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Consumers' Perceptions of Delays Under Varying Conditions and Across Multiple Stages of Service Encounters

Rivinder S. Gill

A Thesis

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ABSTRACT

Consumers' Perceptions of Delays Under Varying Conditions and Across Multiple Stages of Service Encounters

Rivinder S. Gill

Work by Dubé, Schmitt and Leclerc (1989,1991b) had supported two models where the degree of consumer discontent with waiting was argued to be influenced by the actual timing of delays. An anomaly, however, was found between the predictions offered by their work and that of earlier services literature. A new model was offered in this paper to account for this anomaly. This model argued that in order to accurately predict consumer discontent, the situational context of a service delay needed to be considered along with its actual timing during a service encounter.

An experiment was conducted in which three separate delay conditions were operationalized across two experimental stages. Delay type was offered as a factor that could effectively account for many different service scenarios. Experimental results indicated that delay type needed to be considered along with the timing of delays in order to accurately predict the degree of consumer discontent with waiting.

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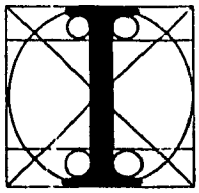
CHAPTER 1



INTRODUCTION

Over the last decade the relative size and importance of the service sectors in both the Canadian and US economies significantly increased. For example, Canada's service sector between 1981 and 1991 saw its employment of Canadians increase from 59% to 66% of its total workforce (Figure 1). This represented an increase of nearly 1.6 million jobs in the Canadian economy (Canadian Economic Observer, 1991). Similarly of the 12.6 million new jobs created in the US in the last decade, almost 85% were supplied by its service sector (Koepp, 1987). By the mid to late 80's, this translated into 76 million U.S. workers in service related industries compared with only 25 million in more traditional manufacturing related sectors. Outside of the sheer number of jobs created over the last decade, the U.S. and Canadian service sectors also helped to diversify their respective economies through the creation of many new job categories (i.e. specialized services).

Not surprisingly, the growth in the service sectors both in Canada and the U.S. coincided with an increase in the amount of research done on service related topics. A major topic during this period concerned service delays and their impact on consumers' evaluations of service encounters. This research was unlike the previous operations research on service delays which mainly focused on the goal of reducing actual waiting time. This new stream of research instead focused on consumers' perceptions of waiting.

Time construct

Prior to the research done on service delays time had already been identified as an important factor in studying consumers' reactions during service encounters. For example, Hornik (1981) first suggested that consumer satisfaction for service encounters would largely be determined by the amount of time consumers spent during service encounters and the way that consumers experienced this time. Time was also later shown by researchers like Carmon (1990) to be a factor which consumers themselves had increasingly come to emphasize during service encounters. The actual importance of time in services was implied by the SERVQUAL scale which was developed by Parasuraman, Zeithalm, and Berry (1988) to capture factors responsible for consumers' evaluations of services. Jones (1991) using a modified version of this scale, for example, found time dimensions like promptness to be extremely important in capturing differences in respondents' reported satisfaction levels.

In trying to determine the impact that the time factor had on consumer satisfaction levels with services, however, researchers first needed to determine the best service context for studying time. In doing so many early researchers chose to study the construct through investigations on service delays and their impact on consumers' evaluations of service encounters.

Study of service delays

Researchers have consistently suggested in the past that service delays are an inherent reality for most services. More recently Zakay (1991) argued that a service's dependency on human intervention (i.e. employee-customer interaction) would naturally tend to cause such phenomena as waiting lines. Even for services which had managed to lessen this barrier through the introduction of measures like ATM's (automatic teller machines) in banks, Zakay argued that there still would be the need for some form of human interaction (i.e. consumer-side). Considering the relative difficulty of standardizing interactions between human beings and machines, let alone between human beings themselves, Zakay argued that most service managers would have to contend with service delays.

