Time Styles and the Waiting Experience
An Exploratory Study

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In this exploratory research, the authors try to relate the actual duration of waiting and consumers’ “time styles” to the way they experience waiting, especially in terms of passive and active impatience. These variables are linked to waiting acceptability and to satisfaction with the service. The resulting model has been tested with a structural equations method based on public transportation data. Significant relationships have appeared, especially a direct link between actual waiting time and waiting acceptability, whereas time styles (mostly economic time orientation) influence perceived time pressure and active impatience but not waiting acceptability.

Time is a key dimension of service activities as concerns opening hours, service schedules and duration, or waiting for service performance. Among the temporal aspects of services, waiting time before service performance has been a topic of interest for researchers, especially in the area of management science (Carmon, Shantikumar, and Carmon 1995; Katz, Larson, and Larson 1991; Larson 1987). The service delivery process starts and ends at definite time periods, chaining a series of successive steps. Customers experience the whole of the service delivery process and thus include waiting in their overall assessment of service quality. On the other hand, service providers often consider waiting as being external to their core business and to some extent out of their control and consequently as an area of reduced commitment.

Some empirical studies are devoted to waiting time with experimental settings, either natural or laboratory (Carmon and Kahnemann 1997; Chebat and Venkatesan 1991; Hui and Tse 1996; Taylor 1994). This research deals with the customer waiting in real life conditions. It attempts to define the link between personality traits related to time (time styles, Valette-Florence, Usunier, and Falcý 1995) and the way customers experience waiting time. As noted by Taylor (1994), individual differences in temporal orientations might influence the waiting experience and are therefore worth exploring. This study bridges two research streams (waiting and time styles) to deepen our understanding of waiting psychology and to provide additional insights as concerns the time component of service quality evaluation.

The first section presents literature on waiting and time styles as well as on the psychological aspects of the waiting experience. The second section proposes a theoretical model. The empirical setting is based on public transportation; it is described in the third section, which explains...
how waiting times have been measured and how people have been interviewed. The fourth section presents and discusses the empirical results for the model based on a structural equations approach. Finally, the last section discusses the managerial implications and the limitations of this study.

WAITING AND TIME STYLES

Perceptions and attitudes of consumers vis-à-vis waiting time are of prime importance for service industries in which consumer waiting has an impact on satisfaction and global evaluation of service quality. As concerns the study of waiting time, a simple and operational definition is based on two aspects:

- objective time (based on reality), as measured by clocks, watches, and chronometers—that is, mathematical time, that can be counted, compared, added, and multiplied. Specialists of the queuing theory have made a decisive contribution in this area, not only concerning the optimal waiting time for the customer but also concerning the way waiting lines, waiting rules, and service provisions should be organized to make waiting more acceptable (e.g., Larson 1987) and decreasing the psychological cost of objective waiting time (Carmon, Shantikumar, and Carmon 1995).

- subjective time (based on perceptions)—that of individuals who experience time with more or less intensity, as a resource or a constraint, individually or collectively, being synchronized with others to various extents. Subjective time is often depicted as perceptual, flexible, changeable, and elastic, susceptible to extension or shortening according to the type of activities undertaken. Authors in this field consider the subjective experience—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; Hui and Tse 1996; Jones and Mowen 1991; Leclerc, Schmitt, and Dubé 1995; Taylor 1994; Zakay and Hornik 1991).

As noted by Katz, Larson, and Larson (1991), there are basically two ways for a service provider to manage waiting: The first relates to the service performance itself; the second deals with the ways and means to influence the customer’s perception of waiting time. This contrast highlights two different worldviews, that of service providers on one hand, who think more in economic and objective time terms (time bearing for them direct consequences in terms of expenses and receipts), and that of customers on the other hand, living an immediate experience in a more fuzzy manner filtered by their subjectivity. Yet, waiting is precisely a turning point between the service provider’s time and the customer’s time—the encounter between two temporal worlds. In this study, we explore subjective time, based on service customers’ perceptions, while considering objective time and actual waiting duration.

Waiting for Service

Queuing theory, the branch of operations research dealing with waiting lines, has been the main contributor to the issue of waiting for service. The aim is to optimize a queuing system consisting of lines and servers by taking into account the statistical laws describing the arrival of customers (e.g., Eick, Massey, and Whitt 1993; Whitt 1995), especially peak hours (e.g., Green and Kolesar 1995). A cost function is minimized that combines the labor costs of the service provider and the waiting costs of customers that depend on the monetary value of their time (Fitzsimmons and Sullivan 1982). A number of different issues have been considered when modeling queues such as the pooling of queues and servers (Gilbert and Weng 1998; Mandelbaum and Reiman 1998) or the optimal ordering of servers in a multistage queuing system (Yamazaki, Sakasegawa, and Shantikumar 1992).

