

# **Chronological Age versus Life Horizon: Exploring the Concept of Ageing in Consumer Behavior**

**Beverlee B. Anderson**  
California State University San Marcos

**Glen H. Brodowsky**  
California State University San Marcos

*This paper introduces the concept of life horizon as another potentially useful age-related concept in understanding consumer behavior. Life horizon can be defined as where one sees oneself on the birth-to-death continuum and is related to the linear view of time, which is commonly held by most Americans and Europeans. The exploratory research presented finds that life horizon, while related to chronological age, is a distinct concept. Chronological age and life horizon variables are found to have different patterns of relationship with selected temporal attitudes and perceptions.*

## **INTRODUCTION**

Since the earliest days of television when Geritol hucksters quipped “My wife, I think I’ll keep her,” marketers have realized that age and life stage were important segmentation variables. In those days, products were aimed at older Americans and seemed, well, old. Fifty years later, the television fed and bred Baby Boomers enter their seventh decade with a renewed sense of youthfulness. While older retirees still gravitate to early bird specials at restaurants, well preserved fifty-and-sixty something celebrities like Suzanne Sommers and Florence Henderson represent products for healthy, youthful, active people.

Age and ageing are multidimensional concepts (Mathur & Moschis 2005). Some age concepts are externally determined, while others are determined within and by the individual. One example that is externally determined is chronological age. Chronological age is based on what Hall (1983) calls profane time – that world of clocks and calendars. Another such concept is that of physical age – which relates to humans as biological beings that are governed by biological time. Some scientists use the average length of telomeres (repeat sequences of DNA that sit on the ends of chromosomes) as an indication of biological ageing (BBC News, July 19, 2006). A third externally determined dimension views age in the context of society – what society determines to be young, old, or middle aged. As social beings we are likely to view ourselves ageing or in age groupings that society has constructed and that are reinforced through media and social institutions.

The psychological view of age, however, is usually considered to be based on internal factors and part of an individual’s self concept. Psychological age describes how old or young people think or feel that they are. Mathur & Moschis (2005) also discuss a spiritual dimension to people’s self concept with respect to the wisdom and age of their souls.

Most of the age-related marketing research tends to use either chronological age or psychological age. The latter is frequently defined as the age one “perceives one’s self to be” (Stephens 1991, Blau 1956;

Kastenbaum, Derbin, Sabatinin & Artt 1972). There is general agreement on the definition of chronological age. After all, chronological age is based upon a generally accepted measurement scale of calendar years, whether used in aggregated grouping classifications or as actual years. Defining and measuring psychological age has been less straightforward. Its study has been approached from differing perspectives using different terms and different measurement instruments. *Cognitive age* is the term most frequently used in marketing literature. Barak (1987) and his several coauthors, Gould, Rahtz, Schiffman, etc. have all tended to use this term in their writings. Researchers in other disciplines and some others in marketing have approached the *cognitive age* concept from slightly differing perspectives, using slightly different terms. Stephens (1991) reports that researchers have used vastly different measurement instruments and scales, as well as using different terms to identify this notion of psychological age. Some of the terms used include: *self-perceived agedness*, *personal age*, *subjective age*, *perceived age*, and *age identification*. The lack of common terminology and proliferation of measurement instruments has produced some confusing and contradictory findings in the age-related literature. Barak (1998) concludes that while there are varying dimensions of age and variations of cognitive age, “cognitive, desired, and societal ages are likely to: 1) differ from both each other and from chronological age, and 2) inter-correlate with both each other and with birth age.” (p. 196)

The Cognitive Age scale developed by Barak and Schiffman (1981), with some adaptations, has been used in several marketing studies. This scale, as with most cognitive measurement scales, is keyed to chronological age groupings and asks people if they feel themselves to be in their teens, thirties, forties, etc. Variations of the use of such scales may ask subjects to say how old they think *others* think they are (social age) or to indicate their own ideal age. By using numbers of years as anchors, these scales actually look at how individuals see themselves in the context of how society has defined an age grouping. Movies, advertising, and media are responsible for communicating changes in social ageing (Mathur and Moschis 2005). As the Baby Boomers age, the popular media mantra that continues to target this massive segment has become “60 is the new 40.” This suggests that society is redefining expectations and characteristics of people in various age classifications. It is not a coincidence that the early boomers are entering their sixties. A similar phenomenon occurred a decade ago when the boomers first entered their fifties.