Service delays have come to be one of the main focuses for researchers studying services. Services by nature tend to extend over time and in most cases to be produced, delivered and consumed during a single encounter. On the other hand, service delays by definition tend to extend the length of time needed to complete a service encounter. Thus not surprisingly, many researchers have suggested that service delays should impact on the perceived efficiency of services and in turn influence consumers' perceptions of such factors as service quality and satisfaction (Dubé, 1989). In a recent experiment by Katz, Larson and Larson (1991) it was discovered that consumers' reported waiting times during service delays were also related to the eventual levels of satisfaction reported. This apparent relationship between service delays and service satisfaction has continued to focus the effort of many researchers onto the investigation of service delays.

The current urgency in studying service delays can be linked to the value consumers themselves have come to place on time. Researchers pointed out more than a decade ago that consumers had begun to perceive their discretionary time as an ever scarcer commodity (Berry, 1979) Some pointed to the popularity of such time-saving gadgets as microwave ovens, and cellular telephones as evidence of consumers' attempts to cope with this perceived scarcity. Recently, researchers have generally argued that time has become an even more critical issue for consumers (Carmon, 1990). Not surprisingly, most researchers have thus suggested that service delays should have an ever growing influence on consumers' evaluations of services

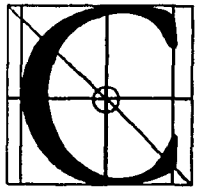
The study of service delays has given researchers a useful way in which to test the impact of the time variable in consumers' service-related experiences Service delays have generally been described as deadweight losses which from an economic perspective raise consumers' opportunity cost (Zakay, 1991). Clemmer and Schneider (1989) argued that service delays, depending on their length, would thus inherently represent many different levels of time investment for consumers. More specifically, they argued that shorter service delays should tend to represent smaller costs to consumers than longer delays. Recently, this idea gained support from Katz, Larson and Larson (1991) who noticed that as consumers' estimates for service delays tended to increase, so too did their reported levels of dissatisfaction. With the ability to be perceived at many different time investment levels, service delays thus offer researchers a very realistic and useful way in which to operationalize the time construct in the study of services.

The relevance of studying service delays can also be supported by the fact that service delays have been found to influence consumer moods (i.e. affective reactions) during service encounters. These moods have in turn been argued to influence consumers' subsequent evaluations (i.e. satisfaction levels) of service encounters. Specifically, Gardner (1985) argued that service delays would tend to induce negative moods on the part of consumers and ultimately create lower satisfaction levels among consumers for service encounters. Though existing literature had supported a theoretical link between moods and service evaluations, no empirical justification was offered until Chébat (1991) empirically tested the relationship between these factors. In his study Chébat discovered that service quality evaluations were related to the mood consumers reported to be in during service encounters. Thus, through their ability to influence mood, service delays can be argued to be an important factor for researchers to consider when trying to predict consumers' reactions to service encounters.

Objective

This paper will first summarize some of the research done to date on service delays. This review will include a look at research done on both consumers' duration estimates of service delays and on consumers' reactions to service delays at different stages of service encounters. The main purpose of this paper will be to extend the current understanding of the relationship between the timing of service delays and consumers' overall reactions to service delays. This will be done mainly through the development of a model aimed at reconciling two conflicting models recently suggested in the literature. The rationale and implications behind this new model will be thoroughly discussed along with the methodology and results of an experimental investigation designed to test its applicability to actual service encounters.

CHAPTER 2



CONSUMERS' DURATION ESTIMATES OF SERVICE DELAYS

In the study of consumer duration estimates of service delays, there have traditionally been two main areas of concern. First, researchers have been occupied with trying to determine the specific processes behind consumers' estimates of service delays (i.e. their length). By understanding these processes and when they are most likely to be used, researchers have tried to increase the reliability of their own predictions regarding the impact of service delays. Secondly, researchers have also focused in on trying to identify situation and environmental variables which when present during a service encounter can influence the specific processes chosen by consumers to estimate the length of a service delay. By identifying these variables researchers have tried to identify strategies for lowering consumers' estimates of service delays. Jointly, both areas have tried to increase the control that service managers can effectively exercise in regulating consumers' estimates of service delays.