There is a progressive evolution of the management science literature toward more psychological and subjective aspects of the waiting experience. Recently, some researchers proposed to improve the realism of queuing models by including psychological or behavioral components, such as the influence of social justice on attitudes toward queues (Larson 1987), the provision of information to customers about anticipated delays (Whitt 1999), or the entertainment of waiting customers to reduce the penibility of waiting (Katz, Larson, and Larson 1991). The psychological cost of waiting is now included in queuing models through variables called disutility, stress, or dissatisfaction (Carmon, Shantikumar, and Carmon 1995; Osuna 1985). The consequences of dissatisfaction may be measured in terms of lost business opportunities (Davis 1991). Everyday human behavior is more and more incorporated in queuing models such as reneging from a queue (leaving after waiting some time) or balking (leaving immediately, before entering the line) (Whitt 1999).

Hornik (1984) studied waiting lines in stores. He compared different solutions for organizing waiting lines (for example, unique vs. multiple lines) and different waiting situations (such as short or long queues) and tried to assess to what extent people tend to over- or underestimate the actual duration of their wait. The empirical findings evidence that on average, customers significantly overestimate waiting time. However, reasons for estimation errors, to be

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normally found in the characteristics of the waiting lines, do not appear as significant.

Maister (1985) describes what he calls the “psychology of waiting lines” with the view of offering insights to service organizations seeking to reduce customer dissatisfaction with waiting times. He cites eight factors that contribute to negative feelings about waiting, making it frustrating, annoying, and even discouraging: (a) idle time feels longer than busy time; (b) preprocess waits feel longer than in-process waits; (c) impatience makes wait seem longer; (d) uncertain waits are longer than known, finite waits; (e) unexplained waits are longer than explained waits; (f) unfair waits are longer than equitable waits; (g) the more valuable the service, the longer the customer will wait; (h) solo waits feel longer than group waits.

Taylor (1994) proposes a typology of waiting situations depending on whether the wait takes place before, during, or after the service itself and whether the customer physically waits at the service delivery place or elsewhere. Within preservice waits, which are of interest to this article, the wait may take place before the scheduled time or, when the service is delayed, with a waiting line. The diversity of studies on waiting in service situations accounts for the complexity of the topic. There are basically five different types of contributions dealing with (a) how customers experience and react to delays and problems in delivering the service in due time, particularly in exceptional and/or deteriorated situations (e.g., Taylor 1990, 1994, in the case of airline flight delays); (b) waits in standard situations in which the customer has clear expectations as to the waiting time, and the service provider’s operations run normally—that is, the basic setting for the present research; (c) factors that may make the wait more or less tedious and, therefore, the ways and means to reduce the painfulness of waits (e.g., Chebat, Filliatrault, and Gélinas-Chebat 1995; Maister 1985); (d) the estimation of waiting times by service customers and particularly the overestimation of waiting durations (e.g., Hornik 1984); and, finally, (e) the impact of waiting rules and procedures as well as the organization of waiting on customers’ attitudes and satisfaction toward the service (e.g., Carmon, Shantikumar, and Carmon 1995, who model the influence of service schemes on consumer satisfaction; Dubé, Leclerc, and Schmitt 1991, who test the influence of wait at different phases of a service delivery process; Pruyn and Smidts (1998), who test the influence of the waiting environment on satisfaction with the service).

Among the 22 items in the SERVQUAL scale (Parasuraman, Zeithaml, and Berry 1988), 4 items directly concern the time dimension of service quality. One item evokes the quickness of service personnel and contributes to the responsiveness factor; 2 items deal with keeping on time, contributing to the reliability factor; and 1 item relates to opening hours, interpreted as an element of an empathy factor describing an understanding by the service provider of each customer’s unique needs.

**Time Styles**

Time appears as a multifaceted concept (McGrath 1988; Orstein 1969), with dimensions such as duration, date (event time), or pace (biological rhythms, time budgets). The study of time may target individuals and look at how they actually experience and manage their time, or it may focus on synchronization and planning processes within a particular group that shares common time representations (Hall 1983).

The general attitude toward time, which may be called time style in parallel with lifestyles, can be broken down into several dimensions. Researchers have found very similar dimensions, although they started from quite different paradigmatic and disciplinary approaches, such as psychology (Bond and Feather 1988; Calabresi and Cohen 1968; Wessman 1973) or anthropology (Hall 1983). Psychologists have accumulated numerous observations and have shown the importance of the temporal dimension of personality as influencing a large variety of behaviors (Fraisse 1984). In parallel, anthropologists reached similar conclusions concerning peoples and cultures (Graham 1981), locating time patterns at the level of collective cultural programming and shared meaning rather than at the level of individual mindsets.

In marketing, individual temporal orientations (Alreck 1976; Bergadà 1991; Holman 1981) try to identify and measure consumers’ attitudes regarding several dimensions of time (economic dimensions, projections on the time line, etc.) that influence their decisions (e.g., Jacoby, Szybillo, and Berning 1976; Mowen and Mowen 1991; Valette-Florence, Usunier, and Falcy 1995). This stream of research originates from the observation that individuals exhibit different levels of sensitivity to time-related issues. Some individuals are in a hurry and plan long in advance, whereas others are relaxed and show little concern and commitment for respecting dates and deadlines.

