over other demographic variables. Two questions were asked in both surveys, relating to how frequently and how clearly respondents think about the future. The answers to these questions were also quite similar, with respondents in both surveys reporting a similar rate of decline in the frequency about thinking about future as time horizons become more distant and reporting that being able to clearly imagine the future becomes severely degraded around 10 years into the future.

**Table 2**  
Demographics (% of respondents) (*N* = 505).

Sex	Male	Female					
Age	46.7	53.3					
	<30	30–50	>50				
	28.9	43.2	27.9				
Race/ethnicity	Caucasian	Black	Asian	Hispanic	Indian	Arab	Other
	85.5	2.2	2.4	1.0	1.4	2.0	5.5
Domestic status	Single	Married	Co-habiting	Divorced	Widowed	Other	
	28.5	49.9	9.7	7.5	1.4	3.0	
Number of children	0	1	2	3	4+		
	48.9	15.0	20.6	7.5	7.9		
Number of grandchildren	0	1	2	3	4+		
	87.3	3.0	3.0	2.0	4.8		
Household income	Very poor	Poor	Middle class	Upper middle class	Upper class		
	0.8	6.1	51.8	37.2	4.0		
Employment status	Work full-time	Work part-time	Unemployed	Student	Retired	Other	
	56.8	8.3	5.2	14.3	3.8	11.6	
Education	Less than high school	High school	Associate or vocational degree	Some college	College degree	Some post degree	Post college degree
	2.0	2.0	2.0	9.5	20.6	15.6	48.3
Religion	Christian	Judaism	Asian traditional	Pagan or new age	Secular or non-religious	Muslim	Other
	44.1	4.2	2.0	2.6	27.5	2.6	17.0
Religiousness	Extremely	Very	Somewhat	Not at all			
	4.0	18.6	41.4	36.0			

**Table 3**

What stimulates you to think about your personal future? (% of responses).

Something I hear on the radio or TV	42.8
Something I read in newspaper, magazine, book or other printed material	59.6
My own sense of responsibility	86.7
Spouse, children, or other close relative(s)	71.7
Friends, co-workers	50.3
Daily worries	59.4
Specific occasions such as holidays, birthdays, etc.	89.6
Financial activities, such as paying bills	55.2
Things that happen at my place of work	42.2
Health issues	54.1
Career issues	66.5
No particular reason	15.0

### 3.2. Thinking about the future and external stimuli

The survey included three questions that probe what stimulates individuals' thinking about their personal futures. Table 3 presents 11 different types of stimuli. Respondents were asked to indicate which of the 11 stimulates their thinking about the future. The most influential stimuli are specific occasions such as holidays, birthdays, etc. and ones own sense of responsibility. Other influential stimuli include career issues, something read in newspapers, magazines, books or other printed materials, financial activities, such as paying bills, and health issues. No stimulant was chosen by fewer than 40% of the respondents. The average number of stimuli reported was 6.3 (Std = 2.5), with a median of 6.0.

Table 4 explores the influences of special occasions and events in more depth. Respondents were asked how likely each of eight of these types of items was to stimulate them to think about the future. New Years and ones own birthdays prompt much futures thinking, as do funerals, weddings, graduations, and the winter holiday season. Other national holidays are not influential stimuli.

Table 5 explores when during the day individuals are most likely to think about the future. Bedtime seems to be fairly correlated with thinking about the future: almost 40% of the respondents reported fairly often or almost always thinking about the future when they get up in the morning and 45% report doing so just before bed. Thinking about the future is common when driving or commuting in the morning (53%), when driving or commuting in the afternoon (46%), and while showering or bathing (41%). Watching TV and eating appear to be quite distracting with respect to futures thinking.

**Table 4**

Listed below are a number of special occasions and events that occur over the course of a year. For each one, indicate how likely you are to think about your future during that special occasion or event (% of responses).

How likely are you to think about your future	Very likely	Somewhat likely	Slightly likely	Not likely
During the winter holiday season	25.9	38.0	24.6	11.5
At New Years	41.0	31.3	17.8	9.9
At other national holidays	4.8	17.2	40.0	38.0
On your birthday	35.4	37.2	16.8	10.5
On the birthday of family members (e.g., spouse)	12.9	29.5	30.9	26.7
At weddings	25.7	27.5	22.8	24.0
At funerals	34.5	31.5	20.0	14.1
At graduations	25.7	27.5	25.5	21.2

**Table 5**

Listed below are a number of time periods and activities during the day. For each one, indicate how often you think about your future during that time period or activity (% of responses).

