Selfless Time

Urien, Bertrand

Postprint / Postprint
Zeitschriftenartikel / journal article

Time & Society

Selfless Time

From life space to death anticipation

Bertrand Urien

ABSTRACT. Time studies in psychology or in consumer behaviour, traditionally think of the personal future as a Lewinian 'life space', containing several well-known time dimensions: future time perspective, future anxiety, and hope. Those dimensions are used to test the predictive power of various behaviours (attitudinal change, health behaviour, delay of gratification, etc.) or more specifically: the temporality of consumer behaviours as implied in consumption of cultural goods, exploratory consumer behaviour, or mail order purchasing. However, the personal future is flexible enough to enable individuals to project themselves well beyond this 'life space' into a post-mortem future. In this context, I propose to look at the concept of death anxiety. Researchers studying the influence of time representations on human behaviour should not limit themselves to apprehending the traditional dimension of personal future; they could integrate an understanding of the future that projects us beyond physical death. This requires first a close examination of the relationships between death anxiety and the traditionally applied future dimensions, and then broadening the scope to various human and consumer behaviours still unexplained by traditionally acknowledged temporal dimensions. I first present the classical Lewinian notion of personal future, highlighting some of its aspects, to show how death anxiety is part of the personal future, and presents major behavioural impacts. Second, by using structural equation modelling, and a multi-group approach, I present an empirical study aiming to show the nature and the intensity of the links between death anxiety and the other traditionally applied dimensions. KEY WORDS • death anxiety • generativity • personal future • psychological time • Terror Management Theory

VOL. 16 No. 2/3 (2007), pp. 367–386 0961-463X DOI: 10.1177/0961463X07080273
www.sagepublications.com

Introduction

'Temporal consciousness cannot be divorced from the awareness of death.' With this phrase, Clay Routledge and Jamie Arndt (2005) draw our attention to the potential contiguity of two fundamental human faculties, thinking about time and death anticipation. The aim of this article is to integrate death anticipation in the conceptual structure of our time experience. Close relations between death and time have already been demonstrated. For example, Held and Nützinger (1998) and Sabelis (2002) discuss the dominance of 'clock time' as the ultimate mode for conjuration of finitude. However, if we want to expand our scope beyond relations with 'clock time', we should envisage death with other forms of time experience, also qualified by perception, perspective or temporal orientation.[1] Very early, the French philosopher Guyau (1890) considered time as a product of the consciousness and wrote that the past and the future are represented. In keeping with the tradition of Lewin (1942), psychologists and social psychologists such as Fraisse (1967), Nuttin (1980), Raynor and Entin (1982), have contributed considerably to the structuring and the knowledge in this field of research. Moreover, among the three temporal zones, the future has been the object of specific research (Bouffard, 1993; Zaleski, 1996, 2005), as much as on the means of apprehending and living it cognitively and emotionally as on its behavioural impact (Strathman and Joireman, 2005). But what future are we discussing? Since the works of Lewin (1942), most works traditionally think of the personal future as a Lewinian 'life space' (Bergadaà, 1990; Strathman and Joireman 2005). In psychology for example, this 'life space' contains several well-known dimensions that are used to test the predictive power of various behaviours (attitude change, health behaviour, delay of gratification, etc.). In marketing and consumer behaviour, other behaviours are tested (consumption of cultural goods, exploratory consumer behaviour, mail order purchasing, etc.). Yet, Boyd and Zimbardo (1997) strayed onto another path by integrating what happens in the afterlife into their reflection about time. Adam and Groves (2007) outline the importance of the encounters with death to 'tame the future'. Finally, Routledge and Arndt (2005: 59) add that, 'Being able to think about the future means being able to think about a future without us in it.' In keeping with the works of these authors, this article proposes to integrate death anticipation, and more specifically death anxiety, into the structure of one's personal future. On the individual level, this new integration requests first a close examination of the relationships between death anxiety and the traditional dimensions of the future, and should then broaden the scope of understanding of various human and consumer behaviours still unexplained by traditional temporal dimensions. If the behavioural impact of death anxiety has already been studied both in psychology (Tomer and Eliason, 1996) and consumer behaviour (Bonsu and Belk, 2003; Urien, 2003), there rarely have been

works addressing the topic in terms of time studies. Yet, it is important that researchers studying the influence of time representations on human behaviour, and consumer behaviour, should not limit themselves to apprehending the traditional dimensions of the personal future but integrate also the future which projects us beyond our physical death.

This research firstly presents the classical Lewinian notion of personal future, highlights some of its aspects, shows how death anxiety is part of the personal future, and presents some of the major behavioural impacts. Second, by using structural equation modelling, and a multi-group approach, we present an empirical study aiming to show the nature and the intensity of the links between death anxiety and other dimensions of temporal orientation.

Death Anxiety: Personal Future and Selfless Anticipation

'Man is the only animal aware of his own mortality. Without the awareness of one's own finiteness, there can be no consciousness of one's past – no remorse, nor nostalgia – and no consciousness of one's future – in other words, no consciousness of time' (Piettre, 1994: 117, author's translation). Paul Fraisse, an eminent psychologist of time, wrote that philosophical reflection had preceded scientific reflection on a number of issues, and that this process was certainly still underway. After presenting the work of several philosophers on the links between death awareness and the representation of time, I will argue how death anxiety can be integrated into the network of the personal future.