Usunier and Valette-Florence (1991, 1994) have developed a psychometric scale of time styles that comprises five dimensions, namely, economicity of time, past orientation, future orientation, time submissiveness (the capacity to comply with schedules), and feeling of uselessness of time (related to the belief that one’s own time has little value or purpose). Time styles are of prime interest for the study of waiting time because they may influence the way people individually experience waiting. The economicity of time is in keeping with the assumption that time has an intrinsic value; it is summed up by the motto “time is money.” People who have an orientation toward economic
time are particularly sensitive to wasted time; they abundantly use markers of time such as watches, clocks, and agendas, and they allocate definite time batches, with precise starting and finishing dates, to each daily or weekly activity so that their time is scheduled and their tasks planned. Some authors call this dimension “structure” (Alreck 1976) or “structured routines” (Bond and Feather 1988).

Temporal orientations toward the past or the future can coexist and do not contradict each other; they have been well described and evidenced by anthropologists (Kluckhohn and Strodtbeck 1961). Individuals project themselves to horizons that can be more or less long in terms of time span. The strength of temporal projections relates not only to the horizon but also to the frequency of thoughts in relation to the past or the future and to the preciseness and realism of either memories or the “imagination of the future.” According to experimental psychologists, this dimension of time can be traced back to observable behavior, such as the socialization process (Trommsdorff 1983). It also has been shown to influence consumer planning in the case of summer vacations that may require advance planning of 6 months’ time or more (Valette-Florence, Usunier, and Falcy 1995).

**Psychological Dimensions of the Waiting Experience**

When waiting, people tend to have a feeling of empty and stretched-out time. Fraisse (1967) explains that our awareness of duration is accompanied by a sense of resistance of time. It manifests itself in an affective state for which the German language “uses the word Langweile to express a feeling of boredom which results from a situation out of which one cannot escape” (p. 215), “a feeling that time is long and stretches out” (p. 217). This state of mind, which we call later passive impatience, is also described by James (1946) as a state of mind in which people, having nothing to do, drift all their attention to the passage of time. Closing the eyes for one minute and doing nothing may appear as endless, because one is locked up in the dull experience of empty time. Therefore, waiting causes discomfort, and even anguish. Goldberg (1971) describes the anguish of waiting as being unbearable for some people: “they climb the wall . . . they crawl out of their skins . . . are about to burst” (p. 417).

These feelings of helplessness are all the more important when people feel under time pressure: They have to wait and to be idle while they think about all they have to do. Wessman (1973), commenting about the subjective experience of time, proposes a construct that he calls immediate time pressure, consisting in “distressing feelings of being rushed, being overburdened, being scattered, run-

ning out of time . . . a pressured sense of time” (p. 105). The construct has two opposite positions, one in which people feel harassed and out of control, and the other in which adaptive flexibility and relaxed mastery are experienced. This construct, which we call later perceived time pressure, has an influence on the nature of impatience. It tends to transform an uncomfortable feeling of emptiness of time, that is, passive impatience, into a feeling of wasting one’s time, leading people to try and control the waiting situation while not being able to (called later active impatience).

Our approach tries to establish the link between the time style of service customers on one hand and their experience of waiting on the other while taking into account the actual waiting time measured by a chronometer. Thus, it combines an explanation by individual differences (time styles) and an explanation by situational differences (objective waiting duration) and highlights the psychological dimensions of the customer’s waiting experience, mostly in terms of time pressure and impatience. As noted by Hui, Thakor, and Gill (1998, p. 470), it is perfectly possible that two individuals may agree on their perception of the length of a wait but differ considerably with regard to their affective response due to various environmental and personal conditions.

The waiting experience is captured in this research through two components: (a) passive impatience linked to finding time longer and (b) active impatience, which corresponds 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 for it. Both underlying constructs of active and passive impatience have an emotional nature; they are near to what can be found in recent research contributions on waiting time under the generic name affective response; it is diversely operationalized, explaining why we have chosen to develop our own operationalization. Taylor (1994) develops a scale based on uncertainty and anger-related items; Hui and Tse (1996) use an affect scale comprising five items, which is partly based on Mehrabian and Russell’s scale (1974); and Dubé, Chebat, and Morin (1995) use the affect grid of Russell et al. (1989). Pruyn and Smidts (1998) operationalize the affective response to waiting by using five differential semantics items on which subjects are asked to rate the irritation, fairness, annoyance, boredom, and stress experienced during waiting.