This chapter will begin by reviewing some early literature on time estimation. The review will be followed by a discussion of 3 early time estimation models and the development of a model recently proposed to deal with the inconsistencies of these earlier models. Finally, after the discussion on these models, literature on the importance of looking at situation and environmental factors in the context of steadying time estimation will also be presented.

Measurement of service delays

In much of the earlier consumer behavior literature objective (i.e.. standard clock) time estimates were used to study consumers' behavior (i.e.. Jackson-Beeck and Robinson, 1981; Kinsey, 1981; Holman and Wilson 1982). Objective time was described by Zakay (1989) to be calculated through such things as watches, calendars, lunar and solar cycles. It was said to synchronize personal experiences with valid and reliable references (i.e.. a clock) known to others through fixed metric scales (i.e.. hours, minutes, etc.). This method ignored all subjective perceptions of time and instead simply dealt with the construct through straight accounting measures.

This approach was criticized by researchers (Hornik, 1981, 1984; Zakay, 1991) who insisted that some measure for the value of time was needed to reflect consumers' subjective evaluations of time. Dubé (1989) argued that delays could cause varying degrees of annoyance among customers depending on the situational context in which they occurred. Consumers' subjective evaluations of time were put forth as a major situational factor. For example, consumers with severe time constraints were said to be more likely to evaluate the passage of time negatively and to become more annoyed with delays than consumers with more time on hand. Thus consumers' subjective evaluations of the passage of time were argued to be more likely predict consumers' actual reactions to service delays than any simple measure of objective time (i.e.. a clock).

Though time estimation literature had consistently shown that, objective and subjective estimates of time (i.e.. time estimated on part of consumer) were closely related, a perfect correspondence between the two was rarely seen. Hornik (1984), for example, looked at objective and subjective time measures simultaneously in a study on different types of checkout lines. While variations in subjective time estimates on the part of consumers were explained best by actual waiting time, there was on average an overestimation of 2.65 minutes in consumers' subjective estimates. This reinforced the idea that incorporating consumers' subjective perceptions of time afforded a more robust accounting of consumers' actual feelings about delays than the simple use of objective measures.

Immediate vs. remote estimates

In studying consumers' reactions to service delays, researchers have also tried to detect whether the manner in which respondents are asked to estimate the length of delays effects the time estimates they give. For example, Zakay and Fallah (1984) found time estimates more accurate if performed immediately after the interval to be judged than if time was allowed to elapse before estimation. It was suggested that respondents employed a separate estimation paradigm for both immediate and remote time estimates (discussed in detail later).

Short duration estimation

Zakay (1991) suggested that consumers intuitively made either subjective or objective estimates of time depending on the length of the interval to be judged. Recall subjective estimates were argued to represent time judgments made on the part of consumers through their own feelings about the passage time while objective estimates were argued to be based on some measure of time existing outside of a consumer (i.e. a clock or someone with a watch). While long intervals were said to be most often judged by objective estimates, shorter intervals were said to be mainly judged through subjective estimates.

In reviewing past research on service encounters Zakay pointed out that consumers seemed to consistently make subjective type estimates (i.e.. duration estimates of intervals based on personal feelings) when judging the length of service delays. Zakay reasoned this to be the case since most service encounters, in his opinion, typically took place over relatively short intervals of time. Since subjective time estimates suggested that consumers had to some degree think (i.e.. cognitively processed) the passage of time, Zakay argued that past cognitive models of short duration estimates were needed to understand consumers' perceptions of service delays.

In studying short duration estimates, researchers have generally been concerned with how information processed during a target interval effects the estimated duration of that interval. Three separate models had been offered in the past to explain this relationship; the storage size model, the contextual change model and the attentional model (See Zakay, 1991). Each of these models offered a unique perspective on this relationship.