Death awareness and personal future

The subjective experience of time and, more specifically, the representation humankind has constructed of time, has been one of philosophy's favourite topics. Nonetheless, the variety of ways in which philosophy grasps time should prompt us to caution. It led Pélicier (cited in Sutter, 1983) to write that all philosophers have dealt with time without giving any definite answers, since none of them talk about the same thing. He continues by stating that they are only philosophers in one particular moment and grasp time on the basis of their own personal issues that depend on their own life stories and status. While time is thought of as a 'dilation of the soul' by St Augustine or as an 'intimate consciousness' by Husserl, it is a space of possibilities and action projects for Heidegger (1927/1986). According to Heidegger, 'authentic' time is the open-ended time of projects; it is the characteristic of human reality to be projected before one's own situation. Our relation to time is determined by the tragic fate of our personal future and the awareness that our future's limitation, that is, of the more or less 700,000 hours theoretically at our disposal. 'Authentic time' is

not constructed by the individual alone but is rather the result of his/her awareness of his/her own death: human existence is finite and it is precisely the 'anticipation of one's own finiteness', the co-presence of death – source of existential anxiety – that reveals the future, a temporal perspective full of possibilities and plans. French philosopher Marcel Conche (1980: 71) wrote: 'Death is my fate. So be it. I anticipate it. I refuse to wait until time passes and let the future come to me. I anticipate the future; I decide what it will be; I determine it' (author's translation). Confronted with the 'destined power' of time, several reactions are possible. Conche suggests that there are several types of illusions that make it possible to forget about one's mortality: the 'religious illusion' opens up the hope of life after death; the 'moral illusion' awards hope of eternity on the basis of merit; the 'social illusion' works, thanks to prestige, fame, consideration and glory; the 'ontological illusion' relies on possessions and the 'apparent consistency of reality' (author's translation); finally, with the 'practical illusion', oblivion is granted, thanks to action: by focusing on my task, action makes me forget my own mortality. Thus, from a metaphysical point of view, death awareness is not only a cornerstone of our awareness of time, but it also generates behaviours aiming at supporting or abolishing finiteness.

Personal future: From life space to death anxiety

Ever since Lewin, the personal future is considered as a possible extension of one's life space. Lewin writes that life space is extended during what he calls 'the psychological time dimension'. The psychological time dimension of one's life space increases from hours, days and months up to years. In other words, young children live in the immediate present. As they age, an evermore distant psychological past and future affects their present behaviours. Psychologists of time, such as Fraisse (1967), Nuttin (1980), Bouffard (1993), Zaleski (1997, 2005) have followed this approach and have shown how several different dimensions of one's personal future may affect one's behaviour. Nuttin even went so far as to create a theory of human motivation based on the notion of personal future. He considers that the future is a pivotal life space, as opposed to the present and the past, which are of lesser importance. Several dimensions structure our future. Among these dimensions, the best-known are the future time perspective (FTP), the consideration of future consequence, anxiety, hope and future-orientation. The future time perspective represents all the goals of an individual, that is, 'all future mental representations associated with an affect' (Bouffard, 1993, author's translation). There are two components in the FTP: a cognitive component and an affective component. The cognitive component of the FTP is made up of 'goal objects' (Nuttin, 1980), which are more or less distant from the present. According to Lens (1993), someone whose goals are mainly located in the immediate future has a limited FTP, whereas someone

whose goals extend to a distant future has an extended FTP. Moreover, Strathman et al. (1994) developed a new dimension, the consideration of future consequences (CFC), which deals with 'the extent to which individuals think about the relatively immediate versus distant consequences of their potential actions'. As for the affective dimension of the FTP, it corresponds to one's affective attitude towards the future, which in turn consists of both a positive and a negative side. The manifestations of the positive side are optimism and hope. Thus, according to Zaleski (1993), the future, when considered as an environment conducive to making plans and reaching one's goals, usually takes on a positive motivational dimension in that it prompts one to constructive action and to maintaining it. Snyder (1991) and Snyder et al. (1996) is unquestionably one of the specialists in the field of hope. The negative affective attitude has been considered from the angle of anxiety with regard to the future. Zaleski (1997) defines it as a state of anxiety, uncertainty, fear, or concern caused by unfavourable changes that could occur in one's distant personal future. Predominant temporal orientation is yet another important factor. According to the definition given by Nuttin (1980), this temporal orientation is the preferential or predominant orientation of an individual towards one of the three temporal directions: past, present or future. Thus, if an individual's centre of interests, concerns or conversations pertain to the future, he is then said to be future-oriented.

If temporal orientation, in its broader sense, is one of the most fundamental aspects of humanity, most of the publications devoted to it consider the future as a Lewinian life space and do not take into account events that may occur after this life space. Yet for Boyd and Zimbardo (1997) the future can be partitioned into pre- and post-death time frames. While the traditional psychological and 'mundane' future begins in the present and extends to physical death, this new notion of a transcendental future starts with physical death and goes on to infinity. The transcendental future perspective may contain goals such as being reunited with deceased loved ones, eternal life, reincarnation, etc. According to the authors, the transcendental future perspective is a personality trait with individual differences; it also influences our present behaviour.

The main contribution of Boyd and Zimbardo (1997) has been to free the future perspective from the physical limit imposed by death. Nevertheless, it is important to underline that they insist on cognitive components of the transcendental future perspective that are generally positive (being reunited with deceased relatives, etc.). Just like the classical future perspective has affective dimensions, be they negative (anxiety towards the future) or positive (hope, optimism), the transcendental future perspective must have an affective component to deal with the anticipation of the absence of one's self. The present article insists on the negative affective component, that is, death anxiety. Death anxiety is rarely dealt with from the point of view of time, and yet it belongs to the network of the personal future (*pre- and post-death*). Furthermore, this kind

of 'selfless time' has been the topic of important studies dealing with its content and influence on behaviour.

