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The Time Styles Scale

A review of developments and replications over 15 years

Jean-Claude Usunier and Pierre Valette-Florence

ABSTRACT. This article builds on previous research that has led to the development of a psychometric scale designed for capturing individual time orientations over a 15-year period. The time styles scale was initially developed in France. Cross-cultural replications of the scale were undertaken in several countries (Germany, Hong Kong, Tunisia, Vietnam), with particular emphasis on the influence of language on psychometric measurement. We demonstrate the nomological validity of the scale by reviewing research that has assessed its ability to predict values, individual activity planning, attitudes towards waiting time, as well as buying and consumption behaviour. **KEY WORDS** • consumer behaviour • psychometric scale • time orientations

The Time Styles Scale: A Review of Developments and Replications over 15 Years

Perception of time is central to many marketing issues, especially consumer behaviour, marketing negotiations, and international marketing. Time is pervasive in marketing: to name but a few examples, products are time-bound (e.g. financial services), consumption processes depend on time as an input (e.g. convenience food versus traditional home cooking), consumption situations are situated in time, and buying decisions are embedded in a temporal frame. Since

most consumption and purchase decisions are made on an individual basis, understanding individual differences in attitude to time is central to the field of consumer behaviour and marketing.

Early research on time and marketing started from a perspective that was closely linked to the economic view of time, an intangible commodity that can be exchanged against money (e.g. Jacoby et al., 1976; Feldman and Hornik, 1981). The main focus in the 'commodity' paradigm of time was on time-use patterns and how consumers spend time on activities relating to consumption such as information search, acquisition, purchase decision, and consumption itself. Time was perceived as 'structured', divided between work at the workplace, homework, and leisure. Homework time was viewed as a close substitute for the acquisition of goods and services on the market. This line of thought continued up to the early 1990s with studies on how consumers valued outcomes over time, looking at how the position of losses and gains in the past, present or future influence decision making (Mowen and Mowen, 1991).

Towards the end of the 1970s and in the early 1980s, researchers began questioning the view that time was mostly a scarce resource, and a constraint on activities (Holman and Venkatesan, 1979). They were critical of time budget studies (e.g. Szalai, 1972), emphasizing the arbitrary classification of activities and the data collection format in such research undertakings. The key difference was, however, in the paradigm of what is time: instead of seeing time as a commodity, linear and divisible, researchers emphasized the perceptual dimensions of time. In the 'subjective experience' paradigm of time, researchers studied individual time orientations and their impact on lifestyles and consumption decisions (Settle et al., 1978). The assumptions that time can be allocated discretely by individuals, that it is a substitute for money, and that individuals clearly differentiate between time budget categories were further questioned (Davies and Omer, 1996). Rather their view is that multiple exogenous variables influence time allocation such as social structure, economic situation, culture, legislation, etc. making it difficult to generalize about the why and how of individual time allocations. This line of thought, which combines the individual experience of time with its nature as a social construction has been reinforced by the influential article of Graham (1981), which introduced different cultural models of time and highlighted their consequences on consumer behaviour.

In line with the view that time is subjectively experienced, Davies and Omer (1996) argue that time allocation is also endogenized by individuals according to their age gender, role, and time orientation, seen as an aspect of their overall personality (Fraisse, 1984; Bergadaà, 1990). They state that '... there is no widely available instrument to test for time orientation, even though a number of social psychologists and psychologists have sought to develop measures in the form of questionnaires (Davies and Omer, 1996: 261). Our objective is to develop such an instrument, to assess its cross-cultural validity, and to take into

account age and gender differences, in order to give a fair picture of both cultural and individual differences in time orientations.

This article builds on previous research (Usunier and Valette-Florence, 1991a; Usunier and Valette-Florence, 1994; Valette-Florence et al., 1995) that has led to the development of a psychometric scale designed for capturing individual time orientations (which we call 'time styles'). In section 1, we briefly review the literature on time orientations in different disciplines (anthropology, psychology, economics) and explain how temporal orientations relate to consumer behaviour and individual buying decisions. Then we explain how the time styles scale was initially developed in France, based on items that were derived from existing scales mostly with items originally worded in English (Calabresi and Cohen, 1968); FAST scale (Alreck, 1976, Settle et al., 1978); Time Structure Questionnaire (Bond and Feather, 1988); Usunier and Prime, 1988; Usunier, 1991). Section 3 deals with cross-cultural replications of the time styles scale in different countries (Germany, Hong Kong, Tunisia, Vietnam). We show the influence of language on time styles as they are captured through the psychometric measurement instrument when it is administered in two different languages in bilingual countries (Arabic and French in Tunisia, Chinese and English in Hong Kong). Section 4 investigates the nomological validity of the scale, that is, the ability time styles have to predict individual values such as materialism, individual activity planning, attitudes towards waiting time, as well as buying and consumption behaviour.

1. Literature Review

As emphasized by Ancona et al. (2001), a temporal framework involves three separate categories with a set of interrelationships between these categories: conceptions of time (based mostly on culture), mapping activities to time (related to both situations and tasks), and actors relating to time (i.e. their individual beliefs, behaviour, and adjustment). Individuals have their own attitudes to time and time management, which result from their personality traits but also from the particular national/cultural group in which they have been raised. Consequently, they have developed a view of what time *is* and how it should be managed in terms of 'synchronization with others' within the native group. Synchronization, which in Greek means developing a common time framework, is the key learning process through which people develop beliefs, attitudes and behaviours in relation to time. Time-loaded activities display both cultural and individual variability. While there is a large body of literature on time in organizations (see for instance the special issue on 'Time and Organizations' of the *Academy of Management Review* 26[4], 2001), organizational time is not the focus of our research endeavour. In this article, we focus on individual

perceptions of time, and how these help predict attitudes and behaviour concerning consumption and buying decisions.

1.1 Time orientations, consumer behaviour, and marketing

The concept of time and therefore time-related behaviours have been studied in different disciplines (Jacoby et al., 1976, Feldman and Hornik, 1981; Jones, 1988; Levine, 1988; Adam, 1990). Reviews of research studies on time (Bergadaà, 1990) show that the concept of time is a social construction that is subjective both collectively and individually. The relationship to time is a multidimensional construct. Cultural anthropology (Munn, 1992) has greatly contributed to the study of temporal orientations. Most of the literature in anthropology considers time perceptions as cultural artefacts. Most anthropological observations highlight that it is impossible to assume that men were born with any type of innate '*temporal sense*'. Our concept of time is always 'culture-bound' (Hallowell, 1955; Doob, 1971). Psychology, especially experimental psychology, has also made a large contribution to the study of time, with a more individual and perceptual approach (e.g. Knapp, 1971; Bond and Feather, 1988). Whereas the anthropological approach has been mostly conceptual and descriptive in nature, psychological research has been more concerned with measurement. Psychometric scales emphasize the dimensions of individual adaptation to the collective cultural time patterns described by anthropologists.

In economics, time may be considered as an input in any consumption process (Becker, 1965). It is allocated where its marginal productivity is the highest; or, at least, the different 'slices of time' must be used in such a way that marginal productivity outweighs marginal cost. Individuals maximize their overall satisfaction by optimally allocating units of time to activities. Economics portrays time as being linear, continuous, and uniform. Linear-separable time has been termed 'Anglo' time by Graham (1981) who contrasts time 'visualized' as a line with an arrow directed to the future and a minuscule point featuring the present to a cyclical model of time, based on a circle or several circles emphasizing periodicity rather than linearity, a model that is found in many non-western societies.

The consequences of time research on consumer behaviour and marketing management are pervasive, which explains why they have received much attention for more than 30 years (Jacoby et al., 1976; Hornik, 1984; Ko and Gentry, 1991; Anderson and Venkatesan, 1994; Urien, 2001). As argued by Bergadaà (1990: 291) 'the temporal cognitive structure . . . is composed of *personal time*, defined as the individual perception of past, present, and future and of personal aims and motivations, and *environmental time*, which is the individual view of society and the direct environment . . . a *construction process* and an *action process* are added to the temporal cognitive structure to form a larger

temporal cognitive system' (emphases in original). Time orientations reflect the individual temporal cognitive system, that is, a mix of individual and socially constructed traits that have an impact on consumer behaviours, such as buying decisions in the case of time shortage and consumer allocation of time to rival activities (Feldman and Hornik, 1981; Kaufman et al., 1991). Time is related to planning behaviour, especially for holidays (Bergadaà, 1990; Valette-Florence et al., 1995; Cotte and Ratneshwar, 2003). Time orientations are also meaningful for the respecting of time commitments (delivery dates, warranty periods, appointments for personal services, etc.), the valuation of product durability, or the display of more or less brand loyalty; that is, repeating the same brand choice over time. Economic time orientation for instance matters as products may save time (such as household appliances), or when products are more or less structured around linear, quantitative time (such as financial products and services). Future orientation might explain the choice of long-term saving schemes or contracting bank loans or life insurance policies; while present orientation may explain a more short-term orientation towards financial products (Morello, 1988). The structured, linear model of time found in the financial services industry may not correspond to female consumers who have a more relational time orientation (Knights and Odih, 1995). Past orientation may be related to nostalgia, a phenomenon that has been studied in marketing because it influences the purchase of certain products and services (Havlena and Holak, 1991).