Many of the studies that examine one form of cognitive age or another have focused on older or more mature individuals. Some research has limited its focus to individuals older than 50 (Schroeder et. al 2000; Szmigin and Carrigan 2000), while Van Auken & Barry (1993) focused their research on the over 55 age segment. A few researchers have studied even older individuals. For example, Clark, Long & Schiffman (1999) focused on women 65 or older and Sliwinski, Hofer & Hall (2003) targeted individuals between 75 and 85.

It appears that a general belief has been that cognitive age is more relevant in older consumers than in younger ones. Indeed, as the US population ages, marketers have recognized that rather than lumping all people into one great big segment of old people, the mature market should be segmented into the young old, young at heart, or the old-old.

## PURPOSE OF STUDY

This study explores the concept of individuals’ perceptions of where they see themselves on the continuum of life, from birth to death and how this perception may relate to other temporal attitudes and perceptions used in understanding consuming behavior. This self concept of where people see themselves along the life-death continuum is defined here as an individual’s *Life Horizon* and represents how much time individuals perceive that they have left to live. Such a concept has not before been examined in previous age-related studies. In popular literature, the notion that the young think they will live forever is frequently stated or implied. Death is probably not something that enters into one’s conscious planning on a day-to-day basis. While, realistically, people know they won’t live forever, thinking about how much time we have before we die is not something we enjoy thinking about.

However, more and more marketers are encouraging consumers to take their life horizons into account. For example, retirement and financial planners encourage people to think about how long they

expect to live when making various decisions to ensure they will not outlive their resources. On-line retirement planning tools require people make some approximation as to how long they expect to live. So, at some point people begin to recognize that they are moving along the continuum and getting closer to the time horizon.

Life expectancy in the U.S. has been increasing dramatically. A person born in 1900 had a life expectancy of slightly over 47 years; one born in 1950 could expect to live about 11 years longer, to 58, and a child born in 2000 had a life expectancy of 77 years. So, while on average, mid-life for a person born in 1900 would be in their early 20's, today, average mid-life would be closer to 40. Chronological age, while still measured in years, today bears little relationship to how that age related to one's life and lifestyle in the past –one's life time horizon has shifted and lengthened. The average life expectancy for all Americans today is around 78 years (National Center for Health Statistics 2006). Women are expected to live slightly longer while men can expect to live slightly less long, but using 78 as an approximation is a reasonable approach to view one's life horizon.

## METHODS

### Data Collection

Data were collected at a Summer Festival in Balboa Park, San Diego, California, in 2005. The researchers set up a booth and solicited passers-by to participate in the survey. Those entering their names on a separate sheet of paper were eligible to win a prize in a raffle drawing.

### Sample

Over the course of two days, 590 usable surveys were completed. Of these, 54% were male and 42 % female. The sample was fairly evenly split between those who are single (48.4%) and partnered (46.6%) and 1% identified as widowed (4% of the respondents did not answer this question).

The mean age for the entire sample was 37, with a standard deviation of 12 years. Slightly over 50 % had completed at least four years of college. In terms of ethnicity, 61 % of the respondents identify as Caucasian, 5.4 % as African American, 4.2 percent as Asian, and 1.2 % as Native American.

### Measurement

Chronological age was measured by asking respondents to indicate their birth year. This method was thought to produce more accurate information than just asking for an individual's age. To collect information on respondents' Life Horizon (LH), a unique graphic scale, as illustrated in Figure 1, was used.