Death anxiety: A definition

Since the seminal work of Feifel (1955), more than 1,000 papers have dealt with death anxiety, its definition, its causes and its behavioural consequences. Few authors, among them Dickstein (1975), Neimeyer (1994), have ventured to define the concept. On the basis of these various definitions, I will first give my own definition of death anxiety and then outline its main characteristics. I define death anxiety as a set of negative emotional reactions of variable intensity induced by selfless anticipation (Urien, 2003). While many authors qualify death anxiety as an emotional reaction, Neimeyer (1994) is more precise and, under the generic name of death anxiety, includes 'a set of attitudes characterized by fear, threat, anxiety, illness, discomfort, or any other similar negative feeling'. Furthermore, recent attempts at defining death anxiety speak about 'a state during which the self does not exist' (Tomer and Eliason, 1996). In the context of time, we will speak about selfless anticipation. Nevertheless, whereas early work presented death anxiety as a one-dimensional construct only (Templer, 1970), at the present time some authors wish to differentiate several sub-dimensions of anxiety, such as the anxiety regarding one's physical state after death, one's destruction, or the loss of one's social identity. In actual fact, according to Neimeyer (1994), it seems that there exists a general anxiety towards the disappearance of one's self. This general anxiety can then be subdivided according to the kind of thought – pertaining to death – that causes anxiety (physical destruction, loss of one's soul, loss of one's identity, etc.) (Urien, 2003).

Selfless Time, Death Anxiety and Behavioural Adaptation

Regarding behavioural reactions, various theories have shown that individuals develop different means of self-preservation. These means can be direct and/or indirect, and take the form of physiological necessities and symbols respectively. Theorists of death anxiety have only focused on symbolic forms in their investigations. In this respect, two major consequences have appeared: the first was developed in a pioneering theory, the Terror Management Theory (TMT) (Solomon et al., 1991), which deals with faith in a cultural world-view and self-esteem, whereas the second deals with generativity and 'outliving the self' (Kotre, 1984).

Selfless anticipation and terror management

First identified by Jeff Greenberg, Tom Pyszczynski and Sheldon Solomon (Greenberg et al., 1990), TMT has been the subject of more than 200 empirical studies. It states that death anxiety is the emotional manifestation of the fundamental instinct of self-preservation. Preservation of the self may be fulfilled through direct means (e.g. remaining healthy, avoiding bad food), but also, more importantly, through symbolic means related to the individual's culture. To be more precise, there are two symbolic and closely linked self-preservation mechanisms: (1) unfailing support of world-views and the values of one's culture, and (2) increase in self-esteem – a goal that may be reached by adopting culturally valued behaviours. Concerning adaptation based on faith in a cultural world-view, the theory states that we construct a culture and take part in it so as to minimize the concern associated with death or the loss of self. While culture can offer immortality through religion, it also contributes to creating a cultural framework or 'world-view' composed of values clearly identifiable by individuals. As for adaptation grounded on self-esteem, the more an individual subscribes to and respects the values of his/her culture, the more his/her self-esteem increases and the less anxious he/she feels about his/her own death. Experimental studies have shown that behavioural adaptation, for example, could lead to: (1) risky behaviour (Orit Taubman Ben-Ari, 2000), (2) conspicuous consumption and greed, (3) pro-social behaviours, (4) a decrease in high-calorie fatty food intake that has a negative impact on both the body and self-image (Ferraro et al., 2005).

When selfless anticipation 'outlives the self': Generativity

While, for Thomas (1995), 'generativity answers the human quest for immortality', Kotre (1984) considers it to be a kind of 'outliving of the self'. After presenting the concept of generativity, this part will highlight one of its possible manifestations, that is, 'time capsules'.

The concept of generativity was first introduced by Erik Erikson (1963) over 40 years ago. 'Generativity versus stagnation' is the seventh of the eight stages in Erikson's human life cycle theory. It is first associated with the middle adult years. Bearing and raising children are the first experiences of generativity. However, a broader definition of this concept includes different life settings, such as 'professional activities, volunteer endeavours, participation in religious and political organizations, neighbourhood and community activism, friendship and even leisure time pursuits' (McAdams and de St. Aubin, 1998). McAdams and de St. Aubin (1998) suggested a typology of generativity that includes different generative behaviours (McAdams and de St. Aubin, 1992): creating, maintaining and offering one's self. By 'creating', the authors mean a generative

behaviour towards things and people, figuratively and literally giving birth to both (McAdams et al., 1998). It involves 'the creation of a product or legacy in one's own image . . . a powerful extension of the self (idem)' (McAdams et al., 1998: 23) as well. 'Maintaining' is another kind of generative behaviour. It consists of the conservation or the preservation behaviours that are valued. McAdams et al. (1998) mention behaviours such as preserving good traditions. 'Offering' corresponds to the offering or the gifts of things that have previously been created and maintained, or the handing down of something or someone to the next generation. This can be understood as a way of extending one's existence beyond physical death to reach symbolic immortality. According to McAdams et al. (1998), 'generativity is tied up with a society's overall conception of time'. If we are talking about creating new things or human beings that will outlive the self, generativity then deals with the long-term future. Maintaining, preserving and passing on goods and traditions point to the past. Therefore, by creating a link between different generations, generativity bridges the past and the future. Generativity could induce such behaviours as ecologically friendly behaviour (Urien and Kilbourne, 2007).

An illustration and manifestation of the concept of generativity is the phenomenon of 'time capsules'. A time capsule contains goods and/or information that are representative of life at a given point in time, and which could be used as a means of communication with people in the future. The common characteristic of all existing time capsules is probably the need to transcend the end of one's personal future by means of a gift that reflects a given period of time, the need to preserve it and to pass it on to future generations.