When particular forms of marketing are considered, it becomes even clearer that time is omnipresent. Time is a key dimension of service activities, as concerns opening hours, service schedules and duration, or waiting for service performance. The service delivery process starts and ends at definite time periods, chaining a series of successive steps. In services marketing, waiting is quite often necessary for consumers, be it in the pre-process (e.g. waiting for being seated in a restaurant), in-process (e.g. waiting during a flight) or post-process phases of service delivery (e.g. waiting to pay bills or disembark from planes) (Maister, 1985). Customers experience the whole of the service delivery process and thus include waiting in their overall assessment of service quality. Waiting time is both objective (chronological time) and subjective (related to the individual cognitive temporal system). That is, how people tend to under- or overestimate waiting time, and how information on waiting affects their evaluation of the wait and their overall satisfaction with the service (e.g. Hornik, 1984; Zakay and Hornik, 1991; Taylor, 1994; Leclerc et al., 1995; Hui et al., 1998; Brodowsky and Anderson, 2000a). Marketers try to reduce the actual waiting time by improved scheduling of service offers or by better organizing waiting lines. They also try to minimize the burden of the wait and its psychological cost by offering information or improving the wait environment. In business-to-business marketing, delivery delays are a key purchase criteria for industrial goods and meeting dates, and respecting deadlines is a significant part of the

evaluation of the industrial supplier's performance (Prime, 1994). Buyer–seller relationships often extend over long periods of time and require regular rounds of business negotiations for which time is a key issue, especially in an international context when the same temporal orientations are not shared by business partners (Usunier, 2003).

When marketing management is considered, the pervasiveness of time is as clear as for consumer behaviour and particular domains of marketing. Market segmentation methods uses time styles as a psychographic criterion to discriminate between groups of consumers according to their time orientation (Usunier and Valette-Florence, 1994; Valette-Florence et al., 2001; Brodowsky et al., 2006) or according to their cognitive rather than chronological age (Szmigin and Carrigan, 2001a). Some classical concepts of marketing such as the product life-cycle are time-based representations. The marketing mix variables are all deeply affected by time-related issues. Product policies for time saving devices should take into account the trade-offs made by consumers between different uses of their personal time. Monetary price is not the only sacrifice accepted by consumers when they buy a product (Becker, 1965); therefore, price policies have to take into account non-monetary price, which is related to time costs, search costs and psychic costs (Zeithaml, 1988). Other 'sacrifices', such as the time spent in shopping, cooking and sitting at table, should be included in the accepted price (perceived non-monetary price) before enjoying any satisfaction from the product. In addition to product and price variables of the marketing mix, sales force management has been shown to have a strong time horizon component through more or less short-term-oriented hiring and compensation policies of salespersons (Rouzies and Macquin, 2000). Finally, consumer attitudes towards time have been shown to require adaptation of advertising messages (Kaufman et al., 1991), especially in a cross-cultural perspective (Manrai and Manrai, 1995; Brodowsky and Anderson, 2000b).

1.2 Dimensions of time orientation

Usunier and Valette-Florence's (1991a,b, 1994; Valette-Florence and Usunier, 1993) time-style scale emphasizes dimensions of time perception, which have been described both by anthropologists and experimental psychologists (Kluckhohn and Strodtbeck, 1961; Calabresi and Cohen, 1968; Hall, 1959, 1976, 1983). The combination of these dimensions depicts a concept of time, which is partly internal and partly external to the individual. It is multidimensional, negotiated between the individual and the environment, and framed by the dominant time patterns in a given society. These dimensions are:

- *Monetary value of time*: When time and money are interchangeable, the *economy of time* is high and activity in time is organized in a *monochronic*

way. In monochrony, only one task is undertaken at any pre-established time, following a schedule ('agenda society'), in contrast to dealing simultaneously with different tasks, actions and/or communications (polychrony). The monochronic concept of time has been described as dominant in Anglo-Saxon and Scandinavian cultures (Hall, 1983), though it may be present to a large extent in most developed countries and in business contexts. Conversely, polychrony has been shown to be present also in predominantly monochronic cultures by researchers (Kaufman et al., 1991; Bluedorn et al., 1999; Conte et al., 1999; Kaufman-Scarborough and Lindquist, 1999; Palmer and Schoorman, 1999). Organized-linear economic time has also been described at the individual level in the 'structure' dimension by Settle et al. (1978), and the 'structured routine' dimension of Feather and Bond (1983). These dimensions relate to individual attitudes towards the planning and scheduling of daily activities.

- *Temporal orientation, especially projections towards the past and the future:* Time styles are related to temporal orientations defined as the projection along the time line (Kluckhohn and Strodtbeck, 1961). As stated by Kluckhohn and Strodtbeck (1961: 13–15): 'The possible cultural interpretations of temporal focus of human life break easily into the three-point range of past, present and future . . . Spanish-Americans, who have been described as taking the view that man is a victim of natural forces, are also a people who place the present time alternative in first position . . . Many modern European countries . . . have strong leanings to a past orientation . . . Americans, more strongly than most people of the world, place an emphasis upon the future – a future which is anticipated to be "bigger and better".' At the individual level, temporal orientations toward the past, the present or the future have been a research interest for experimental psychologists (Cottle, 1976) and for consumer behaviour researchers (Settle et al., 1978).
- *Psychological dimensions:* These emphasize how people individually cope with time as an external and constrained economic resource and as a social and culture-based process of synchronizing themselves with others. They may be broken down into two main headings:
 - *Motivational aspects:* if long periods of time are needed to achieve a task, willingness to undertake projects may decrease significantly if the rewards are only long term. There is a path from the here and now to the future goal and the steps leading to the final goal are all interrelated. Successfully reaching an intermediate step is a prerequisite for going on to the following step. The proximity of time horizons as well as the probability of success at each step influence time perceptions. Delayed gratification may be more or less important: some people, when facing non-rewarding intermediate outcomes, may reduce their time horizon in order to achieve quicker reward (Bouffard et al., 1983; Raynor and Entin, 1983). This aspect of time styles

is often described as persistence or tenacity as in Settle et al. (1978), the opposite pole being the preference for quick return.

– *Time-related anxiety*: When experiencing time in the organization of their activities, individuals may experience adjustment problems and feel anxious. One of the four factors found by Calabresi and Cohen (1968) was related to discomfort and anxiety concerning time and the need to control it. Another factor, which they called ‘time submissiveness’, described a dutiful and conforming attitude towards time, emphasizing appointments and schedules. There is clearly an affective dimension of the individual relation to time.

1.3 Age and gender differences in time orientations

As explained by a number of authors (Guy et al., 1994; Venkatesan et al., 1996), as people age they have less time ahead of them and their future perspective is accordingly affected. Consequently, future orientation should decline with chronological age. Since the amount of past experiences increases simultaneously, past orientation should also increase with age. As emphasized by Guy et al. (1994: 43): ‘As such for all persons, regardless of other factors influencing individual differences, temporal focal length is foreshortened as they grow older. Because there is so much past and commensurately less future, much of the present may be reminiscing about the past.’ Older people, being more conscious of the time remaining tend also to be more concerned about the ways their time should be spent (Szmigin and Carrigan, 2001b), making them more economic time-oriented. This is further reinforced by a phenomenon widely noted by social scientists, that is, that time appears to go by faster as people advance in life (Markson, 1973; Guy et al., 1994).

However, chronological is not cognitive age: ageing has a paradoxical effect on cognitive abilities. On the one hand, neurobiological research shows that age goes with a decline in morphological and functional structures such as prefrontal cortex, which are key resources for perceptual skills (vision and hearing) as well as for working memory, processing speed and encoding of information into episodic memory (Cabeza et al., 2002; Hedden and Gabrieli, 2004). However, observations concerning the cognitive performance of older subjects do not show a general decline in coordination capacities when faced with complex cognitive tasks (De Ribaupierre and Ludwig, 2003). Moreover, verbal and computing skills reach their optimal level between 30 and 50 years of age and decline very slowly after 50 years of age (Hedden and Gabrieli, 2004). It seems that qualitative changes based on adaptive strategies and increased life experience with age may help older people to cope better with complex cognitive tasks that involve knowledge when speed is not a key factor (Staudinger et al., 1992). In ageing research, cognitive age refers to self-perceived age, that is, a person

may feel physically fit, and identify with a certain age group that is significantly younger (Barak and Schiffman, 1980; Barak, 1987). Indeed, cognitively young older consumers have been shown to be strongly future oriented despite being aware that health problems and illness may impede their ability to maintain active lifestyles (Szmigin and Carrigan, 2001a,b). Consequently, we should observe mixed results as concerns future orientation, since the influence of chronological age is partly offset by cognitive age.

Many contributions in time studies do not take into account gender explicitly although there are reasons why gender could matter for time orientation. When studies search for gender differences, they sometimes find no gender-related differences in time orientations, such as Hornik (1993) when applying the TRI (Time Reference Inventory; Roos and Albers, 1965; Sanders, 1983) to an Israeli population. There is some controversy on the influence of gender on time orientation. Early research studies provided empirical data showing that women display stronger past and present orientations and a lower future orientation than men (Lessing, 1968; Cottle, 1976). However, these findings were not supported by subsequent studies, for instance the investigation of time perspectives among adults by Bortner and Hultsch (1972). In a similar vein, studies by Davis (1979), Havlena and Holak (1991) showed that men tend to have stronger nostalgic feelings than women, a possible indication of greater past orientation by men.

A key issue to be addressed is whether time is 'gendered' or not. It has been noted that gender differences in time styles may be due to the higher social orientation of women compared to men (Feldman and Hornik, 1981; Manrai and Manrai, 1995; Cotte and Ratneshwar, 2003). Women have also been shown to be subject to greater time constraints and to have less time available than men, and therefore to experience more time scarcity (Voydanoff and Kelly, 1984). This may be due to the larger number of working hours by women when household responsibilities are taken into consideration. Knights and Odih (1995) explain that the dominant model of linear, clock time is largely a 'male' time. For them, linear time is incongruent with feminine time, which is largely relational, activities being scheduled in response to the demands of significant others and impregnated by the 'routinized circularity and repetitiveness of domestic labour . . . ' (Knights and Odih, 1995: 212). In support of this, Bond and Feather (1988) have found gender differences for their factor called 'structured routine' for which females score significantly higher than male respondents do. The high level of social time orientation for women is incompatible with the dominance of self-time, which is normatively predominant in the linear model of time. Furthermore, Knights and Odih (1995) argue that women, occupying disproportionately subordinate positions within organizations, tend to have their time managed by others rather than by themselves.