The Storage Size Model

The Storage Size Model is based on the notion that information stored in memory serves as a cue for subsequent time estimation. This model proposes that time estimation is somehow dependent on the actual amount of information stored during a target encounter. More specifically, Ornstein (1969) suggested that the remembered duration of a target interval would increase as (1) the number of target interval events stored and subsequently retrieved from memory increased and (2) the complexity of the events at the time of retrieval increased.

Orstein's first proposal was supported empirically in many studies (e.g. Buffardi, 1971; Goldfarb and Goldstone, 1963; Gray 1982). While Orstein's second proposal was supported by some studies (Underwood and Swain, 1973) in which duration estimates were found to directly increase according to the degree of information processing at the time of retrieval, other studies (Zakay and Fallach, 1984) refuted it (i.e.. duration estimates actually decreased with increased complexity of information processing).

The Contextual Change Model

The Contextual Change Model basically claims that estimates of duration are based on the actual number of contextual changes remembered from an interval. In an elaboration of this model Poynter (1983) suggested that intervals in which many events occur would subsequently produce longer estimates than those in which fewer events occur. This was argued to happen not because of the amount of processing or storage space required, but because intervals with many events were seen as giving consumers, in retrospect, more to think back

on. Thus it was argued that intervals segmented by many events would be looked back on by consumers as having been longer than those segmented with fewer events. Poynter and Homma (1983) found that even when task complexity and required level of information processing were kept constant, increased interval segmentation normally resulted in increased subjective estimates. This was reinforced by Zakay and Feldman (1991) who found that information processing load and the degree to which an interval was segmented by meaningful events were two independent factors with an additive affect on subjective estimates.

The Attentional Model

Finally, the attentional model is based on the premise that subjective duration is related to the degree of attention one assigns to the passage of time. To this end the model proposes the existence of a cognitive timer which is said to require mental energy on the part of individuals for its operation. This energy is argued to be spent whenever someone consciously pays attention to the passage of time and subjective "time units" are argued to collect in the cognitive timer during such times. When someone tries to estimate an interval it is thus suggested that the number of subjective "time units" collected are somehow translated into a duration estimate (Zakay, 89).

It is obvious from such a model that as more attention is devoted to the passage of time during an interval, more subjective "time units" are expected to be recorded in the cognitive timer and duration estimates are as a result expected to be longer. However, it has been argued that if people are somehow occupied (i.e.. by performing some cognitive task) during an interval less attention can be

paid to the passage of time. As a result, less "time units" are gathered in the cognitive timer and duration estimates become shorter.

Though all of these models have separately been supported in empirical studies there are important differences to note between them. The storage size model supports a positive linear relationship between task complexity, information processing load and the length of subjective estimates. The contextual change model, on the other hand, supports a positive linear relationship between the number of contextual changes during an interval and subjective estimates. Finally, the attention model supports a negative linear relationship between task complexity, information processing load and duration estimates of delays. Further whereas the storage size and contextual change model both deal with a memory mechanism the attentional model relies solely on a cognitive timer mechanism.

Resource Allocation Model

Thomas and Weaver (1975) were the first to offer a model which was able to deal with the inconsistencies of the above models. Their model postulated that any stimuli present during a target interval would be analyzed through one of two internal sources; an timer which would process temporal information and an information processor which would help respondents store situational information. Depending on the type of stimuli, individuals were argued to make use of either their internal timer or information processor. In cases where the timer was used, it was suggested that subsequent time estimates on the part of individuals would tend to correspond to those that might be predicted by the attentional model. On the other hand, the use of the information processor was argued to create estimates that would tend to correspond to those that might have been predicted by either the storage or contextual models. However, no clear definitions were given in the Thomas and Weaver model for predicting the use of either the internal timer or the information processor.

In order to improve upon this model, Zakay (1991) argued that in trying to understand subjective time one needed to consider the context under which it was being measured. Factors previously listed by Hicks, Miller & Kinsbourne (1976) as influencing subjective estimates were (1) method of time estimation, (2) duration of estimated interval, (3) the nature of processing required of the subject during the estimated interval, and (4) the nature of the measurement paradigm. Zakay pointed to the latter as the best contextual factor for determining the relevant processor responsible for subjective time estimates.