I have previously discussed how temporal orientation, and more specifically the personal future, has been considered and dimensioned almost exclusively as a 'life space'. Yet philosophically and psychologically, certain authors show that the representation of the future cannot be envisaged without integrating the anticipation of self-absence: death. I have insisted here on the affective dimension linked to this anticipation: death anxiety. Its main behavioural influences have also been introduced. In part two, I aim to examine in depth the relations between death anxiety and certain traditional dimensions of the future. If death anxiety belongs to the structure of the personal future, what are the links and the intensity of these links with the traditional dimensions of temporal orientation and those of the personal future in particular? Is future anxiety linked to death anxiety? Do individuals orientated towards the future have the same intensity of death anxiety as individuals orientated towards the past or the present? These are the questions that the following empirical study will attempt to address.

Research examples

Few studies deal with the links between different temporal dimensions and death anxiety. Bascue et al. (1977) have shown, for example, that based on a sample of 88 77-year-old Americans, death anxiety is associated with an orientation towards the future (Bascue et al., 1977). Dickstein (1975), based on a sample of 185 American students and using Thematic Aperception Test (TAT) tests to measure temporal orientation, has shown a link between orientation towards the past and death anxiety. However, no links were found with an orientation towards the future. What then are the links with other temporal dimensions? On other groups? On different age categories? On different cultures? By using other methodological tools?

This study will contribute to answering these questions by studying more specifically the links that exist between death anxiety, future anxiety and predominant orientation towards the future. In contrast with these dimensions linked to the future, the study of links with an orientation towards the past and the present will also be integrated. Each construct has been operationalized by an indicator of measure and I have used so-called 'second-generation' processing methods. After validating the different measurement models corresponding to the indicators retained, we will then be able to envisage the links existing between the different latent factors.

Operationalization of the Constructs and Presenting the Scales

The indicators retained to measure death anxiety, predominant temporal orientation towards the future, the past and the present, and, finally, future anxiety, are introduced successively.

A measure of death anxiety

The construction of scales to measure this construct has been particularly developed in recent years due to an interest in a better understanding of the individual differences regarding death anxiety, their origins and their consequences. Robert Neimeyer, of the University of Memphis, is currently the specialist in this area. Although numerous indicators can be noted at the present time (for a summary, see Neimeyer 1994, 1997–8), the author, however, highlights two important problems: discordant definitions of the concept and a lack of a theoretical base, to the point that St-Amour and Kiely (2000) ask if the function of the death anxiety scale is to define the concept. From the middle of the 1950s until the end of the 1970s, indirect tests with a projective tendency were used. Among these tests I note, for example, the 10 'TAT' drawings that

refer to death (Epley and Rick, 1963, cited in Dickstein, 1975). However, the creation and the use of these tools rapidly declined, notably due to the cumbersomeness of an important manipulation, a lack of validity and reliability, and the arrival of much more practical attitude scales that made it possible to directly apprehend death anxiety. In fact, 95 percent of the studies published in psychology on this topic use these types of test (Neimeyer, 1997–8). Among the better known, we cite Templer's (1970) 'Death Anxiety Scale (D.A.S)', Colett and Lester's (1969) the 'Fear of Death Scale (F.D.S)', Neimeyer's (1994) 'Threat Index (T.I)' and Dickstein's (1975) 'Death Concern Scale (D.C.S)'. Moreover, the last scale is composed of 30 items and 2 dimensions: one dimension representing the conscious meditation of death, and a second dimension representing a negative evaluation of it. However, only the second factor is considered as specifically characterizing death anxiety. The other dimension does not correspond to negative emotional reaction towards death but to the consciousness of it. In addition, a more recent analysis (Klug and Boss, 1976) shows that the factor relative to death anxiety is only composed of five items. I can also add here that this factor is apprehended in a general, undifferentiated manner. Furthermore, this scale is the only one that has been validated to date in a French context (Urien, 2001).

Measures of predominant temporal orientation and future anxiety

I have chosen Usunier and Valette-Florence's 'Times Styles Scale' (1994) in order to measure temporal orientation. It should be noted here that in its complete version, this scale measures 4 dimensions and 8 sub-dimensions in 29 items. I have kept the dimensions that seem pertinent for this study, that is, the predominant temporal orientation towards the past and the predominant orientation towards the future. This scale offers very good psychometric qualities and has often been used (partially or completely) on various and numerous populations and in different cultural contexts (Valette-Florence et al., 2001), resulting in many relatively recent publications (for a summary, see Usunier and Valette-Florence in this issue).

This scale does not take into account present-orientation. I have used one of the dimensions of the temporal orientations scale developed by Ko and Gentry (1991), and by Gentry (1993) for this specific dimension. The reliability of the measure of this dimension is adequate ($\alpha = 0.74$). The authors have attempted to test the intercultural validity of these scales on two samples (American and Thai students) and to explore the sub-dimensions. However, only the present-orientation appeared to resist an invariance of factors.

Concerning future anxiety, we have used Zaleski's scale (1996). This one-dimensional scale, tested and validated on several American and Polish samples, has good psychometric qualities. It is composed of 29 items in all, 4 of which are

'buffers'. Moreover, in order to check the global convergent validity of the scale in relation to other ones that are conceptually close, the author correlated the Polish version of this scale with other anxiety scales. The coefficients obtained show that this type of anxiety is close to traditional conceptions of anxiety, be it Cattell's (1966) 'Overt-Covert Anxiety' (r = 0.48, N = 88), Taylor's (1953) 'Manifest Anxiety' (r = 0.64, N= 83) or Spielberger 's (1971) 'Trait Anxiety' (r = 0.61, N = 135). In fact, if all of these results show that all of these scales belong to the same network of the conceptual sphere of anxiety, the scale of future anxiety, however, conserves its own specificity and its own discriminating utility. Finally, this scale shows encouraging psychometric qualities as well as a cross-cultural method central to the process of creating a scale.