2. Scale Development

2.1 First phase of the scale building process

In building the 'time styles' scale, we followed recommended practices for psychometric scale development (Peter and Churchill, 1986), that is, we specify the domain of construct, generate a sample of items, collect data, and purify measures (Churchill, 1979: 66). In the first phase (1990), we administered 600 questionnaires of 180 items on a convenience sample, which fits the research objectives (Calder et al., 1981). Respondents belonged to two contrasting age classes: young people in their 20s (namely, students), and older people, in the 40- to 50-year age category (namely, one of their parents). The questionnaire was self-administered with items followed by a seven-point Likert scale, indicating agreement/disagreement with a particular statement. Items from the various sources quoted below were systematically mixed. The questionnaire was divided into four parts, each containing approximately 45 items. To avoid fatigue, respondents were asked to fill each part of the questionnaire successively allowing for some time lapse between each part. Students were asked to pass it on to one of their parents (father, mother, or their nearest relative belonging to their parents' generation). Our intention in this data collection process was to control for age, which could be assumed as having an influence on time perception patterns.

Given that our long-term aim was to develop a cross-cultural comparison of time styles dimensions quoted earlier, we chose to develop an item base built on existing scales and items elicited by interviewees with highly diverse national and cultural origins (US, Australian, French, Brazilian, Swedish, Arabic, etc.). We started from a large item base (around 180) using 5 studies, for representing different cultural backgrounds, and their specific way of phrasing time-related issues:

- 26 items from TSQ, Time Structure Questionnaire (Feather and Bond, 1983; Bond and Feather, 1988);
- 64 items from the F.A.S.T. scale (Alreck, 1976);
- 37 items generated from in-depth interviews on time perceptions with interviewees from different nationalities: French, Chinese, Swedes, Brazilians, Moroccans (Usunier and Prime, 1988);
- 39 items from Calabresi and Cohen's (1968) study;
- 17 items from Usunier (1991).

Methodological precautions have been taken, so that this total item base should cover the various national cultures envisioned (Frijda and Jahoda, 1966; Poortinga, 1989). Items were translated; then they were verified by using a back translation procedure (Van de Vijver and Leung, 1997; Usunier, 1998).

Nevertheless, it was not sufficient to ensure a true equivalence of the questionnaires (Deutscher, 1973). Natives checked for a true equivalence in meaning (procedure suggested by Strauss, 1969). The questionnaire was translated into several languages following these procedures: German, Korean, Russian, Arabic (Classical) and Spanish (Mexican Spanish). As explained in the next section, the scale was replicated in different cultural settings.

Six hundred questionnaires composed of 180 items, based on previous studies, were administered in France. In order to validate the structure of the scale, we used both an exploratory factor analysis with principal components and oblique rotation and a confirmatory factor analysis (PLS).¹ Appropriate scale building procedures were used (Churchill, 1979; Churchill and Peter, 1984): after filtering for low correlation items (minimum loading set at .5) and testing for reliability (Cronbach, 1951; Nunnally, 1967; Peter, 1979; Peter and Churchill, 1986), the initial time styles scale was composed of 23 items and had 6 main dimensions. In the first phase of the scale building process, six distinct dimensions were identified with high internal consistency reliability estimates (Usunier and Valette-Florence, 1991a,b):

- preference for economic/organized time (Cronbach alpha = 0.88),²
- preference for non-organized time (Cronbach alpha = 0.68),
- orientation towards the past (Cronbach alpha = 0.79),
- orientation towards the future (Cronbach alpha = 0.74),
- time submissiveness (Cronbach alpha = 0.7), and
- time anxiety (Cronbach alpha = 0.78).

The study was replicated in 1991 with a sample of 309 vacationers in Southern France (Valette-Florence et al., 1995) with quite similar validity results (items significantly loaded on the same dimensions) as well as reliability indicators (Cronbach alphas were near to or above 0.7).

2.2 Age and gender differences in time styles

Table 1 presents the mean scores for students on the one hand, and their parents on the other. The means for both have been tested on each dimension (*t* test and associated probability threshold). Table 1 highlights differences between mean scores for men and women on each of the six dimensions, as well as their level of statistical significance.

In our study of time orientations, the two age groups used for the sample (students and parents) very significantly differ on two dimensions (see Table 1): older people have a more economic time (.51; $p < .0001$) and they are less future oriented than the younger generation (.84; $p < .0001$). On all other dimensions of time orientations, there is no significant age difference. Only past orientation is near to significance and in the predicted direction since older respondents are

TABLE 1
Age and gender differences in time styles (initial, 6-dimension version)

Dimensions	Students	Parents	<i>t</i> -test	<i>p</i> value
1 – Eco	-0.25	0.26	-4.58	<i>p</i> = 0.000
2 – Subm.	0.04	-0.07	0.07	<i>p</i> = 0.332 (NS)
3 – Past	-0.09	0.08	-1.51	<i>p</i> = 0.130 (NS)
4 – Future	0.42	-0.42	8.03	<i>p</i> = 0.000
5 – Anxiety	-0.02	0.04	-0.48	<i>p</i> = 0.632 (NS)
6 – N-Org	-0.02	0.01	-0.22	<i>p</i> = 0.828 (NS)
Dimensions	Men	Women	<i>t</i> -test	<i>p</i> value
1 – Eco	0.02	-0.02	0.36	<i>p</i> = 0.719 (NS)
2 – Subm.	-0.01	-0.02	0.09	<i>p</i> = 0.929 (NS)
3 – Past	-0.14	0.12	-2.30	<i>p</i> = 0.022
4 – Future	-0.01	0.02	-0.22	<i>p</i> = 0.823 (NS)
5 – Anxiety	0.06	-0.03	0.79	<i>p</i> = 0.428 (NS)
6 – N-Org	-0.13	0.11	-2.04	<i>p</i> = 0.042

NS: non-significant (at 0.05 level)

slightly more past oriented than younger ones (.17; $p < .13$). These findings have been confirmed by Verwaerde (2005) on a representative sample of the French population. This lends support to the view that, on average, the negative effect of chronological age on future time orientation largely exceeds the influence of cognitive age (for subjects that cognitively are young). On the other hand, the relatively small increase of past orientation over age may be due to the corrective influence of cognitive age over chronological age. Lastly, the increase in economic time orientation observed in our data is consistent with Szmigin and Carrigan (2001b) findings. They show that older consumers are actively involved in the social and material world and need to schedule and manage their time because they face many, sometimes conflicting, demands.

Our results show that women and men significantly differ with respect to two dimensions of time orientations (see Table 1): women tend to display a stronger preference for unorganized time than men do. This finding is consistent with the view that time is to some extent 'gendered': women, being highly solicited and having to answer to multiple demands, feel and fare better if their time allocation is not too strictly framed and therefore is not squeezed by linear, organized time. In line with many (not all) previous studies of time orientations and gender, women are significantly more past oriented than men. These two empirical results are supported by Verwaerde (2005), who also finds the same dimensions of time orientations to differ between men and women.

2.3 Refinement and further development of the scale

We further developed the scale by adding two motivational dimensions, which did not appear in the previous version cited above. They relate to the motivational aspect of time orientations (described earlier). Two dimensions, both featuring a sub-dimension of the motivational aspect, were added to the scale, first based on French samples, then verified in the case of Tunisian samples; we called these two sub-dimensions of the motivational aspect (Cronbach alphas were in the .8 range for both sub-dimensions):

- Tenacity;
- Preference for quick return.

After filtering for low correlation items (minimum loading at .5), the time styles scale is now composed of 29 items and has 4 main dimensions, with 2 sub-dimensions in each of the 4 higher order factors. Each sub-dimension is measured by three or four items:

1. Economic time (preference for economic/organized time; preference for unorganized time)
2. Temporal orientations (orientation towards the past, orientation towards the future)
3. Compliance with time (time submissiveness; time anxiety)
4. Motivational aspects of time (tenacity; preference for quick return).

The study was replicated several times for large organizations that were willing to analyse time styles for a representative sample of their consumer base. In 1991, a replication study of 3,000 respondents was undertaken for Banque Populaire Midi-Pyrénées, Toulouse, France, in order to analyse how time styles relate to the consumption of banking and financial services. Another large-scale replication was carried out in 1993, by a large poll company (SOFRES) for Electricité de France, the national electricity monopoly. The survey was based on a representative sample of the French population (2,522 respondents). Finally, the scale was replicated in 1999 in the context of a French–German comparison of time styles and attitudes towards the use of mobile phones based on a convenience sample of 400 respondents. The sample was composed of 19- to 20-year-old students, undergraduates in business administration, 47 per cent of whom were female.

2.4 Final scale validation

Table 2 presents the four higher order dimensions each composed of two sub-dimensions (see Appendix 1 for detailed list items), resulting in a time styles scale with eight sub-dimensions. In order to confirm the hypothesized structure,

TABLE 2
Final time styles scale: higher order dimensions and sub-dimensions
 (see Appendix 1 for scale items)

Dimensions	Sub-dimension (label in bold)	Cronbach α
Linearity and economicity of time	1. Preference for organized/ economic time	0.83–0.88
	2. Preference for non-linear/ non-organized time	0.61–0.68
Temporal orientations	3. Orientation towards the past	0.79–0.82
	4. Orientation towards the future	0.74–0.86
Obedience to time	5. Time submissiveness (mastery of time)	0.70–0.74
	6. Time anxiety (perceived usefulness of time)	0.69–0.78
Temporal persistence	7. Tenacity	0.70–0.80
	8. Preference for quick return	0.61–0.82

Note: Brackets for statistical estimates across studies

we rely on confirmatory factor analysis based on the covariance matrix of the scale items. Moreover, due to non-normality in the data, bootstrap procedures have systematically been used in order to reach reliable estimates of the links between the measurement variables (items) and the eight hypothesized latent constructs (time styles sub-dimensions). We have indicated brackets for statistical estimates of Cronbach alphas, taking into account both the initial study and the replications. Note that the scale is configurally invariant, that is, the items exhibit the same basic pattern of salient and non-salient loadings across the various data sets across groups studied. Item loadings are all significant at 0.001 across all data sets.