Prime (1994) by the means of in-depth interviewing combines economic time and temporal orientations and contrast two ideal types. Quantitative individuals display strong economic time and marked temporal projections, mostly toward the future, and have a sense of the usefulness and purpose of their time. On the other hand, qualitative persons display low concern with economic time, and
their projections toward the past and the future are less pronounced; they tend to live in the present, in the here and now, and have little sense of the usefulness and purpose of their time. There is no clear rationale linking the “time submissiveness” dimension of time styles to the waiting experience. People who have problems with their schedule may be qualitative people who do not care about being on time or quantitative people whose carefully planned schedule is disturbed by hectic activities. As concerns the dimension of “feelings of uselessness of time” as a permanent trait of time style, it can be argued that it leads to less perceived time pressure and therefore less impatience.

Thus, our general assumption is that quantitative people will tend to have a more negative perception of the waiting experience than qualitative people. More specifically, 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. It is not assumed, however, that time styles directly influence the way people subjectively experience waiting. Rather, a permanent characteristic of personality (time style) has an impact on a mediating construct (perceived time pressure) that, in turn, impinges on the subjective experience of waiting.

There are two issues in the process of active impatience: The first is the need to control the situation that results in people trying actively to check whether the bus is coming or not; the second is the locus of causality and the attribution of responsibility for waiting when it is perceived as too long. Our assumption is that actively impatient people will not find the wait less acceptable than others will. The rationale for this assumption is that people are able to assess that their active impatience is due to their own time style, that is, their own personality; they display some consciousness of their own attitude of active impatience and do not attribute it to the service provider.

PRESENTATION OF THE MODEL

The proposed model (Figure 1) is based on time styles and waiting time that corresponds to the actual waiting duration. The ultimate variable to be explained, on the right side of Figure 1, is satisfaction, based on the customer evaluation of the service. Satisfaction gives an operational nature to the model, because it is a key concern for the service provider. The model assumes that the customer’s waiting experience depends mostly on two variables: (a) the actual waiting time as the hard fact being at the core of the waiting phenomenon and (b) the customers’ own time styles, which influence their perceived time pressure. The waiting experience leads to a more or less positive judgment of waiting acceptability, which partly explains the overall satisfaction with the service.

The general idea of Figure 1 is that the influence of actual waiting time on waiting acceptability follows a double path: on one hand directly through cognition (longer waits are less acceptable), on the other through the perceptual aspects of the waiting experience (passive and active impatience). A number of relationships in Figure 1 are straightforward: Unpleasant waiting experiences lead to low levels of waiting acceptability, which in turn negatively affect overall satisfaction because the wait is a minor but significant part of the overall service encounter that influences customers’ global evaluation of the service; similarly, when passive impatience piles up, it results in active impatience. However, it should be noted that other factors intervene as explanatory variables of satisfaction (for instance, duration of travel or comfort in the bus), and they are not considered here.

Perceived time pressure corresponds to a mental state before the service. Before customers have started waiting, they already perceive their time as being scarce and they feel tense. The waiting experience relates to the customers’ subjective experience, revolving around passive impatience (being simply bored, feeling that time passes too slowly) and active impatience (psychological tension when waiting, anguish and guilt feelings about wasting one’s time, being on the lookout; see Appendix A). Thus, we take into account affective reactions following research findings on consumer behavior (Derbaix and Pham 1989; Holbrook 1986) and those relating more specifically to waiting experiences (Dubé, Leclerc, and Schmitt 1991). Finally, waiting acceptability corresponds to the judgement customers pass about the wait as being acceptable or not. This variable has been used in other studies (Chebat and Venkatesan 1991; Hui and Tse 1996).

FIELD STUDY

The public transportation network in Grenoble, France, was used for this research. The network consists of 20 bus lines and two recently built streetcar lines. It provides roughly 200,000 journeys per working day for a total population of 360,000 inhabitants. The bus lines surveyed are medium- to high-frequency lines with average waiting times of about 5 minutes. Waiting for the bus takes place on pavements with aluminum and glass sheds that signal the bus stops and protect customers from rainfall (Abribus).

Our conceptual model is supposed to cover any kind of service. It is therefore worth noticing that waits for public transportation, in comparison with other everyday-life services, include
• waiting situations without a line (as for waiting rooms by doctors);
• waiting situations without formal service rules, such as “first come, first served” (in France, all customers may enter the bus without priority based on their arrival at the bus stop);
• outside waiting situations (as often for movie theatres);
• highly diverse waiting locations: the transportation network has some 500 stops, and each customer uses a minimum of 2 stops (way and return), often more;
• waiting times randomly distributed: the frequency of buses is such that customers generally reach the bus stop without targeting a precise schedule and do not know how long their waiting time will be (0 to 10 minutes, rarely more);
• waits without feedback: no information is given to the customers who do not know when their wait will end before the bus appears.

Operationalization of Variables

Actual waiting duration is measured by a chronometer, which requires clearly defining the starting and finishing instants. Start takes place when customers reach the bus stop (i.e., they stop walking), and finish is signaled by the fact that the bus is motionless (wheels do not turn, customer(s) start proceeding to its doors). An investigator must, therefore, observe service customers during the entire waiting period. Time styles are collected using the scale developed by Usunier and Valette-Florence (1994) presented above. In its full version, it consists of 23 items; the items finally used for this research are detailed in Appendix A.