The nature of the measurement paradigm cited by Hicks et al. referred specifically to the differences between retrospective and prospective time estimation. Zakay (1990) described retrospective estimation as occurring in situations in which individuals would not be expecting to make time estimates. Under such circumstances it was argued that individuals would not be aware during a target interval of the need to pay attention to the passage of time. This was suggested to limit an individual's reliance on their internal timer and to instead focus their attention on informational cues during a target interval. Thus when asked to later estimate the length of a target interval it was suggested that these individuals would primarily recall informational cues stored in memory. Conversely prospective time estimation was described to take place in situations where individuals would be aware before hand of the need to pay attention to the passage of time during a target interval. Under such situations it was suggested that relevant temporal information (i.e. "time units") would be stored in the cognitive timer and recalled when individuals were asked to make estimates.

From this, Zakay (1989) proposed a resource allocation model of time estimation. The main assumption made in this model was that while individuals' attentional resources during a target interval are at all times divided between their internal timers and their information processors, more resources are devoted to the salient mechanism. Thus under a prospective paradigm where respondents are aware before hand of the importance of noting the passage time, it was argued that they would devote more resources to registering temporal information in their internal timers. Under a retrospective paradigm, however, it was maintained that priority would be given to processing non-temporal information in their information processors Though it was acknowledged that some temporal information might be stored even under

retrospective paradigm, it was argued that this information would most often be casual and hard to retrieve. Thus under a retrospective paradigm, information stored by the information processor during the target interval was argued to be the major cue for subsequent estimation. Empirical evidence for this model was offered by Zakay (1989); Zakay, Meran and Ben-Shalom (1989) and Zakay and Tsal (1989).

Zakay (1991) offered important propositions based on the arguments presented both in his model and in earlier time estimation literature. Recall, the attentional model predicted that attention paid to the passage of time during a target interval would effect the length of subsequent estimations. Further the prospective paradigm was argued by Zakay to exist under situations where individuals would be likely to pay attention to the passage of time. As a result, Zakay argued that estimation under a prospective paradigm would be best explained via the attentional model. Estimation under a retrospective paradigm, on the other hand, was argued to be explained via the storage size and contextual models and through a positive linear relationship. Finally, Zakay proposed that consumers' duration estimates of service delays would most often be based on prospective time estimation. This was argued to be the case because consumers' were seen to naturally be concerned with the passage of time during most service encounters. In applying these propositions , Zakay (1991) offered the following axioms:

1. **Perceived level of Social Justice** - Higher levels of perceived social justice, lessen the occupation with the passage of time and thus result in lower estimates of elapsed time.
2. **The Perceived Pleasantness of the waiting environment** - An attractive environment attracts attentional resources and hence, reduces estimates of elapsed time.

3. **The Existence of Feedback on the passage of time** - Feedback reduces the need of each individual to process the passage of time and thus reduces estimates of elapsed time.
4. **"Filled Time" versus "Empty Time"** - Empty intervals attract attention to the passage of time and as a result increase estimates of elapsed time.

Non-temporal factors

Zakay in his second propositions argued that environmental and situational factors during service delays could either focus consumers' attention on the passage of time or distract attention away from the passage of time. Depending on the specific effect, these factors were thus argued to influence consumers' perceptions of service delays. However, Zakay gave no specifics as to what particular environmental and situational factors could cause these effects. We will now try to identify and discuss the significance of some of the more important situational and environmental factors which have been suggested in the past to affect consumers perceptions of service delays.

Importance of non-temporal factors

It may be interesting for managers to know that certain situational variables may cause service delays under say a prospective paradigm to be perceived as being either longer or shorter. However, this in itself does not identify any specific managerial actions for reducing the negative impact of service delays. To make use of the research done on consumers' estimation of service delays, specific situational and environmental variables first need to be isolated. Factors then identified as upwardly influencing estimates of service delays should thus either be suggested for removal or simply limited while factors identified as

lowering estimates should either be considered for introduction or reinforced if already present.