The results displayed in Table 3 confirm the structure of the scale. The scale structure is validated according to fit indices such as Root Mean Square Error of Approximation (RMSEA), Goodness of Fit Index (GFI), and Adjusted Goodness of Fit Index (AGFI). Moreover, convergent validity measures are above 0.5, showing that each time styles sub-dimension shares more variance with its indicators than with any other sub-dimension. Reliability measures are high according to Nunnally's standards. All item loadings are highly significant according to bootstrapped *t*-tests. Ultimately, sequential tests comparing models where time styles sub-dimensions were constrained one by one to be equal to one and unconstrained models in which correlation is freed between sub-dimensions indicate that, in all cases, sub-dimensions were clearly different from each other, providing a formal test of the discriminant validity of the time styles scale.

TABLE 3
Confirmatory factor analysis of the time styles scale

Items	F1	F2	F3	F4	F5	F6	F7	F8
Economic 1		.57–.85						
Economic 2	.67–.85							
Economic 3	.74–.87							
Economic 4	.82–.86							
Non-organized time 1	.63–.87							
Non-organized time 2	.73–.85							
Non-organized time 3	.66–.77							
Past 1			.62–.91					
Past 2			.68–.82					
Past 3			.74–.87					
Past 4			.74–.80					
Future 1				.79–.95				
Future 2				.76–.88				
Future 3				.65–.72				
Future 4				.74–.89				
Time submissiveness 1					.65–.89			
Time submissiveness 2					.79–.82			
Time submissiveness 3					.70–.73			
Time submissiveness 4					.72–.80			
Time anxiety 1						.70–.78		
Time anxiety 2						.74–.78		
Time anxiety 3						.65–.85		
Time anxiety 4						.65–.73		
Tenacity 1							.75–.82	
Tenacity 2							.80–.85	
Tenacity 3							.61–.78	
Preference quick return 1								.69–.93
Preference quick return 2								.57–.74
Preference quick return 3								.64–.89

Note: Brackets for statistical estimates of item loadings across studies

continued

TABLE 3 (continued)

Note: Brackets for statistical estimates of reliability, validity, and model fit indices across studies.

Reliability (Jöreskog's ρ ; Jöreskog, 1971)	
Economic time	0.75–0.88
Non-organized time	0.75–0.79
Orientation toward the past	0.77–0.90
Orientation toward the future	0.85–0.88
Time submissiveness	0.77–0.84
Time anxiety	0.76–0.81
Tenacity	0.78–0.84
Preference for quick return	0.76–0.82
Convergent validity (Fornell and Larker, 1981)	
Economic time	0.61–0.74
Non-organized time	0.52–0.63
Orientation toward the past	0.53–0.60
Orientation toward the future	0.57–0.70
Time submissiveness	0.52–0.62
Time anxiety	0.52–0.53
Tenacity	0.57–0.64
Preference for quick return	0.55–0.60
Goodness-of-fit indices	
RMSEA	0.061–0.065
GFI	0.960–0.972
AGFI	0.915–0.951

3. Cross-cultural and Cross-linguistic Replications

The time styles scale was replicated in a number of national contexts (France, Germany Tunisia, Vietnam). We review these replications later. A key objective in the replications carried out by the original scale developers and by other researchers who used the scale in different contexts was to investigate the 'cross-cultural validity' of the time styles scale. Two replications were undertaken in Tunisia (Valette-Florence and Usunier, 1993; Mahjoub-Mebazaa, 2005), a North African country with an Arabic/Muslim culture as well as long-standing relations with Europe, mostly France. The first replication in Tunisia was not only cross-cultural but also cross-linguistic: our aim was to test the influence of language on self-reported time orientations. Another attempt to

validate the scale across languages was undertaken by Legohérel et al. (2004) by contrasting the administration of the scale in English and Chinese. Other replications are purely cross-cultural: Germany (Valette-Florence et al., 2001) and Vietnam (Dao, 2005). In all of these studies, methodological precautions were taken to ensure conceptual equivalence of the scales in the two languages and cultural mindsets (Poortinga, 1989; Van de Vijver and Leung, 1997). Specifically, items were carefully translated and then back-translated before formulating the final version in order to reach translation equivalence (Usunier, 1998).

3.1 Germany

In the replication study by Valette-Florence et al. (2001), the objectives were to take two different cultural settings and identify the links between: (1) value systems and time styles; (2) between value systems, time styles, and the attitudes towards the use of mobile phones. The study was carried out in France and Germany. It was based on a convenience sample of 200 students within each country; 47 per cent were female. All the students were 19- to 20 years old, and were undergraduates in business administration. In order to test the structure of the scales, they performed first exploratory principal component analyses, then confirmed the structure obtained at the previous step by confirmatory factor analyses. Due to the non-normality of the data, systematic bootstrap procedures were undertaken. Lastly, the invariance structure of the scales between the two countries was systematically tested following Steenkamp and Baumgartner (1998) procedure. A constrained solution setting the equality of loadings provided the best fit to the data, showing that the eight dimensions were invariant across France and Germany and in fact identical to those obtained by Valette-Florence et al. (1995).

3.2 Hong Kong: Western, English-speakers v. Chinese-speakers

Legohérel et al. (2004) administered the time styles questionnaire to a sample of travellers at the Hong Kong international airport. Western travellers (American, Australian, and English-speaking western Europeans) were asked to answer the English version of the scale while Chinese-speaking travellers (from China, Taiwan, Singapore, and Malaysia) were asked to answer a Chinese version of the questionnaire translated into Chinese by the survey team. Two dimensions of the time styles were examined by the authors, past and future orientation with items loading on the same dimension for both language sub-samples, demonstrating configural invariance across languages. Cronbach alphas for past orientation were .71 for the English-speaking sample (317 respondents) and .80 for the Chinese-speaking sample (159 respondents), and for future orientation

.76 for the English-speaking and .77 for the Chinese-speaking sample. However, metric invariance was not met, indicating some cultural (western v. Chinese) variation in response patterns when different language versions were used.

3.3 Tunisia: Bilinguals responding to French and Arabic versions of the time styles scale

Valette-Florence and Usunier (1993) administered the time style scale (items with a seven-point Likert scale) in Tunisia in two different language versions, Arabic and French. The objective was twofold: (1) to assess the cross-cultural validity of the scale; (2) to test the invariance of the scale when it is administered in different language versions since many Tunisians are bilingual and operate in two different cultures according to the language they use. The questionnaire, which was originally written in French, was translated into Arabic, and then translated back into French following recommended procedures for ensuring translation equivalence (Van de Vijver and Leung, 1997). Respondents were young people in their 20s and one of their parents belonging to middle-class, urban families in the Tunis area. The Arabic-speaking sample was composed of 51 men and 63 women and the French-speaking sub-sample was composed of 45 men and 53 women. The average age was 33, with a standard deviation of 15. The eight sub-dimensions of the 'time-styles' scale were tested on both language sub-samples separately, and on a pooled sample. The first finding was that the scale holds up remarkably well to different cultural settings. All Cronbach alphas were above the .7 threshold for the eight dimensions, for the Tunisian-speaking and the French-speaking samples as well as for the combined sample. However, the scale in French was answered in a more consistent manner by Tunisians than the Arabic version, showing that the French operating cultural background was activated by language. In other words, the semantic coherence of the Arabic-speaking Tunisian sample appeared to be weaker than the semantic coherence of the French-speaking Tunisian sample. On average, individuals in the Arabic-speaking Tunisian sample tended to be both more past and more future oriented; they experienced less control in managing their time and considered it as less useful; finally, they preferred quicker returns than individuals in the French-speaking Tunisian sample did. Answers were more homogeneous (i.e. lower standard deviation) for Arabic-speaking than for French-speaking Tunisians. A possible explanation could be that individual variability was greater in the French-speaking Tunisian sample, even though its semantic coherence seemed better than that of the Arabic-speaking Tunisian sample. On the other hand, the Arabic-speaking Tunisian sample, while exhibiting less semantic coherence, displayed stronger cultural coherence evidenced by lower standard deviations.

Another replication in Tunisia by Mahjoub-Mebazaa (2005) confirms the

cross-cultural validity of the scale. She administered the six-dimension time styles scale to a Tunisian convenience sample in French (151 persons) of bank customers with balanced sub-samples for three age classes (20–40, 40–65, more than 65) in order to account for age-related differences in temporal orientation. Cronbach alphas are satisfactory or good for all six factors (economic time: .832; non-organized time: .612; orientation towards the future: .616; orientation towards the past .823; tenacity: .584; preference for quick return: .820).

3.4 Vietnam

Dao (2005) investigated the influence that consumer time styles exert on their purchase decisions in a comparative context (Vietnam versus France). To measure temporal orientations he used a large item base (56) that covers 4 dimensions of the time styles scale: past orientation (PO), future orientation (FO), organized time (OT), and preference for quick return (PQR) as well as additional items drawn from psychometric scales featuring procrastination, present orientation, anxiety towards the future, and monochronic versus polychronic use of time. The French (579) and Vietnamese (600) samples were composed to ensure sampling equivalence between the two nations. Cronbach alphas were satisfactory for both the French (PO: .81; FO: .83; OT: .85; PQR: .73) and the Vietnamese sample (PO: .67; FO: .67; OT: .75; PQR: .77). The scales were shown to be invariant across national contexts (Steenkamp and Baumgartner, 1998). Dao found that the Vietnamese were significantly more future oriented, more past oriented, more prone to searching for immediate gratification, and less organized as concerns the scheduling of their activities than the French were.