Waiting acceptability and satisfaction are measured by a single item, presented as an attitudinal scale: “The waiting time for this bus was reasonable, acceptable,” and “I am satisfied with this ride and the way it took place.” Perceived time pressure is measured by a single item: “I am in a hurry; I have to be quick,” proposed to the interviewee as an attitude scale.

Both passive and active impatience are operationalized through three items that build psychometric scales presented in Appendix B. We have proceeded as recommended for developing appropriate psychometric measures (Churchill 1979; Peter 1979, 1981), in a first step selecting eight items based on our theoretical and conceptual understanding of the phenomenon under review. The wording of the items is based on the review of literature and on nondirective interviews. In a second step, the scale has been purified, and two items, with lower commonalities, have been removed. Factor analysis led to the two theoretical dimensions expected. The items contributing to the dimension of active impatience express a state of internal preoccupation, disorientation, and being on the lookout for the environment. It is worth noting that we have not found an existing scale measuring what psychologists call situation anxiety, corresponding partly to our dimension of active impatience, that is, anxiety when engaged in a definite course of action as opposed to permanent anxiety as a character trait for which several scales are available.

Experimental Conditions

The survey was a face-to-face interview done by professional interviewers who had been briefed for this par-
ticular research. The interviewers were moving constantly on the network; when they arrived at a bus stop, they selected the first customer arriving at the stop, chronome- tered his or her waiting time, then got on the bus to administer the questionnaire. Public transportation systems often use the random wandering around of interviewers to randomly select interviewees. To be more rigorous, it is a random selection of “journeys”: a customer travelling four times a day has four times as many chances of being interviewed than another travelling only once. The nonresponse rate was on average very low, 3% to 5%: Interviewing customers in the bus is well perceived and implies no waste of time for them.

The population sampled was composed of adults using public transports, eliminating children and teenagers who are a significant part of the customer base but would require a specific study. A sample of 321 responses was obtained: 33% of the interviewees were men and 67% women (a standard distribution for public transportation services); 65% were between the ages of 18 and 39, 21% between 40 and 59, and 14% older than 60 years (also a standard representation for public transportation, given the absence of minors); 39% were employed, 33% were students, 10% were unoccupied persons, 8% were unemployed, and 10% were pensioners (a standard representation, given the large student population in the Grenoble area).

TEST OF THE MODEL AND FINDINGS

Model Specification

There are 7 conceptual variables drawn in Figure 1, and in fact 11 construct variables in the model, if we take into account the various dimensions of time styles (5 dimensions for 1 concept). Measurement variables (indicators) number 33 when taking into account the 23 items of the time-styles scale and the 6 items of the waiting experience scale. In a first run, the number of links to be tested is too important, and the model cannot converge. The 23 items of the original time-styles scale have not been kept because the last 2 factors have been removed. “Time submissiveness” has an almost satisfactory Cronbach alpha (.67), but it has no significant link with the constructs under review, whereas “feelings of uselessness of time” has no significant link with any of the constructs under review, except active impatience (t = 2.0; p < .05), and a Cronbach alpha that is too low (.59; see Appendix A). The method for estimating the parameters is that of maximum likelihood because some variables do not present a full multinormal distribution (with LISREL 8, Jöreskog and Sörbom, 1993). The model (Figure 2) converges in nine iterations.

Quality of Adjustment and Estimates

Before considering the structural links and their interpretation, it is necessary to examine the quality of the model adjustment to the data (Bagozzi 1980, 1981; Fornell and Larcker 1981; Steiger 1990; Valette-Florence 1988). Several statistics provided by the software allow us to appreciate the quality of the adjustment, which is satisfactory. The goodness-of-fit index (GFI) is .91, and the adjusted goodness-of-fit index (AGFI) is .89, both indexes being largely higher than the .80 threshold. The root mean square residual index (RMR) appears as being .06, which is slightly higher than the recommended threshold of .05. Residuals present a roughly normal distribution.

Table 1 indicates how measurement variables are correlated with the constructs they are supposed to measure. The mean squares of parameters must be higher than .5 for the variance shared by a construct with its indicators to be higher than the variance due to measurement error. This minimal condition for convergent validity is verified for the five theoretical constructs in the model that are represented by more than one indicator.

Table 2 allows a basic assessment of discriminant validity. The variance shared by two constructs is in all cases inferior to the variance shared between these constructs and their indicators.

Findings

Estimation results are presented in Table 3 and graphically represented in Figure 2. Many relationships are statistically significant, confirming the overall meaning of the model.

In terms of percentage of variance explained, actual waiting time and time styles explain fairly well active impatience (43%), the acceptability of the wait (28%), and weakly, satisfaction (3%). This is not surprising because the initial wait is only one among several attributes of the bus ride.