Further outside of making consumers more aware or unaware of the passage of time, situational and environmental factors have also been suggested to influence the mood of consumers during service delays. Mood has been mentioned (Gardner, 1985) as a factor that can effect consumers evaluations of service delays through inducing positive and negative affective reactions. It can be suggested that positive mood inducing factors ,for example, such as background music can be introduced by managers to offset the negative moods typically induced by service delays (Geist, 1984). Identification of these non-temporal factors thus offers managers an important insight into the effective management of service delays.

Factors suggested

Researchers in the past have suggested several non-temporal factors (i.e. situational factors) as being possible influencers of time judgment. Allan (1979) for one, suggested that non-temporal characteristics such as the nature of an activity and the personal enjoyment attained from an activity would influence time estimates. Hornik (1984) hypothesized that perceived waiting time would vary with the physical length of the waiting line respondents were subjected to. Finally, Mascar (1980) hypothesized that delays in a highly segmented service encounter (i.e. a service experience with many differentiable parts) would be perceived to last longer than similar delays in more continuous service encounter. These studies, however, only offered a disjointed look into non-temporal influences of time judgment.

Maister's work

Maister (1985) was one of the first to offer a comprehensive look into the area. His work was based around the belief that in order to properly manage service encounters managers needed to first understand how consumers' perceptions of the length of service delays could be altered. To this end, he offered eight propositions for service managers to consider when dealing with delays inherent to their respective services.

In his first proposition Maister argued that "Unoccupied time "would feel longer than " Occupied time ". The main premise behind this proposition was that consumers, if given nothing to do during waits, would become bored and begin to focus on the passage of time. Maister argued that this situation would tend to lengthen consumers' perceptions of the time actually waited (note this kind of scenario was argued earlier by Zakay to be an upward influence on consumer estimates of delays). Maister thus suggested that by providing some sort of a distraction (i.e. via a task to perform) during a service delay, consumers would become less concerned with the passage of time and thus less likely to think about the possibility of waiting a long time. A distraction was argued here to limit the creation upward of biases during a service delay which could later inflate subsequent estimations of the service delay itself. It was suggested, however, that only relevant distractions (i.e. distractions that could be expected to occur during the course a service experience) would be effective in limiting consumers' attention to the passage of time. For example, many people waiting to check in baggage for international flights are given customs cards to fill out. This could be termed under these circumstances as a relevant service distraction.

Secondly Maister proposed that waits occurring before the start of a service encounter would generally be perceived as lasting longer than waits occurring during the service encounter. Maister reasoned that consumers' had basic concerns about being forgotten at the onset of service encounters which could best be dealt with by quickly admitting them into service encounters. Thus Maister argued that service providers needed to make contact with their clients as soon as they possibly could. For example, handing out customs cards in check-in lines could be argued to help reduce any pre-boarding anxiety passengers might have about getting onto their flights.

The third and fourth propositions offered by Maister specifically dealt with the relationship between consumer anxiety and uncertainty related to service delays. Maister suggested that anxiety created during service delays would in general tend to make delays seem longer. He also suggested that uncertainty associated with waits would also tend to increase consumers' perceptions of delay length. Anxiety, for its part, was argued to be a factor during service delays which was responsible for making consumers' anticipate longer waits. It was said to occur primarily during service delays where consumers were focused and aware of the passage of time. Uncertainty for its part was simply argued to be one of the major sources of anxiety (supported Osuna, 1985). For example, uncertainty over the length of service delays was said to contribute to some of the anxiety felt by consumers during service delays. Thus uncertainty over the length of delays, by increasing levels of anxiety felt, was argued to be responsible for higher duration estimates of service delays.

Maister's fifth proposition argued that unexplained waits would be perceived to last longer than explained waits. Knowing the cause of a delay was thus postulated to cause consumers to feel more at ease, less anxious and thus less likely to focus on the passage of time during delays. This was qualified, however, by the warning that any explanations offered on behalf of the service provider to waiting customers needed to be both justifiable and believable.