3.5 Language and time: Illustrations and comments

Representations of time are conveyed through the medium of language, as a means of communication and therefore collective action. For instance, Benjamin Whorf comments about the Hopi language in the following terms:

After long and careful study and analysis, the Hopi language is seen to contain no words, grammatical forms, constructions or expressions, that refer directly to what we call 'time', or to past, present, and future, or to motion as cinematic rather than dynamic (i.e. as a continuous translation in space and time rather than as an exhibition of a dynamic effort in a certain process), or that even refer to space in such a way as to exclude that element of extension or existence that we call 'time', and so by implication leave a residue that could be referred to as 'time'. Hence, the Hopi language contains no reference to 'time', either implicit or explicit. (Carroll, 1956: 57–8)

In a similar vein, the unification between space and time in Bantu languages is recounted by Pearson in his book *People of the Aurora* in the following terms:

In the Ngangela language there is no word, as far as I know, for 'time' as a continuous, flowing passage of events or the lack of same. Time is experiential or objective, that is, it is that which is meaningful to the person or thing, which experiences it. *Time and space are cognate incidents of eternity*. The same word is used for both 'time' and 'space' (the latter in the sense of 'distance'). (Pearson, 1977: 75, emphasis added)

Language reflects (and pre-shapes) how people envision the past, the present and the future. In other African languages (Kamba and Kikuyu), there are three future tenses that express (1) action in two to six months; (2) action that will take place immediately; and, (3) action 'in the foreseeable future, after this or that event' (M'biti, 1968). Similarly, Levine, conducting research on Brazilian versus US time, highlights the way concepts of punctuality are reflected in language. He takes the example of the translation from English to Portuguese of a questionnaire containing the verb 'to wait':

Several of our questions were concerned with how long the respondent would *wait* for someone to arrive versus when they *hoped* the person would arrive versus when they actually *expected* the person would come. Unfortunately for us, it turns out that the terms *to wait*, *to hope* and *to expect* are all typically translated as the single verb *esperar* in Portuguese. In many ways our translation difficulties taught us more about Brazilian–Anglo differences in time conception than did the subjects' answers to the questions. (Levine, 1988: 48–9, emphases in original)

The examples illustrate how deep the relationship is between language and time. Therefore, there is no claim to universality of the time styles scale. Rather, its western origin is acknowledged: most items were originally worded in English. However, it is our contention that different models of time coexist in western societies with traditional procedural and cyclical models of time being concealed but not suppressed by linear clock time. Furthermore, in a globalizing world, most people are exposed to different cultural models of time. Back translation procedures reported in the earlier paragraphs for Arabic, Chinese, German, and Vietnamese were used to make item meanings perfectly understandable to local respondents and equivalent across languages. The slight increase in measurement error in bilingual contexts (Hong Kong and Tunisia) when the instrument was administered comparatively in the western language (respectively English and French) versus the local language (respectively Chinese and Arabic) is evidence that no psychometric instrument can be fully culture and language free.

4. The Influence of Time Styles on Attitudes and Behaviour

Research was conducted to investigate the linkage between time styles and values under the form of an 'overall value orientation' (Valette-Florence et al., 1995, 2001) as well as in the case of materialism and materialistic values (Verwaerde, 2005). Time styles have also been shown to influence activity planning as concerns holidays (Valette-Florence et al., 1995) and attitudes toward the wait for service delivery (Durrande-Moreau and Usunier, 1999). Finally, they explain attitudes towards criteria used for making purchasing decisions (Dao, 2005) and attitudes towards consumption when such consumption is time-related such as attitudes towards mobile communication (Valette-Florence et al., 2001).

4.1 Time styles and individual value systems

The nature of human values is a topic of growing interest in the social sciences, particularly in marketing (Kahle and Goff Timmer, 1983; Kamakura and Mazzon, 1991; Kamakura and Novak, 1992). Empirical studies have established links between values and product/brand choice (Henry, 1976), media usage and preferences (Beatty et al., 1985; Todd et al., 1997), store patronage (Becker and Connor, 1982), and gift giving (Beatty et al., 1996). Research has also brought evidence of the relationships between values and several variables influencing consumer behaviour, such as attitudes (Homer and Kahle, 1988), pro-environmental attitudes (McCarthy and Shrum, 1994; Grunert and Juhl, 1995), emotions (Laverie et al., 1993) or innovativeness (Roehrich et al., 1989).

According to Schwartz (1992), five features are common to most of the definition of values. Values are described as concepts or beliefs, about desirable behaviours and/or end states that go beyond specific situations guide selection or evaluation of behaviours and events, and are ordered by a certain hierarchical importance. In the approach of social adaptation theory (Kahle, 1983), values are inferred constructs held collectively by societies and individually by persons who represent intersection points between individuals and the society at large. One can regard them as the most abstract type of social cognition that helps people guiding themselves in the interpersonal world (Grunert and Scherhorn, 1990). In any social environment, there are habits and customs related to how people plan and organize their activities and synchronize with each other in their personal and business lives. Value systems represent a major component of national cultures. In that perspective, one might expect connections between individual value systems and time styles.

Valette-Florence et al. (1995) first investigated the linkage between value systems and time styles by using a convenience sample of summer vacationers in the French Alps (309 respondents). To measure individual value, they used a

slightly modified version of Kahle's list of values (Aurifeille and Valette-Florence, 1991).³ The overall value system is built on three dimensions (social orientation, hedonistic orientation, individualistic orientation). Individuals high on the overall value system tend to be socially oriented and hedonistic but not individualistic (the overall value system is negatively related [-.81] to the individualistic orientation). The overall value system is positively related to structured time (a higher order dimension correlated to economic time at .96 and to unorganized time at $-.79$, which we call linearity and economicity of time in the time styles scale) as well as to temporal orientations (.27), a higher order dimension correlated to past orientation at .96 and to future orientation at $-.89$. The overall value system is also negatively related ($-.11$) to obedience to time, a higher order dimension of the time styles scale correlated to time anxiety at .92 and to time submissiveness at .47.

Verwaerde (2005) investigated the relationship between time styles and facets of materialism based on the materialistic values scale of Richins and Dawson (1992). The key tenet in her research was that materialistic individuals express the central aspect of their favourite possessions in their life through specific temporal orientations. Her study was based on a quota sample of 500 individuals, representative of the French population in terms of age, gender, occupational status, and education. She evidenced seven factors out of eight in the time styles scale (economicity of time and non-organized time become opposite poles on a single factorial dimension, linear time) amounting to 70 percent of total variance. Reliability coefficients ranged between .61 and .88, with most dimensions in the .7 to .9 range. Linear time was positively related to the centrality and success dimensions of materialism. Past orientation was negatively related to centrality while future orientation was related to the happiness and success dimensions of materialism. Time submissiveness was negatively linked to the success dimension while feelings of uselessness of time were related to the happiness dimension of materialism. Finally, both tenacity and preference for quick return were positively linked with the centrality of materialistic values. Overall, this confirmed that materialistic individuals tend to view time as economic and linear, to schedule their activities, as well as to be tenacious and to persist even without immediate gratification.

4.2 Time styles and behaviour: Waiting and planning

Durrande-Moreau and Usunier (1999) studied the influence of time styles on the waiting experience in a service context (public transportation). Their assumption was that service customers who have a more quantitative time style (strong economic time and temporal orientations) will perceive more time pressure, and this, in turn, will tend to result in active impatience.⁴ It was not assumed, however, that time styles *directly* influence the way people subjectively experience

waiting. Rather, time styles, a permanent characteristic of personality, have an impact on perceived time pressure (a mediating construct), which in turn influences the subjective experience of waiting. 'Quantitative' people tend to have a more negative perception of the waiting experience than 'qualitative' people do. Durrande-Moreau and Usunier administered the 23-item/6-factor version of the time styles scale to a sample of 320 public transportation patrons (buses and streetcars) in a half-a-million-population town. Each of the three components of quantitative time style, economicity of time, past orientation, and future orientation (Cronbach alphas: .85, .77, .80) are positively related to perceived time pressure. Service customers who felt time pressure a consequence of their quantitative time style showed a higher level of active impatience ($t = 3.89$; significant at .001 level), but not stronger passive impatience.

Valette-Florence et al. (1995) studied how vacationers plan (or do not plan) their holidays and relate holiday planning attitudes to individual value systems and time styles.⁵ The best predictors of holiday planning are two time styles dimensions, namely economic time (positive) and non-organized time (negative) with a cumulative R^2 of 16.9 per cent. The contribution of values is smaller than that of time styles, with social orientation being positively and individualistic orientation negatively related to holiday planning. Adding the overall value system to time styles raises cumulative R^2 to 21.7 per cent.

4.3 Time styles and attitudes towards consumption and purchase decisions

Valette-Florence et al. (2001) studied the influence of time styles on attitudes towards mobile communication behaviour in France and Germany. This product category was chosen because using a mobile phone involves daily routines in reference to chronological time (Newtonian time), saves time (economic time), and enables immediate voice communication in order to relate to others (un-organized time). Using a mobile phone allows the individual to manage activities instantaneously, much like a polychronic use of time. An initial qualitative survey was set up in order to determine the main components of mobile communication behaviour through a focus group of 20 French mobile phone users. Three main dimensions appeared to be relevant for users: freedom, contact with other people, and instantaneous behaviour. Interestingly, these dimensions are located on different levels. Freedom is a means–end interpretation of a value, contact with other people a social benefit, and instantaneous behaviour a functional benefit. Seven items were generated in order to capture these three dimensions of the mobile communication attitude.⁶

In France, two time styles dimensions, economic time (.295) and tenacity (–.229) had an influence on the general mobile communication attitude. The link between economicity and mobile communication attitude suggested that the French associate the use of a mobile phone with the capacity to organize their

own lives and to save time. The French have been described as intellectually monochronic but behaviourally polychronic (Hall, 1983). Monochrony is more associated to tenacity than polychrony, explaining why tenacity in the French time style is negatively associated with the overall mobile communication attitude. In Germany, preference for quick return (.346) and non-organized time (.313) were found to have a significant influence on the overall mobile communication attitude. The positive link between preference for quick return and mobile communication attitude suggested that Germans associate the use of a mobile phone with instantaneous behaviour. The positive relationship between non-organized time and mobile communication indicate that mobile communication is also associated with flexible time and instantaneous behaviour. The Germans, traditionally described as being monochronic and valuing organized time, paradoxically associate a positive attitude to mobile communication as free and spontaneous behaviour. These findings indicate that consumers are not sensitive to the same product benefits, depending on country and time style. French consumers mostly value the economic aspect of using a mobile (saving time). The Germans put more value on mobile communication to get immediate gratification and to create space in their lives for unorganized time.