Although actual waiting time significantly increases passive impatience, that is, the feeling that time is longer (t ratio = 4.80, relation is significant at .001 level), it does not result in directly inactive impatience. It influences only one dimension of the waiting experience. The link between passive and active impatience is quite strong.

Each of the three components of quantitative time style is positively related to the perceived time pressure (economic time: t = 2.61, p < .01; past orientation: t = 2.06, p < .05; future orientation: t = 1.88, p < .065). Service customers who feel time pressure as a consequence of their more quantitative time style exhibit a higher level of active impatience (t = 3.89, p < .001) but not stronger passive impatience.
Passive impatience actually influences waiting acceptability ($t = -6.41, p < .001$), but active impatience has no negative impact on waiting acceptability. Logically, finding the wait acceptable has a favorable impact on the overall satisfaction with the service ($t = 2.95, p < .005$), whereas the actual waiting time has a negative influence on the statement of waiting acceptability by customers ($t = -4.48, p < .001$).

**DISCUSSION AND LIMITATIONS**

**Discussion**

Figure 3 presents a synthesis of the empirical findings. Finally, three chains are evidenced by this research. The longest chain evidences the following logic: The longer the waiting time, the more customers are passively impatient, the less acceptable they find the wait, and consequently, the less satisfactory they consider the service. Observed waiting duration varied in a range from 0 to 10 minutes (except in some rare cases), and service customers show a relatively high level of sensitivity to such time spans.

The second chain highlights the direct relationship between actual waiting time and waiting acceptability. The hypothesis of a double link between wait duration and waiting acceptability is thus verified, the first link being a direct one, and the second being mediated by passive impatience.

The third chain relates to the influence of time styles. The more quantitative customers’ time styles, the more they will experience active impatience when waiting. However, active impatience has no influence on the judgement about waiting acceptability, suggesting that customers correctly attribute their feelings of uneasiness when waiting and their need to control the situation to their own subjective experience rather than to the quality of the service process.

**Implications**

This research highlights two forms of impatience, the first being “passive,” related to what we have called “finding time longer,” and the second being an “active” form of impatience involving attempts at controlling the situation. The passive form of impatience depends on the actual waiting time, whereas the active form is related to the customer’s personal attitudes toward time. Those who have a strong leaning toward quantitative time express more active impatience, tensely hoping for the oc-
currence of the event (being on the lookout, being aroused), whereas others first go through a state of passive impatience (plainly, being bored) before reaching a state of active impatience.

Three main implications have to be emphasized. First, the judgement about waiting acceptability follows a double path: one based on emotions, the other one on cognition. Second, permanent aspects of personality, such as the individual time style, affect transitional factors when the customer waits for the service (feelings of time pressure), which in turn influence the way it is experienced (active impatience). Third, the affective/emotional level is influenced both by an objective factor (actual duration) and by a personality trait, time style. On the other hand, the cognitive process for evaluating the wait is influenced only by an objective element, actual time. This point is fairly reassuring for service providers who fear that customers’ subjectivity may result in unfair evaluation of their performance: A rational evaluation process seems to predominate in customers’ minds, at least in the relatively short wait situation studied here. This result confirms the relatively “placid” nature of service customers when they are in customary service situations: Hui and Tse (1996) also show that for short waits (5 minutes in front of a computer screen), customers do not need any particular information telling them what the expected waiting time is, whereas for longer waits (10 to 15 minutes), this piece of information improves the customer’s acceptance of waiting.

### TABLE 1
Relationships Between the Constructs and Their Measures (factor loadings)

<table>
<thead>
<tr>
<th>Measures (items)</th>
<th>Passive Impatience</th>
<th>Active Impatience</th>
<th>Economic Time</th>
<th>Past Orientation</th>
<th>Future Orientation</th>
<th>Convergent Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I was bored”</td>
<td>.83</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Time passed quickly”</td>
<td>.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I found time long”</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>“I was on the lookout . . .”</td>
<td></td>
<td>.80</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>“I was concerned . . .”</td>
<td>1</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>“I was wondering . . .”</td>
<td></td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Enjoy schedule”</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>“Stick to schedule”</td>
<td></td>
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<td>“Dwelling on the past”</td>
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<td>“My life as it used to be”</td>
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<td>“Things to do . . .”</td>
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<td>“My future might be like”</td>
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<td>“My life will be . . .”</td>
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NOTE: Figures below the diagonal correspond to correlation and those above the diagonal indicate squared correlations to allow the calculation of discriminant validity. c. val. = convergent validity.