**FIGURE 1  
TIME HORIZON MEASUREMENT SCALE**

*Instructions: Please indicate where you see yourself between birth and death by filling in one of the circles below:*

Birth   **0   0   0   0   0   0   0   0   0   0   0   Death**

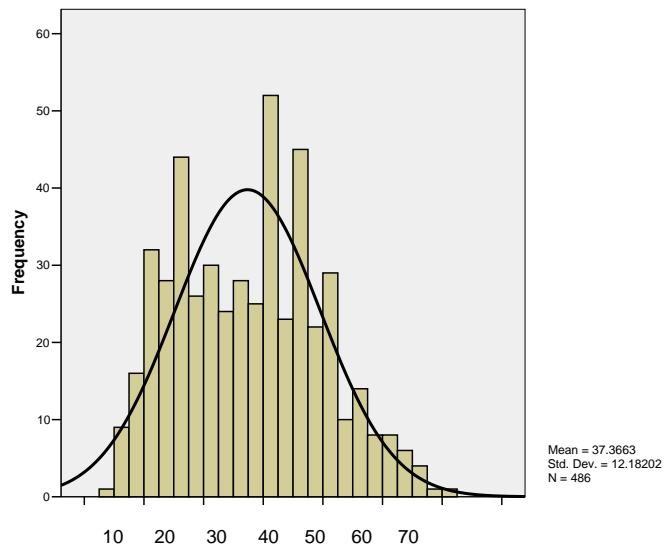
This graphic scale is based on a linear uni-dimensional view of time with a beginning and end. The 10 points allow the respondent to indicate one's perceptual age, based not on years, but on a life continuum.

A questionnaire containing 35 temporal attitude statements was used in which respondents were to indicate their agreement or disagreement with each statement on a 5 –point Likert Scale from strongly agree to strongly disagree. This temporal perception and attitude scale has been used in several research studies (Anderson and Venkatesan 1994; Schroeder and Venkatesan 1996; Morello 2000; Brodowsky & Anderson 2000) and has been found to be valid and reliable among many different populations.

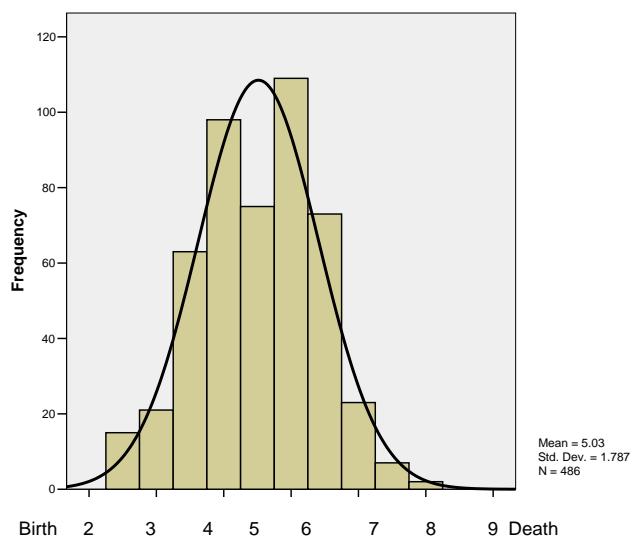
## RESULTS

The completed questionnaires were scanned into an SPSS data file. The first univariate analyses examined the variables of chronological age (CA) and life horizon (LH), where respondents see themselves between life and death. Of the 190 respondents, only 486 (82%) responded to both questions. Therefore, only these 486 respondents were retained for future analyses. Figures 2 & 3 show the histograms, means and standard deviations of the responses to the chronological age (CA) and life horizon (LH) questions.

**FIGURE 2  
AGE DISTRIBUTION**



**FIGURE 3  
LIFE HORIZON**



In general the two measures appear to follow similar, yet not identical, patterns. The two age measures – one mechanical and the other psychological, were highly correlated (-.545) similar to the findings of Barak (1998) with respect to cognitive age, social age, and chronological age. The negative correlation can be explained by the measures themselves. Chronological age is determined by birth year,

so a lower number indicates an older age, while life horizon indicates how much time a respondent perceives that he or she has left. Therefore, a higher number on life horizon indicates a shorter horizon while a lower birth year indicates an older age.