Validation of the scales used

I have worked from two samples of individuals of French origin: one sample of 349 young adults (average age: 21) and a sample of 302 older adults (average age: 47). Six hundred and fifty-one questionnaires were then used for the data analysis. According to the works of Gesser et al. (1987), the individuals in their 40s would have a higher death anxiety than the individuals belonging to other age groups. In fact, these two samples have multiple interests: they allow us to have differences in mean age that are important enough to detect a potential variation in the intensity of the level of death anxiety whatever the meaning of this variation. It also makes it possible to analyse the stability of relations between death anxiety and the different traditional temporal dimensions. Considering the size of our samples and the nature of our variables, I have retained more specifically the method of estimation according to the maximum likelihood. Concerning the translation of the scales into French, I have used the technique of blind parallel translation: each of the three translators involved did his own translation from the source language to the target language independently, then the different versions were compared and a final version was made.

Test of the short form scale of death anxiety

As recommended by Klug and Boss (1976), the texts were administered to the two samples in its original version. An exploratory factorial analysis then made it possible to keep items whose 'loadings' were superior to 0.50 on one factor and weak on the other factor. My analysis was based uniquely on the dimension concerning death anxiety. This analysis permitted me to find again the five items that specifically measure death anxiety. A confirmatory analysis to one latent factor and five variables of measure was then realized. Validation of the measures was done based on the confirmatory analyses. The adequacy of the

final specified model of measure with the data is satisfactory on the two samples (comparative fit index [CFI*] of 0.99/0.98). The reliability tests give satisfactory results. Indeed, the calculation of Joreskog's ρ gives a result of 0.88 for the young adults and 0.82 for the older adults. In order to be certain of the convergent validity, I retained only three indictors: a significant link between the variables of measure and their latent factor, satisfactory criteria of adjustment and, finally, factorial weights > 0.5. Since all of the criteria have been observed, we can then conclude that the reliability is good and that the validity of the scale is satisfactory for the two samples.

Test of the future anxiety scale

The exploratory factorial analysis done on the 25 statements showed the existence of a main factor on the two samples. I therefore retained the first component and specified a model of measure to one factor. In the end, I obtained a one-dimensional structure and 13 variables from the 2 samples. These variables have a significant liaison with their latent factor. The adequacy of the specified models of measure with the data is very satisfactory (CFI* of 0.98/0.96). The coefficients of reliability are good (Joreskog's ρ is 0.90 for the young adults and 0.92 for the older adults). The Z tests are all significant and the supplementary guarantee of convergent validity are given by satisfactory criteria of adjustment and factorial weights all superior to 0.5.

Tests of future-orientation, past-orientation and present-orientation scales

After a confirmatory analysis of the items corresponding to predominant temporal orientations, we obtain the two dimensions corresponding to future-orientation and past-orientation on the two samples. The coefficients of reliability are good (ρ of 0.78 and 0.77 for orientation towards the past, and 0.78 and 0.67 for orientation towards the future). With a CFI of 0.95 and 0.97, the two specified models have a good quality of adjustment. All of the Z tests are significant, and all of the statements have a factorial weight > 0.5, which attest to the convergent validity.

Regarding orientation towards the present, a confirmatory analysis with a latent factor and 6 variables of measure has been done. An in-depth reading of the different variables shows that they express an active search for pleasure very close to hedonism. The quality of the fit index are excellent for both the samples of young adults and older adults. The indices of reliability are good (Joreskog's ρ: 0.86/0.85) and the convergent validity is satisfactory. The quality of the indicators of adjustment and the fact that all of the statements except one have a factorial weight > 0.5 are additional guarantees of convergent validity.

Moreover, the correlation analysis between the different latent factors corre-

TABLE 1
Correlations between death anxiety and future anxiety, future-orientation, past-orientation and present-orientation

	Death anxiety	
	Young adults (average age: 21 years)	Older adults (average age: 47 years)
Future anxiety	0.41	0.43
Future-orientation	0.17	0.20
Past-orientation	0.31	0.35
Present-orientation	–0.10	–0.12

Note: All of the Z tests are significant, p = 5%

sponding to each of the traditional temporal dimensions mobilized shows that their discriminating validity is established.

Analysis of the links between the traditional temporal dimensions and death anxiety

After having examined the psychometric quality of each scale, we can now envisage a correlational analysis between the different latent factors. Having two samples makes it possible to observe the stability of the coefficients obtained. Concerning the quality of the model and considering the lack of normality of the data distribution, the robust fit index has been retained. The value of the CFI (0.91), of the incremental fit index (IFI) (0.91) and the root mean square error of approximation (RMSEA) (0.053) permits us to maintain that our models possess a satisfactory quality of adjustment.

The analysis of the results shows that death anxiety is positively and significantly correlated to future anxiety, orientation towards the past and orientation towards the future. On the other hand, the correlation coefficient is negative but significant with orientation towards the present. One will also note that the intensity of the correlation coefficients is different, depending on the temporal dimensions, and that these coefficients vary slightly between the two samples.

Moderating effect of age

We will successively study the moderating effect of age on the variation in the intensity of death anxiety between the two samples, and the variation in the intensity of correlation links between death anxiety and the other temporal dimensions studied in this research. This last analysis will make it possible to know if the slight variations observed are significant or not.

TABLE 2
Results of the univariate descriptive statistics

	Death anxiety	
	Mean = m	Standard Deviation = σ
Young adults *N*= 349	$m_1 = 9.46$	$\sigma_1 = 3.85$
Older adults *N* = 302	$m_2 = 10.39$	$\sigma_2 = 3.63$

Study of the influence of age on the intensity of death anxiety

We have tested the existence of significant differences between the mean death anxiety of young adults and older adults. This mean was calculated based on the summations of the scores obtained on the five items constituting death anxiety. The results of the univariate descriptive statistics are given in Table 2.