How often do you think about your future	Almost always	Fairly often, half the time or more	Once in a while, less than half the time	Very seldom or never
In the morning	18.0	21.4	34.9	25.7
While driving or commuting in the morning	16.0	37.6	29.1	17.0
During the daytime	9.9	35.8	45.9	8.3
During work or in the office	10.7	26.1	43.6	19.6
During meal times	2.6	11.9	36.6	48.9
While driving or commuting in the afternoon/evening	13.5	32.9	32.7	21.0
In the evening	13.7	33.9	40.0	12.5
While watching TV	2.8	11.7	31.1	54.5
While showering or bathing	15.4	25.3	26.9	32.3
Just before bed	20.4	25.1	31.5	23.0
When you wake up in the night	12.9	20.4	26.9	39.8

**Table 6**

Shown below are a number of bi-polar scales, such as “good – bad”. Use each scale to indicate how you feel when you think about your personal future. Indicate one number for each scale (% of responses).

	1	2	3	4	5	
Pessimistic	1.2	5.1	16.6	47.6	29.4	Optimistic
Calm	12.3	28.2	29.6	24.3	5.6	Anxious
Happy	29.4	40.5	22.5	6.9	0.8	Sad
Fearful	2.2	9.1	27.3	42.1	19.2	Confident
Excited	22.3	44.1	25.9	6.9	0.8	Depressed
Good	30.0	46.6	20.9	2.4	0.2	Bad
Dark	1.2	2.2	21.5	47.2	27.9	Light
Hot	5.7	28.5	58.5	5.7	1.6	Cold
Comfortable	43.7	46.2	21.9	7.9	0.4	Uncomfortable

### 3.3. Approaches to futures decision making

The literature on decision making is comprehensive and rich. There are many classic texts that describe how decisions ought to be made [5] and methods and heuristics people actually use to make decisions [6]. Less is known about how people feel when they contemplate their futures and the types of approaches they may use to make decisions about their futures.

Table 6 presents the results from a question that addressed how people feel when they think about their personal futures. How they feel is captured in nine bi-polar scales. For example, do respondents feel pessimistic or optimistic, calm or anxious, or happy or sad when thinking about their personal futures? Overall, the respondents report feeling fine when engaging in this activity. They are optimistic, happy, excited and very comfortable. Thinking about the future is good and light. These results are somewhat surprising in that most respondents have difficulty imagining the future beyond 10 years and could be expected to feel some anxiety at least in dealing with the future. However, it is probably the case that most people do not consider their personal futures beyond their ability to imagine the future. They stay within their comfort zone is probably the best conclusion to be made from these data, although there are some differences by gender and age (see below).

The respondents were asked if they set aside specific times during the week to think about their futures. Only 11.7% said that they did; 88.3% said that they did not. It appears that most people rely on external stimuli to prompt them to think about the future and/or do it out of habit but not in any pre-meditated way during certain times of the day. The respondents were also asked about how much time they spent thinking about their personal futures the last time they seriously thought about their personal futures. The average number of minutes was 35.8 (Std = 39.9), with a median of 20 min and a range of 0–240 min.

Table 7 lists 14 statements that describe approaches and/or characteristics of how individuals make decisions regarding their personal futures. Some of the statements capture the ‘rational’ approach to decision making (e.g., ‘I lay out on a piece of paper the pros and cons about decisions about my future’ and ‘I think about my future using probabilities’). Other statements can be described as being more heuristic (e.g., ‘I pattern my decisions about my future after decisions made by other people’ and ‘I rely on my past experiences to make decisions about my future’). Respondents were also asked how intuition and even spirits influence their decision making.

The results suggest that as a group, the respondents rely mainly on themselves to make decisions about their personal futures and do so using several heuristic approaches. They mainly rely on their own past experiences and do not pattern their decisions on decisions made by other people or their elders. They try to use their imaginations and then be prepared for emerging situations. They also rely quite a bit on their intuitions, while constantly adjusting expectations. They do not employ ‘rational’ approaches (e.g., using pieces of paper to list pros and cons) very often. The average number of modes used is 5.8 (Std = 2.3), with a median of 6.0 and a range of 0–14. A cluster analysis done over the 14 modes suggests that individuals group not by the type of decision approaches they use but by the number. Those who employ few decision approaches rely on past experiences and those who employ many approaches use that approach and several others. The fact that the respondents do not rely on tradition or the experiences of others is somewhat surprising but maybe less so if one truly believes that the world is changing at a rapid pace.