### TABLE 2
Correlation Between Latent Variables

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<th>$\eta_1$</th>
<th>$\eta_2$</th>
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<th>$\eta_4$</th>
<th>$\eta_5$</th>
<th>$\xi_1$</th>
<th>$\xi_2$</th>
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<tr>
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<td>.00</td>
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<td>.03</td>
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<td>.01</td>
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<td>.12</td>
<td>.14</td>
<td>.00</td>
<td>.06</td>
<td>.00</td>
<td>.00</td>
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<td>$\eta_3$ (active impatience)</td>
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<td>$\xi_1$ (waiting time)</td>
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<td>-.36</td>
<td>-.06</td>
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<tr>
<td>$\xi_2$ (economicity)</td>
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<td>$\xi_3$ (past orientation)</td>
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<td>$\xi_4$ (future orientation)</td>
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<td>.01</td>
<td>.00</td>
<td>-.02</td>
<td>.12</td>
<td>.04</td>
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</table>

NOTE: Figures below the diagonal correspond to correlation and those above the diagonal indicate squared correlations to allow the calculation of discriminant validity. c. val. = convergent validity.
Our findings allow a better understanding of how customers with different time styles experience waiting differently. People who have a more economic time style become more actively impatient than others but are not more negative in service evaluation. In this sense, this study tends to prove that for short and normal waits, it would not be necessary to design any information system for customers about their wait. However, service companies still have to design policies in terms of waiting time and provide their customers with ways to avoid impatience during periods of abnormal waits due to incidents, failures, strikes, and delays due to traffic jams. Furthermore, it is likely that even for normal waits, information given to passengers or entertainment on the waiting site reduces passive impatience, thus avoiding the transformation of passive into active impatience.

Limitations and Avenues for Future Research

There are some limitations to this study that need to be acknowledged. The test was based on a natural setting, that is, real-life waits by bus commuters. Interviewees generally were regular users of the public transportation with a 5- to 10-minute standard wait. If, like other authors, we had studied more exceptional situations (service breakdown, strikes, long delays in the preservice stage, service unfamiliar to the customer) or used a more artificial setting such as a laboratory experiment, relationships between variables would display more strength, and time styles would probably be more explanatory in abnormal situations. Our sample is not representative of the general population concerning time styles, that is, business people and

### Table 3

<table>
<thead>
<tr>
<th>Relationships</th>
<th>Source Variable</th>
<th>Destination Variable</th>
<th>Standard Values</th>
<th>t Test</th>
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<td>$\beta_{21}$</td>
<td>Perceived time pressure</td>
<td>Passive impatience</td>
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<td>ns</td>
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<td>Active impativeness</td>
<td>Waiting acceptability</td>
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<td>ns</td>
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<td>$\gamma_{21}$</td>
<td>Waiting acceptability</td>
<td>Satisfaction</td>
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<td>2.95</td>
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<td>Passive impatience</td>
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<td>$\gamma_{32}$</td>
<td>Actual waiting time</td>
<td>Active impativeness</td>
<td>ns</td>
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<td>Perceived time pressure</td>
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<td>$\gamma_{22}$</td>
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<td>Perceived time pressure</td>
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<td>2.06</td>
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<td>$\gamma_{34}$</td>
<td>Future orientation</td>
<td>Perceived time pressure</td>
<td>.14</td>
<td>1.88</td>
</tr>
</tbody>
</table>

**FIGURE 3**

A Summary of Research Findings

NOTE: For +/−, $p < .01$; for ++/−−, $p < .001$.  

---

\[ 
\text{actual waiting time} \quad \rightarrow \quad \text{passive impatience} \quad \rightarrow \quad \text{satisfaction} 
\]

\[ 
\text{time styles} \quad \rightarrow \quad \text{perceived time pressure} \quad \rightarrow \quad \text{active impatience} 
\]
more generally people with higher income levels tend not to use public transportation. Nonusers of public transportation may have more economic and quantitative time styles than actual users.

Even though time styles do not appear in this study as having a very significant impact on service encounter satisfaction, it is important to emphasize that it is an important construct to consider in the real world. More and more diversity exists in the way people perceive and manage their time (Kaufman, Lane, and Lindquist 1991), and individual differences in terms of time styles influence a number of time-laden consumer services (financial services, life insurance, fast food, etc.). Moreover, the influence of time styles on active impatience would have been even more salient if we had chosen a situation of abnormal wait (i.e., beyond scheduled time) in a service such as air flights, which is visited by more business people who tend to display on average a stronger quantitative time orientation.

Waiting acceptability is certainly a significant element, but it is not the essential explanatory factor of the customer’s satisfaction regarding the service. Other factors play an important role, such as the speed of the journey, comfort, proximity of bus stops, ticket price, driving style of the bus driver, sitting rather than standing, and so forth. Furthermore, the model has been tested with only one service sector and one experimental setting. Some aspects of the waiting experience are different in other service industries. It would therefore be useful to replicate this research design in other service industries, such as banking or retail distribution.