The calculation of the Z test gives us a result of 3.17. Since the result is superior to 1.96, the bilateral mean comparison test shows that the differences in death anxiety are significant, $p = 5$ per cent. In our samples, death anxiety felt at 47 years of age is then slightly more important than it is felt at 21 years of age.

The influence of age on the intensity of the correlation links between death anxiety and the other temporal dimensions

According to Byrne's (1994) recommendations on the subject, studying the moderating effect of a variable on the links between latent factors amounts to carrying out a multi-group analysis by testing the invariance of the parameters of measure and the parameters of correlation on several samples. This is precisely why I worked with two samples: one made up of young adults, the other of older adults. In order to do so, I used Lagrange's test, which evaluates the effects of liberating the parameters fixed in the initial specified model on the decline of the 'Chi square', and makes it possible to improve the quality of the model. I then followed the classical method recommended by Byrne and I then simultaneously tested the invariance of the measurement models and the invariance of the correlation links. I set constraints of equality between the parameters of measure (coefficients of regression of the different variables of measure on their latent factor) for the two samples, and constraints of equality between the parameters corresponding to the correlation coefficients between the latent factors obtained on the sample of the young adults and those obtained on the sample of older adults. The analysis of the results show that the quality of the multi-group model seemed satisfactory on the whole (Chi square = 1458, d.f. = 763, NFI = 0.901, CFI = 0.902, RMSEA = 0.053). The observation of

Lagrange's multivariate tests on the 'constrained' parameters of the measure of death anxiety shows none of them are significant. This means that there is invariance in the instrument of measure on the two samples. However, this observation of Lagrange's test on the 'constrained' measures of future anxiety shows that two reductions of the Chi square (out of 13 possibilities) appear significant if the constraints of equality are eliminated. There is then only 'partial invariance' (Byrne, 1994) of the instrument of measure of future anxiety. Finally, Lagrange's test is negative on the different constrained parameters related to the correlation links between death anxiety and the other temporal dimensions (future anxiety, orientation towards the future, the present and the past). This signifies that there is invariance in the intensity of the links. The slight differences observed between the two samples in Table 1 are then not significant.

Interpretation of the Results

The analysis of the results is interesting for several reasons. First, I have to admit that fundamental dimensions such as the predominant temporal orientation and future anxiety are empirically linked to death anxiety, and this on two samples of a suitable size. Moreover, these links are stable no matter what the age group. In a more detailed approach, one will observe at first the important links between apprehension of the *pre* and *post-mortem* future (future anxiety and death anxiety). If some results have shown positive links between short-term classical anxiety and death anxiety, my study shows that these links also exist when anxiety towards a more distinct future is taken into account. If, as stated by Zaleski (1996), this future anxiety excludes death anxiety in that it refers to a future that 'we will live and act in', death can be, however, considered as a singular event of that future; and, life after death as a particular period of the latter. The correlation between future anxiety and death anxiety can be interpreted in the following manner: the more one is anxious faced with one's life space, the more one is anxious faced with one's death space.

The existence of a liaison, albeit moderate, with orientation towards the future is initially more surprising. In fact, it can be considered that the fact of being orientated in a predominant way by inclination towards one's future goes hand in hand with a more acute consciousness of the limits of this future and hence a more pronounced anxiety regarding it.

The links with orientation towards the past are more pronounced but still positive. These results confirm those of Dickstein (1975: 154): orientation towards the past could be 'a direct consequence of the consciousness of death and represents an attempt to be content with the experience and to resist the rapid passing of time'. Finally, a very reduced negative link with orientation

towards the present, stable on the two samples, is observed. The more one would be anxious faced with death, the less one would be orientated towards the present that consists in the active search for pleasure. However, the low intensity of the links gives a limited significance to these results.

Regarding the modifying effect of age, the result obtained shows that an older age provokes a slight significant increase in death anxiety. These results are in accordance with those of Gesser et al. (1987), who have observed the existence of a curvilinear relation between the two variables, namely, that death anxiety is highest during mid-life.

Conclusion

The following observation was the starting point of this article: apart from the work done by Boyd and Zimbardo (1997), work pertaining to the psychology of time considers the personal future principally as a life space. Yet this personal future is flexible enough to enable individuals to project themselves well beyond this life space into a post-mortem future. Therefore, I suggested taking the concept of death anxiety into account in the structure of the future. If philosophical reflection precedes scientific reflection, it seems important that researchers studying the influence of time representations on human behaviour, for example consumer behaviour, should not limit themselves to apprehending the future as a life space. It is also important that they explore the personal future that projects us beyond our physical death and induces behavioural reactions, such as the ones presented earlier.

The consequences, in terms of future research, present different aspects:

- Beyond the connections with the traditional temporal dimensions of the personal future, what are the links with the other future dimensions such as 'Consideration of Future Consequences', 'Future Time Perspective', 'Hope'?
- I have studied here the role of age as a moderating variable of the links between death anxiety and certain traditional temporal dimensions. In spite of a slight increase in death anxiety during ageing, I have empirically shown that the intensity of the links with the other temporal dimensions is invariant. Likewise, studying the role of another moderating variable, such as religiosity, would be interesting.
- In the present article, I have mainly insisted on the negative affect pertaining to post-mortem ideas (e.g. loss of social identity). Nevertheless, some authors underline an aspect that has been rather neglected by academia, namely the manifestations of death acceptation (Wong, 2000). In fact, one of the possible means of defending oneself against the anxiety associated with 'not being anymore' is to do away with the desire to 'be' by cutting oneself off from the

rest of the world. In this case, the question is how are death acceptation and traditional future dimensions interconnected?