Another study investigating the relationship between time styles and purchase decisions is the one mentioned earlier by Dao (2005). He found that future orientation (for both the French and the Vietnamese) and past orientation (for the French only) positively influenced the emphasis on design as a purchasing criterion. For the French, preference for quick return negatively influenced the emphasis on quality and price as a purchasing criterion, whereas the Vietnamese preference for quick return led them to emphasizing brand as a key criterion for buying decisions. Organized time significantly increased the role of warranty as a purchasing criterion for the Vietnamese but it had no influence for the French.

Conclusion

Over a 15-year period, the time styles scale has been tested on representative samples of the French population, consistently demonstrating good psychometric properties. Most of its items being originally written in English, its psychometric properties should be stable when administered in English as confirmed by Legoh  rel et al.'s (2004) study. Cross-cultural replications showed the relevance of time styles dimensions in different national/cultural environments, such as China, Germany, Tunisia, and Vietnam. The scale has proven strong factorial stability, since its structure remains the same in diverse cultural settings. However, when extending the scale cross-culturally, key demographic variables, that is, sex and age should be taken into account in order not to overestimate national differences. Language also appeared to have some influence

on the measurement of time styles in as far as it may activate different operating cultures in bilingual/bicultural populations.

Our research also tried to assess the nomological validity of the scale (sometimes referred to as predictive validity). A scale has no value per se; it is worth being developed and used in as much as the scale is able to predict either substantive relations with other theoretical concepts such as the relationships between individual time styles and value systems, or specific attitudes and behaviours. Several research studies proved the nomological and operational validity of the scale. The scale was related to the concept of values in the sense that personal values as measured by Kahle's list of values are antecedents of time styles. Finally, time styles have proven valuable for depicting attitude and behaviour towards financial products as well as attitudes towards mobile phone behaviour. Findings reported in section 4, based on our study and other studies, showed that nomological validity is demonstrated in several contexts. Because the time styles scale is based on items and concepts that are drawn from interdisciplinary research on time, it can be used beyond the applied domains of marketing and consumer behaviour. Therefore, we encourage researchers to use this scale for testing a large array of attitudinal and behavioural issues in the social sciences.

Notes

1. Research involving instrument validation relies on confirmatory factor analysis, which enables one to compute accurate reliability estimates (Byrne, 2001).
2. Cronbach alphas reported here are those in Usunier and Valette-Florence (1991a,b).
3. Translation of the word 'excitement', used in one item of the Kahle's list of values, is problematic in most European languages.
4. Active impatience refers to people being on the lookout for the service to start and being involved in trying to 'make it happen' even though they can do little if nothing about it.
5. Holiday planning attitudes are measured by a four-item scale (factor loading in brackets): 1. I am used to planning my vacation several months in advance and to booking for it (.724); 2. Even when on holiday, a watch remains useful (.709); 3. When on holiday, it is important to organize in order to get the most out of it (.815); 4. On holiday, I decide on day-by-day activities at the last moment (-.617). Reliability (ρ_n) is .81 and Rhô of convergent validity is .518.
6. Jöreskog's (1971) Rhô (reliability indicator) is .96 for Instantaneous behaviour (2 items), .98 for Freedom (3 items) and .96 for Contact with other people (.96).

References

- Adam, B. (1990) *Time and Social Theory*. Oxford: Polity Press.
- Alreck, P. L. (1976) 'Time Orientation and Behavior', unpublished Doctoral Dissertation, San Diego State University.
- Ancona, D. G., Okhuysen, G. A. and Perlow, L. A. (2001) 'Taking Time to Integrate Temporal Research', *Academy of Management Review* 26(4): 512–29.
- Anderson, B. B. and Venkatesan, M. V. (1994) 'Temporal Dimensions of Consuming Behavior Across Cultures', in S. Hassan and R. Blackwell (eds) *Global Marketing, Perspectives and Cases*, pp. 177–95. Orlando, FL: The Dryden Press, Harcourt Brace.
- Aurifeille, J. M. and Valette-Florence, P. (1991) 'An Empirical Investigation of the Predictive Validity of Micro versus Macro Approaches in Consumer Value Research', *Proceedings of the EMAC Annual Conference* 1: 65–81.
- Barak, B. (1987) 'Cognitive Age: A New Multidimensional Approach to Measure Age Identity', *International Journal of Aging and Human Development* 25(1): 109–28.
- Barak, B. and Schiffman, L. G. (1980) 'Cognitive Age: A Nonchronological Age Variable', in K. B. Monroe (ed.) *Advances in Consumer Research*, pp. 602–6. Ann Arbor, MI: Association for Consumer Research.
- Beatty, S. E., Kahle, L. R., Homer, P. and Misra, S. C. (1985) 'Alternative Measurement Approaches to Consumer Values. The List of Values and the Rokeach Value Survey', *Psychology and Marketing* 2(3): 181–200.
- Beatty, S. E., Yoon, M. H., Grunert, S. C. and Helgeson, J. G. (1996) 'An Examination of Gift-Giving Behaviors and Personal Values in Four Countries', in C. Otnes and R. Beltramini (eds) *Gift-Giving: An Interdisciplinary Anthology*, pp. 19–36. Bowling Green, OH: Bowling Green State University Popular Press.
- Becker, B. W. and Connor, P. E. (1982) 'The Influence of Personal Values on Attitude and Store Choice Behavior', in *An Assessment of Marketing Thought and Practice*, pp. 21–4. AMA: Educators' Proceeding.
- Becker, G. (1965) 'A Theory of the Allocation of Time', *The Economic Journal* 75: 493–517.
- Bergadaà, M. (1990) 'The Role of Time in the Action of the Consumer', *Journal of Consumer Research* 17(3): 289–302.
- Bluedorn, A. C., Kalliah, T. J., Strube, M. J. and Martin, G. D. (1999) 'Polychronicity and the Inventory of Polyhronic Values (IPV): The Development of an Instrument to Measure a Fundamental Dimension of Organizational Culture', *Journal of Managerial Psychology* 13(3–4): 205–30.
- Bond, M. J. and Feather, N. T. (1988) 'Some Correlates of Structure and Purpose in the Use of Time', *Journal of Personality and Social Psychology* 55(2): 321–9.
- Bortner, R. W. and Hultsch, D. F. (1972) 'Personal Time Perspective in Adulthood', *Development Psychology* 7: 98–103.
- Bouffard L., Lens W. and Nuttin, J. R. (1983) 'Extension de la Perspective Temporelle Future en Relation avec la Frustration' [Extension of Future Time Perspective in Relation to Frustration], *International Journal of Psychology* 18: 429–42.
- Brodowsky, G. H. and Anderson, B. B. (2000a) 'A Cross-cultural Study of Waiting as a Satisfaction Driver in Selected Service Encounters', *The Journal of East West Business* 7(1): 11–36.
- Brodowsky, G. H. and Anderson, B. B. (2000b) 'A Cross Cultural Study of Consumer Attitudes Toward Time', *Journal of Global Marketing* 13(3): 93–109.

- Brodowsky, G. H., Anderson, B. B., Meilich, O., Schuster, C. P. and Venkatesan, M. V. (2006) 'If Time is Money, is it a Common Currency?: A Cross-Cultural Study of Time Attitudes', in D. Grewal, M. Levy and R. Krishnan (eds) *American Marketing Association Summer Educators' Conference Proceedings*, pp. 378–9. Chicago, IL: American Marketing Association.
- Byrne, B. M. (2001) *Structural Equation Modeling with AMOS: Basic Concepts, Application, and Programming*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Cabeza, R., Anderson, N. D., Locantore, J. and McIntosh, A. (2002) 'Ageing Gracefully: Compensatory Brain Activity in High-Performing Older Adults', *Neuroimage* 17(3): 1394–402.
- Calabresi, R. and Cohen, J. (1968) 'Personality and Time Attitudes', *Journal of Abnormal Psychology* 73(5): 431–9.
- Calder, B. J., Philips, L. and Tybout, A. M. (1981) 'Designing Research for Application', *Journal of Consumer Research* 8: 197–207.
- Carroll, J. B. (1956), *Language, Thought and Reality: Selected writings of Benjamin Lee Whorf*. Cambridge, MA: MIT.
- Churchill, G. A., Jr (1979) 'A Paradigm for Developing Better Measures of Marketing Constructs', *Journal of Marketing Research* 16 (February): 64–73.
- Churchill, G. A., Jr and Peter, J. P. (1984) 'Research Design Effects on the Reliability of Rating Scales', *Journal of Marketing Research* 21(4): 360–75.
- Conte, J. M., Rizzuto, T. E. and Steiner, D. D. (1999) 'A Construct-Oriented Analysis of Individual-Level Polychronicity', *Journal of Managerial Psychology* 14(3–4): 269–87.
- Cotte, J. and Ratneshwar S. (2003) 'Choosing Leisure Services: The Effects of Consumer Timestyles', *Journal of Services Marketing* 17(6): 558–72.
- Cottle, T. J. (1976) *Perceiving Time, a Psychological Investigation with Men and Women*. New York: Wiley.
- Cronbach, J. (1951) 'Coefficient Alpha and the Internal Structure of Tests', *Psychometrika* 16(September): 297–334.
- Dao, T. (2005) 'Influence du Style Temporel et du Sentiment d'Efficacité Personnelle sur le Style de Décision d'Achat: Comparaison des Consommateurs Français et Vietnamiens à propos des Produits Audiovisuels' [Influence of Time Styles and Perceived Self-Efficacy on Purchase Decision Styles: A Comparison of French and Vietnamese Consumers Regarding Audiovisual Products], PhD thesis, University of Rennes.
- Davies, G. and Omer, O. (1996) 'Time Allocation and Marketing', *Time and Society* 5(2): 253–68.
- Davis, F. (1979) *Yearning for Yesterday: A Sociology for Nostalgia*. New York: The Free Press.
- De Ribaupierre, A. and Ludwig, C. (2003) 'Age Differences and Divided Attention: Is there a General Deficit?', *Experimental Aging Research* 29(1): 79–105.
- Deutscher, I. (1973) 'Asking Questions Cross-Culturally: Some Problems of Linguistic Comparability', in D. P. Warwick and S. Osherson (eds) *Comparative Research Methods*, pp. 163–86. Englewood-Cliffs, NJ: Prentice-Hall.
- Doob, L. W. (1971) *Patterning of Time*. New Haven, CT: Yale University Press.
- Durrande-Moreau, A. and Usunier, J. C. (1999) 'Time-Styles and the Waiting Experience: An Exploratory Study', *Journal of Service Research* 2(2): 173–86.
- Feather, N. T. and Bond, M. J. (1983) 'Time Structure and Purposeful Activities among