Given an average life expectancy of 78, the midpoint (5) on the life horizon scale would be expected to translate to approximately 39 years. If chronological age and life horizon were absolutely the same, the mean chronological age in the sample of 37.36 years would be expected to translate to 4.79 on the life horizon scale. However, the average on the life horizon scale is 5.03, which is somewhat higher than would be expected.

**FIGURE 4**  
**HORIZON SCALE DISTRIBUTION BY AGE**

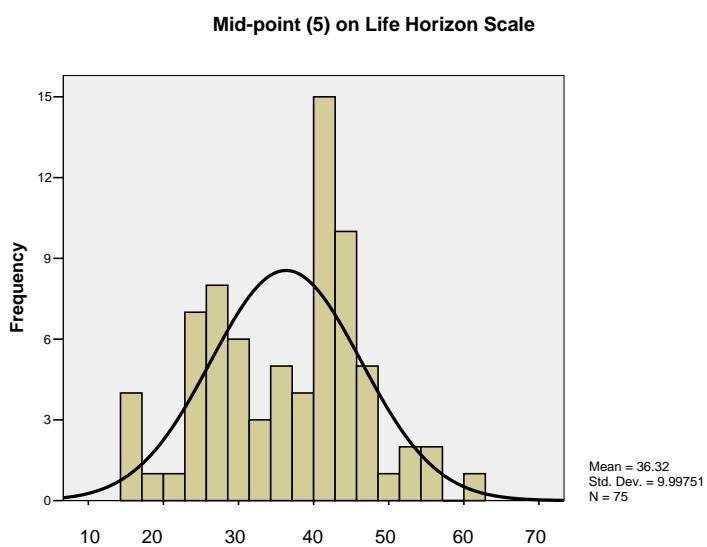


Figure 4 shows the distribution of chronological ages of the individuals who indicated, by placing a 5 on the life horizon scale, that they perceive their lives to be halfway over. This clearly shows that the two age concepts, chronological age and life horizon, while highly related, are separate concepts.

Fifteen respondents indicated that they viewed themselves as having their entire lives ahead of them (Figure 3). Nonetheless, these 15 respondents ranged in age from 15 to 56, with a median age of 30. (See Table 1). For three of the Life Horizon response categories, the average chronological age pattern was not as expected, that is the average chronological age of those in group 1 was expected to be lower than that of those in group 2, which was expected to be lower than that of those in group 3 and so on. As stated, the average age of those who saw their entire lives ahead of them was 31.47. However, the average age of those in the next category was only 25.05. Again in the four categories with the shortest life horizons (7, 8, 9 and Death), the chronological ages did not follow the expected pattern. The average age of those in category 8 was lower (45.52) than those in category 7 (47.23). The two individuals who indicated they had a zero life horizon were 34 and 64, for an average of 49, which was slightly lower than the average age (50.43) of the 7 individuals who placed themselves in the category 9 (next to death).