Note

1. Two meanings of temporal orientation are found in the literature: the strict sense of temporal orientation which corresponds to 'the predominant orientation' towards one or the other traditional temporal zones (past, present, future) and the broader sense of the term, which encompasses all of the temporal dimensions concerning the representation of time. The latter is used in this introduction.

References

Adam, B. and Groves, C. (2007, forthcoming) Future Matters, Marking, Making and Minding Futures for the 21st Century.

Bascue, L. O., Lawrence, R. E. and Sessions, J. A. (1977) 'Counselor Experiences with Client Death Concerns', *Rehabilitation Counseling Bulletin* 1: 36–8.

Bergadaà, M. (1990) 'The Role of Time in the Action of the Consumer', *Journal of Consumer Research* 17(3): 289–302.

Bonsu, S. K. and Belk, R. W. (2003) 'Do Not Go Cheaply into That Good Night: Death-Ritual Consumption in Asante, Ghana', *Journal of Consumer Research* 30: 41–55.

Bouffard (1993) 'Buts et Perspective Future' [Goals and Future Perspective], *Revue Québecoise de Psychologie* 14(1): 61–8.

Boyd, J. N. and Zimbardo P. G. (1997) 'Constructing Time after Death', *Time and Society* 6(1): 35–54.

Byrne, M. B. (1994) *Structural Equation Modeling with EQS and EQS/Windows*. Thousand Oaks, CA: Sage.

Cattell, R. B. (1966) 'Anxiety and Motivation: Theory and Critical Experiments', in C. Spielberger (ed.) *Anxiety and Behaviour*. London: Academic Press.

Colett, L. and Lester, D. (1969) 'The Fear of Death and the Fear of Dying', *Journal of Psychology* 72: 179–81.

Conche, M. (1980) *Temps et Destin*. Éditions de Mégane

Dickstein, L. (1975) 'Self-Report and Fantasy Correlates of Death Concern', *Psychological Reports* 37: 147–58.

Erikson, E. (1963) *Childhood and Society*, 2nd edn. New York: Norton.

Feifel, H. (1955) 'Attitudes of Mentally Ill Patients toward Death', *Journal of Nervous and Mental Disease* 122: 375–80.

Ferraro, R., Shiv, B. and Bettman, J. R. (2005) 'Let Us Eat and Drink, for Tomorrow We Shall Die: Effects of Mortality Salience and Self-Esteem on Self-Regulation in Consumer Choice', *Journal of Consumer Research* 32: 65–75.

Fraisse, P. (1967) *Psychologie du temps*. Paris: PUF.

Gentry (1993) 'Searching for Etic and Emic Notions in Measures of Personal Time Orientation', Working Paper.

Gesser, G., Wong, P. T. P. and Reker, G. T. (1987) 'Death Attitudes across the Life-span:

The Development and Validation of the Death Attitude Profile (DAP)', *Omega* 18: 109–24.

Greenberg, J., Pyszczynski, T., Solomon, S., Rosenblatt, A., Veeder, M., Kirkland, S. and Lyon, D. (1990) 'Evidence for Terror Management Theory II: The Effects of Mortality Salience on Reactions to Those Who Threaten or Bolster the Cultural Worldview', *Journal of Personality and Social Psychology* 58: 308–18.

Guyau (1890) *La genèse de l'idée de temps*. Paris, Félix Alan éditeur, seconde édition

Heidegger M. (1927/1986) *Sein und Zeit*. Trans. F. Vezin. Paris: Gallimard.

Held, M. and Nützinger, H. (1998) 'Pauselose Beschleunigung', in *Die Nonstopp-gesellschaft und ihr Preis*, Hirzel, pp. 31–44.

Klug, L. and Boss, M. (1976) 'Factorial Structure of the Death Concern Scale', *Psychological Reports* 38: 107–12.

Ko, G. and Gentry, J. W. (1991) 'The Development of Time Orientation Measures for Use in Cross-Cultural Research', *Advances in Consumer Research* (Association for Consumer Research) 18: 135–42.

Kotre, J. (1984) *Outliving the Self*. Baltimore, MD: Johns Hopkins University Press.

Lens, W. (1993) 'La signification motivationnelle de la perspective future', *Revue Quebécoise de Psychologie* 14(1): 69–83.

Lewin, K. (1942) 'Time Perspective and Morale', in G. Watson (ed.) *Civilian Morale*. Boston, MA: Houghton, Mifflin.

McAdams, D. P. and de St. Aubin, E. (1992) 'A Theory of Generativity and its Assessment through Self-Report, Behavioural Acts, and Narrative Themes in Autobiography', *Journal of Personality and Social Psychology* 62(6): 1003–15.

McAdams, D. P. and de St Aubin, E. (1998) *Generativity and Adult Development: How and Why We Care for the Next Generation*. Washington, DC: American Psychological Association.

McAdams, D. P., Hart, H. M. and Maruna, S. (1998) 'The Anatomy of Generativity', in D. P. McAdams and E. de St. Aubin (eds) *Generativity and Adult Development*, pp. 7–43. Washington, DC: American Psychological Association.

Neimeyer R. A. (1994) *Death Anxiety Handbook*. Washington, DC: Taylor and Francis.

Neimeyer, R. A. (1997–8) 'Death Anxiety Research: The State of the Art', *Omega* 36(2): 97–120.

Nuttin, J. (1980) *Motivation et Perspectives d'Avenir*. Presses Universitaires de Louvain.