### 3.4. Outcomes and challenges to futures decision making

This section presents descriptive statistics for answers to questions that probe outcomes of individuals’ thinking about the future and how they think they could improve their thinking about the future. The first question addressed is very straightforward: individuals were asked whether they found that thinking about their personal futures was worthwhile. As indicated in Table 8, over 80% of the respondents feel that thinking about their personal futures was worthwhile or very worthwhile. Then, respondents were presented with nine statements that pertain to potential outcomes of their thinking about their personal futures, such as the development of plans, changes in attitudes, and reduction of anxiety about their futures. The results shown in Table 9 indicate that plans are a very important output of individuals thinking about the future (over 80% at least agree with that statement). Taking decisive action to impact personal futures is important (over 60% agree

**Table 7**

Please indicate your level of agreement or disagreement with the following statements (% of responses).

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I try to predict the future and then act as if the prediction will come true.	5.0	26.1	29.3	29.5	10.1
I try to imagine different situations in the future and then be prepared for each situation.	18.4	53.9	15.6	11.3	0.8
Like being in the audience of a play, I can watch myself on 'stage' in my future.	8.1	31.5	24.6	29.7	6.1
I constantly adjust my expectations for my future.	14.9	49.9	21.2	13.1	1.0
I lay out on a piece of paper the pros and cons about decisions about my future.	5.9	22.8	17.2	37.2	16.8
I rely on my intuitions to make decisions about my future.	15.0	52.5	18.0	11.7	2.8
I pattern my decisions about my future after decisions made by other people.	2.4	16.8	28.1	38.8	13.9
I rely on the experiences of older people to make decisions about my future.	3.2	34.5	27.1	24.4	10.9
I rely on my past experiences to make decisions about my future.	19.4	68.5	8.7	2.8	0.6
I rely on tradition to make decisions about my future.	2.0	19.6	28.1	37.0	13.3
I seek advice from 'spirits' about my future.	3.0	8.3	11.9	23.2	53.7
I think about my future using probabilities.	6.7	37.8	24.2	22.6	8.7
I like to take risks with respect to my future.	5.5	29.9	29.5	27.5	7.5
I prefer a more certain future that may be less favorable to myself than a more uncertain future which may be more favorable to myself.	2.6	20.0	26.5	41.0	9.9

**Table 8**

Do you find that thinking about your personal future is worthwhile? (% of responses).

Very worthwhile	45.0
Worthwhile	38.6
Slightly worthwhile	14.7
Not worthwhile at all	1.8

with that statement), followed by attitude change and behavioral changes (both around 50% agreement). Few people attempt to instruct other people about what they should do and very few reported no outcomes resulting from their thinking about their personal futures.

Table 10 reports the results of answers to this question: When you try to predict your personal future, how often are you right? Almost one quarter of the respondents reported that their predictions are very often correct (much more than half the time). Just over one-half reported being right about half of the time. About 20% report being right much less than half of the time and just a few percent admitted to being poor predictors.

**Table 9**Please indicate your level of agreement or disagreement with the following statements about the *outcomes* of your thinking about your personal future (% of responses).

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Plans are an important outcome of my thinking about my personal future.	27.5	53.7	13.7	4.6	0.6
Thinking about my personal future reduces my anxiety about my personal future.	9.5	33.9	28.5	22.2	5.9
I take decisive actions that will impact my personal future after thinking about my personal future.	16.2	44.4	27.7	10.7	1.0
I instruct other people about what to do after thinking about my personal future.	5.1	21.0	32.3	30.7	10.9
I change my behavior after thinking about my personal future.	7.3	41.0	34.1	14.7	3.0
I change my attitudes after thinking about my personal future.	7.7	42.8	31.3	14.7	3.6
There are usually no outcomes resulting of my thinking about my personal future.	4.4	10.7	26.3	39.2	19.4

**Table 10**

When you try to predict your personal future, how often are you right? (% of responses).

Very often, much more than half the time	23.6
Often, around half the time	53.9
Not very often, much less than half the time	19.2
Almost never, only once or twice have I been right	3.4

**Table 11**

Please indicate your level of agreement or disagreement with the following statements about the barriers that may prevent you from thinking about your personal future (% of responses).

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
I do not have enough time to think about my personal future.	2.8	11.1	14.9	50.7	20.6
I do not have enough energy to think about my personal future.	2.8	14.7	16.6	46.5	19.4
I lack imagination to think about my personal future.	2.0	10.3	9.1	41.8	36.8
I am not interested in thinking about my personal future.	1.6	3.4	9.1	41.6	44.4
It is too emotionally draining to think about my personal future.	4.2	14.1	16.6	36.8	28.3
I do not have anyone to talk to about my personal future.	3.4	10.1	10.9	40.6	35.0
I cannot not concentrate long enough to think about my personal future.	2.0	5.9	11.9	39.6	40.6

**Table 12**

Please indicate your level of agreement or disagreement with the following statements about what you would like to do better with respect to your thinking about your personal future (% of responses).