- Employed and Unemployed University Graduates', *Journal of Occupational Psychology* 56(3): 241–54.
- Feldman, L. P. and Hornik, J. (1981) 'The Use of Time: An Integrate Conceptual Model', *Journal of Consumer Research* 7(4): 407–19.
- Fornell, C. and Larcker, C. (1981) 'Evaluating Structural Equation Models with Unobservable Variables and Measurement Error', *Journal of Marketing Research* 18: 39–50.
- Fraisse, P. (1984) 'Perception and Estimation of Time', *Annual Review of Psychology* 35: 1–36.
- Frijda, N. and Jahoda, G. (1966) 'On the Scope and Methods of Cross-Cultural Research', *International Journal of Psychology* 1(2): 109–27.
- Graham, R. J. (1981) 'The Role of Perception of Time in Consumer Research', *Journal of Consumer Research* 7(4): 335–42.
- Grunert, S. C. and Juhl, H. J. (1995) 'Values, Environmental Attitudes and Buying of Organic Foods', *Journal of Economic Psychology* 16(1): 30–9.
- Grunert, S. C. and Scherhorn, G. (1990) 'Consumer Values in West Germany: Underlying Dimensions and Cross-Cultural Comparison with North America', *Journal of Business Research* 20(2): 97–107.
- Guy, B. S., Rittenburg, T. L. and Hawes, D. K. (1994) 'Dimensions and Characteristics of Time Perceptions and Perspectives among Older Consumers', *Psychology & Marketing* 11(1): 35–56.
- Hall, E. T. (1959) *The Silent Language*. Garden City, NY: Doubleday and Company.
- Hall, E. T. (1976) *Beyond Culture*. Garden City, NY: Anchor Press/Doubleday.
- Hall, E. T. (1983) *The Dance of Life*. Garden City, NY: Anchor Press/Doubleday.
- Hallowell, I. (1955) *Culture and Experience*. Philadelphia: University of Pennsylvania Press.
- Havlena, W. J. and Holak, S. L. (1991) 'The Good Old Days: Observations on Nostalgia and its Role in Consumer Behavior', R. H. Holman and M. R. Salomon (eds) *Advances in Consumer Research*, pp. 323–9. Provo, UT: Association for Consumer Research.
- Hedden, T. and Gabrieli, J. D. E. (2004) 'Insights into the Ageing Mind: A View from Cognitive Neuroscience', *Nature Reviews Neuroscience* 5(2): 87–96.
- Henry, W. A. (1976) 'Cultural Values Do Correlate With Consumer Behavior', *Journal of Marketing Research* 13(2): 121–7.
- Holman, R. H. and Venkatesan, M. Ven (1979) 'Time: The Fundamental Things Apply', *Advances in Consumer Research* 6: 334–7.
- Homer, P. and Kahle, L. R. (1988) 'A Structural Equation Test of the Value-Attitude-Behavior Hierarchy', *Journal of Personality and Social Psychology* 54(4): 638–46.
- Hornik, J. (1984) 'Subjective vs. Objective Time Measures: A Note on the Perception of Time in Consumer Behavior', *Journal of Consumer Research* 11(1): 615–18.
- Hornik, J. (1993) 'The Role of Affect in Consumers' Temporal Judgments', *Psychology and Marketing* 10(3): 239–55.
- Hui, M. K., Thakor, M. V. and Gill, R. (1998) 'The Effect of Delay Type and Service Stage on Consumers' Reactions to Waiting', *Journal of Consumer Research* 24 (March): 469–79.
- Jacoby, J., Szybillo, G. J. and Berning, C. K. (1976) 'Time and Consumer Behavior: An Interdisciplinary Overview', *Journal of Consumer Research* 2: 320–39.

- Jones, J. M. (1988) 'Cultural Differences in Temporal Perspectives: Instrumental and Expressive Behaviors in Time', in J. E. McGrath (ed.) *The Social Psychology of Time*, pp. 21–38. Newbury Park, CA: Sage.
- Jöreskog, K. G. (1971) 'Statistical Analysis of Sets of Congeneric Tests', *Psychometrika* 36: 109–33.
- Kahle, L. (ed.) (1983) *Social Values and Social Change: Adaptation to Life in America*. New York: Praeger.
- Kahle, L. and Goff Timmer, S. (1983) 'A Theory and Method for Studying Values', in L. Kahle (ed.) *Social Values and Social Change: Adaptation to Life in America*, pp. 43–69. New York: Praeger.
- Kamakura, W. A. and Mazzon, J. A. (1991) 'Values Segmentation: A Model for the Measurement of Values and Values Systems', *Journal of Consumer Research* 18(2): 208–18.
- Kamakura, W. A. and Novak, T. P. (1992) 'Value-System Segmentation: Exploring the Meaning of LOV', *Journal of Consumer Research* 19(1): 119–32.
- Kaufman, C. F., Lane, P. M. and Lindquist, J. D. (1991) 'Exploring More than 24 Hours a Day: A Preliminary Investigation of Polychronic Time Use', *Journal of Consumer Research* 18(3): 392–401.
- Kaufman-Scarborough, C. and Lindquist, J. D. (1999) 'Time Management and Polychronicity: Comparisons, Contrasts and Insights from the Workplace', *Journal of Managerial Psychology* 14(3–4): 288–312.
- Gluckhohn, F. R. and Strodbeck, F. L. (1961) *Variations in Value Orientations*. Evanston, IL: Row-Paterson.
- Knapp, R. H. (1971) 'Personality and the Psychology of Time', in J. T. Fraser, F. C. Haber and G. H. Muller (eds) *The Study of Time*. Berlin: Springer Verlag.
- Knights, D. and Odih, P. (1995) "'It's About Time!": The Significance of Gendered Time for Financial Services Consumption', *Time & Society* 4(2): 205–31.
- Ko, G. and Gentry, J. W. (1991) 'The Development of Time Orientation Measures for Use in Cross-Cultural Research', *Advances in Consumer Research* 18: 135–42.
- Laverie, D. A., Kleine, R. E., III and Kleine, S. S. (1993) 'Linking Emotions and Values in Consumption Experiences: An Exploratory Study', *Advances in Consumer Research* 20: 70–5.
- Leclerc, F., Schmitt, B. H. and Dubé, L. (1995) 'Waiting Time and Decision Making: Is Time like Money?', *Journal of Consumer Research* 22(2): 110–9.
- Legohérel, P., Daucé, B., and Tsu, C. H. C. (2004) 'Culture, Time Orientation, and Exploratory Consumer Behaviour', in K. Chon and A. Tan (eds) *Proceedings of the 6th Biennial Conference on Tourism in Asia*, pp.179–188. Phuket: Asia-Pacific CHRIE.
- Lessing, E. (1968) 'Demographic, Developmental and Personality Correlates of Length of Future Time Perspective', *International Personality* 36: 183–201.
- Levine, R. V. (1988) 'The Pace of Life across Cultures', in J. E. McGrath (ed.) *The Social Psychology of Time*, pp. 39–60. Newbury Park, CA: Sage.
- McCarthy, J. A. and Shrum, L. J. (1994) 'The Recycling of Solid Wastes: Personal and Cultural Values and Attitudes about Recycling as Antecedents of Recycling Behavior', *Journal of Business Research* 30(1): 53–62.
- Mahjoub-Mebazaa, I. (2005) PhD thesis Work-in-Progress (author's communication), Faculty of Economics and Business, Tunis, Tunisia.
- Maister, D. H. (1985) 'The Psychology of Waiting Lines', in J. A. Czepiel, M. R.