**TABLE 1**  
**CHRONOLOGICAL AGES WITH EACH LIFE HORIZON CATEGORY**

Time Horizon	N	Mean Age	Std.	Mode Age	Median Age	Age Range
<b>Birth</b>	<b>15</b>	<b>31.47</b>	<b>11.24</b>	<b>Multiple</b>	<b>30.0</b>	<b>15 – 56</b>
<b>2</b>	<b>21</b>	<b>25.05</b>	<b>4.74</b>	<b>25</b>	<b>24.0</b>	<b>13 – 35</b>
<b>3</b>	<b>63</b>	<b>27.78</b>	<b>8.17</b>	<b>26</b>	<b>26.0</b>	<b>15 – 53</b>
<b>4</b>	<b>98</b>	<b>32.64</b>	<b>8.36</b>	<b>28</b>	<b>31.5</b>	<b>18 – 54</b>
<b>5</b>	<b>75</b>	<b>36.32</b>	<b>9.99</b>	<b>42</b>	<b>39.0</b>	<b>17 – 61</b>
<b>6</b>	<b>109</b>	<b>41.68</b>	<b>10.35</b>	<b>42</b>	<b>43.0</b>	<b>15 – 67</b>
<b>7</b>	<b>73</b>	<b>47.23</b>	<b>10.86</b>	<b>42</b>	<b>49.0</b>	<b>18 – 68</b>
<b>8</b>	<b>23</b>	<b>45.52</b>	<b>14.93</b>	<b>Multiple</b>	<b>51.0</b>	<b>19 – 65</b>
<b>9</b>	<b>7</b>	<b>50.43</b>	<b>17.92</b>	<b>44</b>	<b>46.0</b>	<b>19 – 72</b>
<b>Death</b>	<b>2</b>	<b>49</b>	<b>21.21</b>	<b>34</b>	<b>49.0</b>	<b>34 - 64</b>

The next phase of the analysis involved examining the relationship of both Birth Year and Life Horizon to the 35 items in the time attitude scale (Anderson and Venkatesan 1994). Each of the 35 items was measured on a 5-point Likert type scale, Life Horizon, as mentioned, was measured on a 10-point ordinal scale, and chronological age as year of birth. To analyze the relationships of chronological age and life horizon with the temporal perceptions and attitudes, a Kendall's tau test was used. This test is more conservative in that it does not depend upon a normal distribution or a metric quality of interval scales. Given that both Life Horizon and the Likert scaled temporal attitude questions are likely to produce more ordinal than interval responses, the Kendall tau statistic to determine the amount of agreement between two sets of ordinal rankings is appropriate. The results of this analysis are presented in Table 2.

Of the 35 temporal attitude and perception questions, four were found to be significantly associated with both Life Horizon and Chronological age. The coefficients show the same directional relationships with both LH and CA with all four items. With one item, "People should not waste their time," the younger and longer LH respondents were more likely to agree, while agreement was more likely with older and shorter LH individuals on the other three items relating to scheduling activities and being punctual: "I always schedule and pre-plan my shopping activities." "I tend to do most things on a regular, scheduled basis." And "I am a punctual person."

The nine items that were significantly related to chronological age, but not related to Life Horizon show that older individuals tend to be more oriented toward the present. They say they spend little time thinking about the past or the future; they say they enjoy spending time with friends and relatives; and they tend to lose track of time when enjoying themselves. All of these attitudes are indicative of present oriented individuals. They also indicate that they do not believe there is any excuse for being late and that they may get frustrated if they don't complete all they want to do in a day. Three additional items were associated with life horizon, two of which relate to the future. Those with longer life horizons thought the future looks brighter than the past and also were likely to agree that "What I don't get done today, I can always do tomorrow." These items are not representative of a present orientation, but are more characteristic of those who have a more future orientation. Conversely, those with shorter Life Horizons, in contrast, are more likely to feel they have little control over their time.