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Better organize my thoughts	16.8	46.9	20.2	13.7	2.4
Concentrate better	11.7	37.8	26.3	18.8	5.3
Have a better imagination	10.7	30.7	20.4	27.1	11.1
Not be so emotional	7.3	21.4	24.4	35.8	11.1
Find someone to talk with about my future thinking	7.9	24.6	25.0	32.1	10.5
Find more time to do it	8.7	21.4	30.7	29.7	9.5
Write about it in a journal	9.7	22.6	22.8	28.3	16.6

Respondents were asked about barriers that may prevent them from thinking about their personal futures. Example barriers include lacking time, energy and imagination and being unable to concentrate long enough to make adequate progress at the task. Given the optimism about the future reflected by earlier answers from respondents and the usefulness of their thinking about their personal futures, it is not surprising that few respondents reported serious barriers to their thinking about their personal futures (see Table 11). Less than 20% of the respondents reported that any barrier was significant. However, as seen in Table 12, respondents did admit to wanting to improve their thinking about their personal futures in several respects. The majority of respondents would like to better organize their thoughts, at the very least, and concentrate better. Over 40% reported would like to improve their imaginations. Around 30% of the sample would like to be less emotional, find someone to talk with about their futures, find more time for this activity, and write about their personal futures in a journal.

### 3.5. Gender differences

Previous research found some gender differences with respect to thinking about the future. For example, it was found that males think more about the future [1,2,7,8] and females worry more about the future [1,2,9]. For most of the questions assessed in the sections above and reported in Tables 3–12 below, there were no statistically significant gender differences. However, there were enough differences that they are worth reporting.

There are differences in what stimuli prompt males and females to think about the future and how they feel when thinking about the future. Generally, worry seems to be an important stimulus for females, consistent with the findings of earlier research, and females having a more visceral relationship to thinking about the future than men, as indicated by these findings:

Daily worries prompt females to think more about the future than males (Sign. = .027);

Males and females experience thinking about the future differently, with females reporting feeling more anxious (Sign. = .008), fearful (Sign. = .005) and uncomfortable (Sign. = .008) and experiencing the future as darker (Sign. = .05) and colder (Sign. = .013) than males;

Females think more about the future while showering or bathing (Sign. = .011), just before bed (Sign. = .026), and when they wake up at night (Sign. = .004) than men;

Emotional situations prompt females to think more about the future than males – at New Years (Sign. = .005), on their birthdays (Sign. = .05), at weddings (Sign. = .000), at funerals (Sign. = .06) and at graduations (Sign. = .024).

There are relatively few gender differences related to approaches to decision making regarding personal futures. Generally, males employ a few more 'rational' approaches than females, as indicated by these findings:

Males agree more with this statement: I try to predict the future then act as if the prediction will come true (Sign. = .035);

Males agree more with this statement: I think about my future using probabilities (Sign. = .040).



There are relatively more gender differences related to outcomes and areas of improvement, with males maybe exhibiting a bit more confidence and admitting fewer weaknesses, as suggested by these findings:

- Males report higher rates of predicting their personal futures than females (Sign. = .048);
- Males agree more with this statement, that thinking about my personal future reduces my anxiety about my personal future (Sign. = .008);
- Females report lacking imagination to think about their personal futures (Sign. = .011);
- Females report lacking energy to think about their personal futures (Sign. = .000);
- Females report that thinking about the future is more emotionally draining than reported by males (Sign. = .000);
- Females report wanting to be less emotional then thinking about their personal futures (Sign. = .000);
- More females would like to more frequently write about their personal futures in journals (Sign. = .000).

### 3.6. Age differences

Research generally supports the contention that younger people think more about the future than older people [10–13]. It has also been found that older people perceived their future time as more limited than younger people [14] and younger participants addressed more distant futures than older participants [15]. Other research has found that as people age, their time perspectives become less concrete, open and controllable [16]. Lastly, the results from the first survey suggested that older individuals think about the future less than younger individuals even though age is not correlated with worrying about or imagining the future [2].