- Solomon and C. F. Surprenant (eds) *The Service Encounter*, pp. 113–23. Lexington, MA: Lexington Books.
- Manrai, L. A. and Manrai, A. (1995) 'Effect of Cultural Context, Gender, and Acculturation on Perception of Work versus Social/Leisure Time Usage', *Journal of Business Research* 32(2): 115–28.
- Markson, E. W. (1973) 'Readjustment to Time in Old Age: A Life Cycle Approach', *Psychiatry* 36(February): 37–48.
- M'biti, J. (1968) 'African Concept of Time', *Africa Theological Journal* 1: 8–20.
- Morello, G. (1988) 'Business Requirements and Future Expectations in Competitive Bank Services – The Issue of Time Perceptions', pp. 235–45. Milan: Research for Financial Services Seminar, ESOMAR.
- Mowen, J. C. and Mowen, M. M. (1991) 'Time and Outcome Valuation: Implications for Marketing Decision Making', *Journal of Marketing* 55(4): 54–62.
- Munn, N. D. (1992) 'The Cultural Anthropology of Time: A Critical Essay', *Annual Review of Anthropology* 21: 93–123.
- Nunnally, J. C. (1967) *Psychometric Theory*. New York: McGraw-Hill.
- Palmer, D. K. and Schoorman, F. D. (1999) 'Unpackaging the Multiple Aspects of Time in Polychronicity', *Journal of Managerial Psychology* 14(3–4): 323–44.
- Pearson, E. (1977) *People of the Aurora*. San Diego, CA: Beta Books.
- Peter, J. P. (1979) 'Reliability: A Review of Psychometrics Basics and Recent Findings', *Journal of Marketing Research* 16(February): 6–17.
- Peter, J. P. and Churchill, G. A., Jr (1986) 'Relationships Among Research Design Choices and Psychometric Properties of Rating Scales: A Meta-Analysis', *Journal of Marketing Research* 23(February): 1–10.
- Poortinga, Y. H. (1989) 'Equivalence of Cross-Cultural Data: An Overview of Basic Issues', *International Journal of Psychology* 24(6): 737–56.
- Prime, N. (1994) 'Culture, Time and Negotiation', unpublished PhD thesis, University of Grenoble.
- Raynor, J. and Entin, E. (1983) 'The Function of Future Orientation as A Determinant of Human Behavior in Step-Path Theory of Action', *International Journal of Psychology* 18: 463–87.
- Roehrich, G., Valette-Florence, P. and Rapacchi, B. (1989) 'Combined Influence of Personal Value Systems, Involvement and Innovativeness on Innovative Consumer Behavior: An Application on Perfume Purchase, is Marketing Keeping up with the Consumer?', *ESOMAR Seminar*, pp. 261–79. European Society for Opinion and Market Research.
- Roos, P. and Albers, R. (1965) 'Performance of Alcoholics and Normals on a Measure of Temporal Orientation', *Journal of Clinical Psychology* 21: 34–36.
- Rouzies, D. and Macquin, A. (2000) 'Time and Salesforce Management', in D. Caseby (ed.) *Proceedings of the International ISIDA Conference*, pp. 415–25. Palermo: Italy.
- Sanders, S. N. (1983) 'The Dimensions of Subjective Time Experience', unpublished doctoral dissertation, University of Washington, Seattle.
- Schwartz, S. H. (1992) 'Universals in the Content and Structure of Values: Theoretical Advances and Empirical Tests in 20 Countries', M. P. Zanna (ed.) *Advances in Experimental Social Psychology*, pp. 1–65. San Diego, CA: Academic Press.
- Settle, R. B., Alreck, P. L. and Glasheen, J. W. (1978) 'Individual Time Orientation and Consumer Lifestyles', *Advances in Consumer Research* 5: 313–319.
- Staudinger, U. M., Smith, J. and Baltes, B. (1992) 'Wisdom-Related Knowledge in a Life

- Review Task: Age Differences and the Role of Professional Specialization', *Psychology and Aging* 7(2): 271–81.
- Steenkamp, J.-B. E. M. and Baumgartner, H. (1998) 'Assessing Measurement Invariance in Cross-National Consumer Research', *Journal of Consumer Research* 25(1): 78–90.
- Strauss, M. A. (1969) 'Phenomenal Identity and Conceptual Equivalence of Measurement in Cross-National Comparative Research', *Journal of Marriage and the Family* 31: 233–9.
- Szalai, A. (ed.) (1972) *The Use of Time: Daily Activities of Urban and Suburban Populations in Twelve Countries*. Paris: Mouton.
- Szmigin, I. and Carrigan, M. (2001a) 'Introduction to Special Issue on Cognitive Age and Consumption', *Psychology & Marketing* 18(10): 999–1002.
- Szmigin, I. and Carrigan, M. (2001b) 'Time, Consumption, and the Older Consumer: An Interpretive Study of the Cognitively Young', *Psychology & Marketing* 18(10): 1091–116.
- Taylor, S. (1994) 'Waiting for Services: The Relationship between Delays and Evaluation of Service', *Journal of Marketing* 58(2): 56–69.
- Todd, S., Lawson, R. and Northover, H. (1997) 'Value Orientation and Media Consumption Behavior', *European Advances in Consumer Research* 3: 328–32.
- Urien, B. (2001) 'Temps et Comportement Exploratoire du Consommateur' [Time and Consumer Exploratory Behaviour], *Revue Française de Gestion* 135(September–October): 51–62.
- Usunier, J.-C. (1991) 'Business Time Perceptions and National Cultures: A Comparative Survey', *Management International Review* 31(3): 197–217.
- Usunier, J.-C. (1998) *International and Cross-Cultural Management Research*. London: Sage.
- Usunier, J.-C. (2003) 'The Role of Time in International Business Negotiations', in P. N. Ghauri and J.-C. Usunier (eds) *International Business Negotiations*, pp. 153–72. Oxford: Pergamon/Elsevier.
- Usunier, J.-C. and Prime, N. (1988) 'Interviews en Profondeur sur les Perceptions du Temps de Différents Groupes Nationaux' ['In-depth Interviews on Time Perceptions with Respondents from Different National Groups'], *Document de travail*, CERAG, ESA, Université des Sciences Sociales de Grenoble.
- Usunier, J.-C. and Valette-Florence, P. (1991a) 'Perceptual Time Patterns ("Time Styles"), Preliminary Findings', paper present at the Conference on Time and Consumer Behavior, Université du Québec à Montréal, September.
- Usunier, J.-C. and Valette-Florence (1991b) 'Personal Value Systems and Temporal Patterns: Exploratory Findings', paper presented at the Workshop on Life-Styles and Social Values, EIASM, Bruxelles, 14–15 October.
- Usunier, J.-C. and Valette-Florence (1994) 'Perceptual Time Patterns ("Time-Styles"): A Psychometric Scale', *Time and Society* 3(2): 219–41.
- Valette-Florence, P., and Usunier, J.-C. (1993) 'A Cross-Cultural Comparison of Individual Time Orientations', paper presented at the Academy of Marketing Science, World Marketing Congress, Istanbul, Turkey, July.
- Valette-Florence, P., Ferrandi, J.-M. and Usunier, J.-C. (2001) 'Le temps des Consommateurs: Le cas du téléphone portable' [Time and Consumer Behavior: The Case of Mobile Phones], *Revue Française de Gestion* 132: 112–18.
- Valette-Florence, P., Usunier, J.-C. and Falcy, S. (1995) 'Comparaison des Systèmes de

- Valeurs et des Styles de Temps: Une Etude Exploratoire' [Comparison of Value Systems and Time Styles: An Exploratory Study], *Economies et Sociétés* 21(5): 87–115.
- Van de Vijver, F. and Leung, K. (1997) *Methods and Data Analysis for Cross-cultural Research*. Thousand Oaks, CA: Sage Publications.
- Venkatesan, M. V., Schroeder, J. and Al-Weqaiyan, A. (1996) 'Time and Consumer Behavior in Different Cultures', G. Morello (ed.) *Proceedings of the International Symposium in Celebration of the 40th Anniversary of the ISIDA*, pp. 27–43. Palermo, Italy: ISDA.
- Verwaerde, S. (2005) 'Le Matérialisme dans les Perceptions Temporelles' [Materialism and Time Perceptions], MA Thesis, University of Lille.
- Voydanoff, P. and Kelly, R. F. (1984) 'Determinants of Work-Related Family Problems Among Employed Parents', *Journal of Marriage and the Family* 46(November): 881–92.
- Zakay, D. and Hornik, J. (1991) 'How Much Time Did You Wait in Line?: A Time Perception Perspective', in J.-C. Chebat and M. V. Venkatesan (eds) *Time and Consumer Behavior, Proceedings of the VIIth John-Labatt Marketing Research Seminar*, pp. 1–18. Montréal: U.Q.A.M.
- Zeithaml, V.A. (1988) 'Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence', *Journal of Marketing* 52(2): 2–22.

APPENDIX 1

Dimensions and items of the time styles scale

1. Linearity and economicity of time

* sub-dimension **Economic time**

- 'I plan my activities so that they fall into a particular pattern during the day'¹
- 'I like to have a definite schedule and stick to it'³
- 'I like to plan my daily activities so I know just when to do each thing'²
- 'I enjoy following a schedule'²

* sub-dimension: **Non-organized time**

- 'I hate following a schedule'²
- 'It is more fun to take one thing at a time than to plan my day in advance'²
- 'I hate to make any sort of definite plans weeks or months in advance'³

2. Temporal orientations

* sub-dimension: **Orientation towards the past**

- 'I feel nostalgic about the past'⁵
- 'When I am by myself, my thoughts often drift back to the past'³
- 'I think quite often about my life as it used to be'²
- 'Sometimes I find myself dwelling on the past'⁴

* sub-dimension: **Orientation towards the future**

- ‘I spend time thinking about what my future might be like’⁴
- ‘I think a lot about what my life will be some day’²
- ‘Many of us tend to daydream about the future. It also happens to me’⁴
- ‘I often think about the things I am going to do in the future’²

3. Obedience to time* sub-dimension: **Time submissiveness**

- ‘No matter how hard I try, I am nearly always a little late’² (reverse scored)
- ‘I am almost never late for work or appointments’³
- ‘If the only way I can get to an appointment is by rushing, I’d rather be late’³ (reverse scored)
- ‘I would rather come early and wait than be late for an appointment’³

* sub-dimension: **Time anxiety (perceived usefulness of time)**

- ‘Looking at a typical day in my life, I think that most things I do have some purpose’⁴ (reverse scored)
- ‘I sometimes feel that the way I fill my time has little use or value’⁴
- ‘I am bored by my day-to-day activities’⁴
- ‘I often feel that my life is aimless, with no definite purpose’⁴

4. Temporal persistence* sub-dimension: **Tenacity**

- ‘Once I have started an activity, I persist at it until I’ve completed it’⁴
- ‘When I begin a project, I don’t like to stop it until it is finished’²
- ‘When I am interrupted doing a task, I almost always go back to it as soon as I can’²

* sub-dimension **Preference for quick return**

- ‘I would prefer doing several very small projects than one very large one’²
- ‘I would prefer doing one very large project than several small ones’² (reverse scored)
- ‘I would rather try to get two or three things done quickly than spend my time on one big project.’²

Sources: 1: Usunier (1991); 2: F.A.S.T. (Alreck, 1976; Settle and Alreck, 1978); 3: Calabresi & Cohen (1968); 4: Adapted from Bond & Feather (1988) (reworded); 5: Usunier & Prime (1988).

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