**TABLE 2**  
**TEMPORAL PERCEPTIONS AND ATTITUDES**

Item Description	Life Horizon		Birth Year	
	Corr Coeff.	Sig.	Corr Coeff.	Sig.
Watching TV is a waste of time.	-.019	.49	-.016	.63
There never seems to be enough time to do the things I enjoy.	.047	.18	-.003	.93
Interruptions to my planned routine tend to bother me.	.051	.14	.007	.84
People should not waste their time.	-.068	.05**	.056	.09*
I plan each and every day.	.039	.26	-.095	.00**
There is no excuse for being late.	.052	.14	-.109	.00**
I always schedule and pre-plan my shopping activities.	.071	.04**	-.09	.01**
I always like to know how long a task will take before I begin.	.031	.38	-.010	.773
Managing one's time is an important key to success in life.	-.011	.77	-.048	.16
I rarely look at a clock or watch	.031	.39	-.001	.98
I am a very punctual person	.058	.10*	-.124	.00**
If I don't complete all I want to do in a day, I tend to feel frustrated.	.023	.51	.055	.10*
I like to spend time just talking with friends and family.	.030	.40	.071	.04**
I have a great amount of control over how I spend my time.	.010	.77	-.117	.00**
I tend to do most things on a regular, scheduled basis.	.059	.10*	-.116	.00**
I feel a great amount of time pressure.	.024	.49	.037	.26
I like to stay with a task until its completed, regardless how long it takes.	-.025	.48	.012	.73
People used to have more time than we do today.	.40	.25	-.041	.22
I think of time as a straight line.	.019	.59	.013	.69
I think of time as a circle.	.017	.63	.027	.41
Time heals all wounds.	-.004	.91	-.003	.932
The future looks brighter than the past.	-.116	.00**	.048	.16
What I don't get done today, I can always do tomorrow.	-.91	.01**	.008	.82
I prefer to know the ending time as well as the beginning time.	.021	.56	-.003	.93
I feel I have little control over my time.	.066	.064*	.010	.772
I try to group activities together as I can save time.	-.018	.61	.016	.63
I frequently lose myself in what I'm doing and forget about time.	-.022	.53	.041	.23
Time lost can never be regained.	.029	.41	-.055	.10*
I treat time as a scarce resource.	.039	.27	-.039	.25
I spend little time thinking about the future.	.30	.40	-.089	.01**
I would like the pace of my life to be slower.	.024	.49	-.042	.22
When I'm enjoying myself, I tend to lose track of time.	-.054	.14	.071	.04*
I spend little time thinking about the past.	.036	.31	-.132	.00**
The past is more important than the future.	.053	.15	.017	.62
The future goes on indefinitely.	-.025	.48	-.019	.58

## DISCUSSION

In spite of the fact that, for decades, marketers have used age as a key segmentation variable, "age is a poor predictor of a person's life cycle, health, work or family status, needs and buying power." (Armstrong and Kotler 2006 p. 168). There are seventy year olds who are indeed old, while many other

seventy year olds are physically and professionally active. With more women in the workforce, it is equally likely to see a woman in her forties caring for her own young children as it is for other 40 year olds to be caring for their children's children. Therefore, while chronological age may be highly correlated with life horizon, it is an unreliable proxy for understanding how individual's age considerations affect their behavior as consumers.

Much previous research has examined the role of psychological age – defined in a variety of manifestations – as compared to physical age. This study introduced a new type of age that may be somewhat psychologically defined. However, for the purposes of this study, little is said about the formal psychological nature of this construct. Rather, the non-chronological and internally defined life horizon is more akin to an individual's perceived biological clock in that it focuses on how much time individuals think they have left.

It would stand to reason, then, that those who perceive that they have 'all the time in the world' would neither feel rushed, nor particularly in need of schedules, planning, or timelines. An equally intuitive inverse is that those who perceive that the life horizon is short and who hear the moments ticking down quickly are more focused on living each moment to its fullest and scheduling and planning their time to ensure that none of it is wasted.

## LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

There are several limitation to the research presented here. One limitation is that of the sample. While the sample size is large, the data collection method did not result in a random sample. Therefore, caution must be used about generalizing the findings. The research is exploratory in nature in that it introduces a new age concept, life horizon. There are no previously validated measurement instruments of this concept, so the 10 point scale used may have some validation issues. And finally, the research looked at chronological age and life horizon, but did not examine cognitive age.

There are many directions that future research could follow. One of the most potentially fruitful areas would be to explore how life horizon relates to cognitive age, using the scales utilized by Van Auken, Barry & Bagozzi (2006) in their cross country study. Another direction is to examine the life horizon concept in a cross-cultural setting to see if the concept is culturally bounded. Learning how life horizon may be related to consumer decision-making and planning horizon may also be an appropriate focus for future research. The options for future studies in this area appear numerous with the potential for adding substantial understanding to how and why consumers behave as they do in the market place.

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