Taubman-Ben-Ari, O. (2000) 'The Effect of Reminders of Death on Reckless Driving: A Terror Management Perspective', *Current Directions in Psychological Science* 9(6): 196–9.

Piettre, B. (1994) *Philosophie et sciences du temps, Que sais-je* [Philosophy and Time Sciences]. Paris: PUF.

Raynor and Entin (1982) 'The Function of Future Orientation as a Determinant of Human Behaviour in Step-Path Theory of Action', *International Journal of Psychology* 18: 463–87.

Routledge, C. and Arndt, J. (2005) 'Time and Terror: Managing Temporal Consciousness and the Awareness of Mortality', in A. Strathman and J. Joireman (eds) *Understanding Behaviour in the Context of Time, Theory, Research and Application*, pp. 35–53. Mahwah, NJ: Lawrence Erlbaum Associates.

Sabelis, I. (2002) Managers' Time: A Study of Time in the Work and Life of Top Managers. Amsterdam: Bee's Books.

St-Amour, L. and Kiely, M. C. (2000) 'Les échelles de mesure de l'anxiété face à la mort', *Frontières* 12(2): 45–54.
Snyder, C. R. (1991) 'The Will and the Ways: Development and Validation of an Individual-Differences Measure of Hope', *Journal of Personality and Social Psychology* 60(4): 570–85.
Snyder, C. R., Harris C. and Anderson J. R. (1996) 'Development and Validation of the State Hope Scale', *Journal of Personality and Social Psychology* 70(2): 321–35.
Solomon, S., Greenberg, J. and Pyszcyzynski, T. (1991) 'A Terror Management Theory of Social Behavior: The Psychological Functions of Self-esteem and Cultural Worldviews', in M. Zanna (ed.) *Advances in Experimental Social Psychology*, Vol. 24, pp. 93–159.
Spielberger, C. D. and Butler, T. F. (1971) 'On the Relationship between Anxiety, Curiosity and Arousal: a working paper', unpublished manuscript, Florida State University, Tallahassee.
Strathman, A., Gleicher, F., Boninger, D. S. and Edwards, C. S. (1994) 'The Consideration of Future Consequences: Wheighing Immediate and Distant Outcomes Behaviour', *Journal of Personality and Social Psychology* 25: 322–48.
Strathman, A. and Joireman, J. (2005) *Understanding Behaviour in the Context of Time, Theory, Research and Application*. Mahwah, NJ: Lawrence Erlbaum Associates.
Sutter, J. (1983) *L'anticipation*. Paris: PUF.
Taylor, J. (1953) 'A Personality Scale of Manifest Anxiety', *Journal of Abnormal Social Psychology* 48: 285–90.
Templer, D. I. (1970) 'The Construction and Validation of a Death Anxiety Scale', *Journal of General Psychology* 82(2): 165–77.
Thomas, L. E. (1995) 'Transcending, not Outliving the Self', *Journal of Aging Studies* 9(1): 21–31.
Tomer, A. and Eliason, G. (1996) 'Toward a Comprehensive Model of Death Anxiety', *Death Studies* 20: 343–65.
Urien, B. (2001) 'L'influence de l'anxiété face à la mort ssur le comportement exploratoire du consommateur' [Time and Exploratory Consumer Behaviour], paper presented at the 17th International Conference of the French Marketing Association, 22–3 May.
Urien, B. (2003) 'L'anxiété face à la mort et son influence sur le comportement du consommateur' [Death Anxiety and its Influence on Consumer Behaviour], *Recherche et Applications en Marketing* 18: 23–41.
Urien, B. and Kilbourne, W. (2007) *Generativity and its Relationship to Eco-Friendly Consumption Behaviour*. San Diego, CA: American Marketing Association (AMA).
Usunier, J.-C. and Valette-Florence P. (1994) 'Perceptual Time Patterns (Time Style): A Psychometric Scale', *Time and Society* 3(2): 219–41.
Valette-Florence, P., Ferrandi, J.-M. and Usunier, J.-C. (2001) 'Le temps des Consommateurs: Le cas du téléphone portable', *Revue Française de Gestion* 132: 112–18.
Wong, P. T. P. (2000) 'Meaning of Life and Meaning of Death in Successful Aging', in *Death Attitudes and the Older Adult: Theories, Concepts, and Applications*. Philadelphia, PA: Brunner-Routledge.
Zaleski Z. (1993) 'Attitudes face à l'avenir, espoir et anxiété', *Revue Québécoise de Psychologie* 14(1): 85–111.
Zaleski, Z. (1996) 'Future Anxiety: Concept, Measurement, and Preliminary Research', *Personal Individual Difference* 21(2): 165–74.

Zaleski, Z. (1997) 'Uncertainty of Personal Future and Social Influence Strategies in Work Settings', in E. Santos and M. Paixao (eds) *Counseling Theory, Research and Practice*. Coimbra: Coimbra University Press.

Zaleski, Z. (2005) 'Future Orientation and Anxiety', in A. Strathman and J. Joireman (eds) *Understanding Behaviour in the Context of Time, Theory, Research and Application*, pp. 125–41. Mahwah, NJ: Lawrence Erlbaum Associates.

BERTRAND URIEN is Professor of Consumer Behaviour at the University of Brest (France). His research focuses mainly on time orientation, death attitude and its influence on consumer behaviour. He is also director of 'ICI', the research laboratory in Economics and Management of the University of Brest. He has published articles in scholarly journals such as *Recherche et Applications en Marketing* and *Revue Française de Gestion*.
ADDRESS: Laboratoire ICI (EA 2652), IAE de Bretagne Occidentale, 12, rue de Kergoat – CS 93837 –, 29238 Brest Cedex 3, France.
[email: bertrand.urien@univ-brest.fr]