The results of this survey suggest that people of different ages have quite different experiences in thinking about their personal futures. For example, people of different ages respond to different stimuli, have different daily patterns, and different emotional responses with respect to thinking about their personal futures:

- Younger respondents are stimulated by friends/co-workers (Sign. = .001), daily worries (Sign. = .000) and career issues (Sign. = .000), older respondents by spouses, children or other close relatives (Sign. = .000), and health issues (Sign. = .000) and middle-aged respondents by spouses, children or other close relatives (Sign. = .000), financial activities, such as paying bills (Sign. = .021), and career issues (.000);
- Special occasions also prompted younger respondents to think more about the future – at New Years (Sign. = .017), at weddings (Sign. = .000) and at graduations (Sign. = .000);
- Younger respondents tended to think more about the future during a higher number of periods during the day – during the daytime (Sign. = .05), during meal times (Sign. = .04), while driving or commuting in the afternoon or evening (Sign. = .04), in the evening (.019), while watching TV (.007), while showering or bathing (Sign. = .000), and just before bed (Sign. = .000);
- Older respondents reported thinking more about the future in the morning (Sign. = .000);
- Younger respondents reported being more anxious (Sign. = .000) and fearful (Sign. = .006) when thinking about the future whereas middle-aged respondents reported experiencing the future as bad (Sign. = .03) and uncomfortable (Sign. = .008).

There are substantial differences in the way that respondents of different ages make decisions about the future:

- Younger respondents more often report patterning their decisions after decisions made by other people (Sign. = .000) and older people (Sign. = .000) but, paradoxically, also report relying more in intuitions (Sign. = .05) and taking more risks with respect to their futures (Sign. = .003);
- Younger respondents also report using more approaches to decision making (Sign. = .06);
- Middle-aged respondents report a more systematic approach to the future, by laying out pros and cons of decisions on a piece of paper (Sign. = .035) yet also report relying on intuitions (Sign. = .05);
- Older respondents report more often trying to predict the future and then acting as if the prediction would come true (Sign. = .035).

There are also differences by age on reported outcomes of futures thinking:

- Younger people report that thinking about the future is more worthwhile (Sign. = .027) than middle-aged and older respondents but that the older respondents, based upon years of experience, report being better predictors of the future (Sign. = .001);
- Older respondents report that thinking about the future helps to reduce their anxieties (Sign. = .001);
- Younger and middle-aged respondents find thinking about the future to be emotionally draining (Sign. = .000) and hope to not be so emotional (Sign. = .028);
- Middle-aged respondents also report having less energy to think about the future than those of other ages (Sign. = .05).



### 3.7. Religious differences

Previous research illustrated stark differences in thinking about the future associated with people of different religious backgrounds. For example, the first survey found that Christians think less about the future but are more optimistic about the future than are their secular counterparts [2]. Christians and Jew are much less likely to believe that humans are going to become extinct than those with secular backgrounds [1]. One could argue that one's religious beliefs shape perceptions about the future. This second survey also asked respondents about their religious background.

Religious background seems to play a much less important role in how respondents go about thinking about their personal futures. After dividing the respondents into three groups, Christians, Secularists, and others, statistical analysis showed no significant differences in how people with these different religious backgrounds experience thinking about their personal futures, the ability of special occasions to prompt this cognitive activity, when during the day they think about their personal futures, whether they thought thinking about their personal futures was worthwhile, outcomes of their thinking, prediction outcomes, and barriers. The biggest differences are found with respect to approaches, where Christians rely more on the experiences of older people to make decisions about their personal futures (Sign. = .000), and rely more on tradition (Sign. = .000). Christians and others also report seeking advice from 'spirits' more than Secularists (Sign. = .000). Secularists report using fewer approaches than the other two groups (Sign. = .005). The only other differences to report pertain to ways of improving thinking about personal futures. Christians and others report wanting to be less emotional (Sign. = .001) and find more time to think about their personal futures (Sign. = .017) and others want more time to write about their personal futures in journals (.002).

## 4. Conclusions

This paper contributes to our understanding about how individuals think about the future. The respondents interact with the future in different manners, being stimulated to think about the future in different ways, using different methods to make decisions about their own futures, and experiencing the future different emotionally. There were numerous differences in how males and females experience thinking about the future, some of which appear to reinforce some gender stereotypes. Not surprisingly, age also plays a big role in how people experience thinking about their futures, but somewhat surprisingly, given the results of previous research, religion does not.

Future research in this area still needs to draw upon a broader pool of respondents, to increase diversity in education, income, and race/ethnicity. Also, future research should explore how one's past, current, and prospective health may influence thinking about personal futures. Lastly, future survey research could explore moral questions about the future, such as what might be an acceptable risk for the extinction of the human race.

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