The measures of theoretical constructs are imperfect, which is, indeed, a fairly general problem in social sciences. Waiting for the bus is part of the overall service process that includes also the bus ride. Most of our variables are measured postwait but during the overall service process, that is, after waiting but during the bus drive. This has certain implications in terms of measurement. Ideally, perceived time pressure should be measured prewait and pre-process, that is, just before people arrive at the bus stop and thus start entering the service. However, interviewing customers at this stage has important drawbacks: (a) It would influence their perception of the wait by entertaining them, and (b) it would make the chronometering task almost impossible for interviewers. Perceived time pressure self-reported after the wait is probably a less reliable measure but allows the measurement of other variables. Active and passive impatience are measured postwait, which makes sense because measures for these variables may vary during the wait. We would have had problems establishing consistent measures across subjects because they did not wait for the same time, and the moment when they had been asked to report on these items may have varied across subjects. Concerning time styles, there is little problem to measure them postwait because they are a permanent characteristic of personality.

A better operationalization of the two facets of the waiting experience is possible. Rather than using an ad hoc scale for measuring emotions when waiting, it would be worth testing a more general scale of emotions. Satisfaction was measured during the bus trip and not at its end. It would certainly have been better to collect the judgment at the very end of the service experience. However, this would have increased the cost of the survey, and it was difficult to ask further questions of customers after arrival, when they were anxious to pursue their daily occupations.

The scale used to measure the waiting experience could integrate more affective dimensions such as those of uncertainty and anger developed by Taylor (1994), yet in the context of flight delays. Future research tracks would also include an extension to other service industries to increase the external validity of the findings.

Conclusion

Based on a sample of 320 customers waiting for their busses, we have evidenced that time styles significantly influence the way customers experience their wait. Time styles actually influence the state of mind with which customers start waiting for the service, and this in turn has an impact on the way they experience waiting. However, in the next step of the chain, actual waiting time predominates in shaping customers’ opinions about their waiting and their satisfaction with the service. Given their relative place in the total service experience, actual waiting time and time styles well explain active impatience (43%) as well as waiting acceptability (28%), but their contribution to overall satisfaction, although significant, remains limited (3%). Several links highlighted by this study seem to offer interesting perspectives on the way emotions are shaped and value judgements are created. There may also be research opportunities in further developments of this work in a cross-cultural theoretical frame, because emotions may not only be grounded in psychological but also in cultural traits.
**APPENDIX A**

The Time-Styles Scale

Time styles are measured by the scale developed by Usunier and Valette-Florence (1991, 1994). It comprises 23 items, which are grouped in five dimensions in a first-order factor analysis and six dimensions with second-order factor analysis. Applied to our sample, the factor structure remains stable, after elimination of 3 items that had low factor loadings. The five factors explain 61% of the variance. The first three factors of time styles have been kept in our analysis. Below is the wording of items and their correlation with the factor dimensions.

**Factor 1: economic time**
(20% of variance, Cronbach $\alpha = .85$)

- “I enjoy following a schedule” (.949)
- “I like to have a definite schedule and stick to it” (.817)
- “I like to plan my daily activities so I know just when to do each thing” (.784)
- “I plan my activities so that they fall into a particular pattern during the day” (.783)
- “I hate following a schedule” (inverted; .663)

**Factor 2: orientation toward the past**
(15% of variance, Cronbach $\alpha = .77$)

- “I feel nostalgia for the past” (.817)
- “When I am by myself, my thoughts often drift back to the past” (.804)
- “I sometimes find myself dwelling on the past” (.721)
- “I think quite often about my life as it used to be” (.710)

**Factor 3: orientation toward the future**
(12% of variance, Cronbach $\alpha = .8$)

- “I often think about the things I am going to do in the future” (.827)
- “I spend time thinking about what my future might be like” (.824)
- “I think a lot about what my life will be some day” (.770)
- “Many of us tend to daydream about their future. It also happens to me” (.733)

**Factor 4: time submissiveness**
(7% of variance, Cronbach $\alpha = .67$)

- “No matter how hard I try, I am nearly always a little late” (inverted; .704)
- “I am almost never late for work or appointments” (.776)
- “If the only way I can get to an appointment is by rushing, I’d rather be late” (inverted; .653)
- “I would rather come early and wait than be late for an appointment” (.577)

**Factor 5: feelings of uselessfulness of time**
(6% of variance, Cronbach $\alpha = .59$)

- “Looking at a typical day in my life, I think that most things I do have some purpose” (inverted; .741)
- “I get bored with my day-to-day activities” (.691)
- “I often feel that my life is aimless, with no definite purpose” (.701)

**APPENDIX B**

The Waiting Experience Scale: Active and Passive Impatience

After purification of the scale by removing two of the initial eight items that had a low factor loading, we find clearly two factors that explain 62% of the variance.

**Factor 1: passive impatience**
(variance explained: 45%; Cronbach $\alpha = .73$)
- “I was bored” (.80032)
- “Time passed quickly” (inverted; .78385)
- “I found time long” (.78347)

**Factor 2: active impatience**
(variance explained: 17%; Cronbach $\alpha = .64$)
- “I was on the lookout to see the bus as soon as possible” (.88617)
- “I was concerned with the coming of the bus” (.68595)
- “I was wondering whether the bus would come at last” (.65036)

**REFERENCES**


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