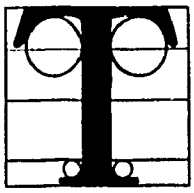
Maister's sixth proposition claimed that service delays perceived by consumers as being unfair would seem longer than those seen to be more equitable in nature. Maister suggested that consumers' sense of equity during service delays needed to be addressed if their estimates were to be controlled. For example, it was argued that delays in which customers were uncertain of being served in what they saw as being the fairest order (i.e. " first in first out " principle) would cause anxiety, uncertainty. This effect was argued to increase the attention consumers were likely to pay to the passage of time and thus to ultimately increase their duration estimates of any delays encountered. Conversely it was proposed that consumers who did perceive a high level of social justice while waiting in line would probably be less pre-occupied with the passage of time and thus less likely to overestimate the delay.

Maister's seventh proposition did not concern consumers' perceptions of waits but rather their willingness to put up with them. It was argued, for example, that as the value of services increased for consumers so too would their willingness to wait through them. Further, it was proposed that as the relevant parts of a service came to an end (i.e. an airplane lands for a business traveler) consumers would become less tolerant of delays after that point (i.e. delays with baggage carrousel). Under such circumstances consumers were once again

seen to be more likely to concentrate on the passage of time and thus to inflate subsequent duration estimates.

The last proposition by Maister dealt with the advantage provided by having customers wait in groups during service delays. In it, Maister basically asserted that consumers in large numbers inherently had more ways to cope with service delays than isolated customers. For example, it was suggested that consumers in groups could console one another, or keep each other occupied by talking to one another. This kind of interaction was argued to effectively limit the amount of attention paid to the passage of time and thus to help to lower consumers' estimates of perceived waiting time.

CHAPTER 3



TIMING OF SERVICE DELAYS

Recently a lot of attention has been devoted to the topic of service delay timing. It was first suggested by Dubé et al. (1989), for example, that consumers' reactions to service delays are significantly influenced by their relative positioning during service encounters. The primary sources cited by Dubé et al. (1989) were Maister (1985) and Kassarjian (1973). This chapter will explore some of the arguments of these two earlier sources and will present a comprehensive discussion of the work done on the part of Dubé et al. (1989,1991a,b) to explore this new area.

Kassarjian's work

Kassarjian (1973, 1976) was one of the last researchers to use principles from Lewin's (1943) field theory in order to explain consumer behavior. Among the more important tenants borrowed from the theory, Kassarjian cited the importance of considering only the factors present at the time of a behavior in trying to explain that behavior. Further, in order to adequately consider all the factors present during a particular point in time Kassarjian borrowed many constructs from Lewin's field theory.

In describing consumer behavior at the exact moment of its occurrence, for example, Kassarjian borrowed the following constructs. First the construct of a consumers' life-space was offered as a way of conceptualizing the total psychological field of a consumer which was described as everything consumers could mentally perceive at a given moment. Within this lifespace two specific sub-components were suggested to exist, the consumer and his/her psychological environment. Anything outside of a consumers' lifespace was identified as the foreign hull, a field to which consumers were said not to be psychologically linked.

The psychological environment of a consumer was argued to be subdivided into regions, the number of which was said to depend on the breadth of a consumers' environment for any given situation. Thus in considering all consumers wanting to buy a radio it was argued that there could exist at least two different classes of consumers. For example, one could suggest the existence of very knowledgeable consumers who would be familiar with many different kinds of radios. Kassarjian would have seen these consumers as having psychological

environments segmented by many regions in concern with the decision to purchase of a radio. Further one might also postulate the existence of less knowledgeable consumers who may only know of a few brands of radios. Their environment in comparison would have been argued to be segmented by only a few regions. Thus, the knowledgeable consumers in this case would have been suggested to have a much more segmented psychological environment in relation to the decision to purchase a radio.

Between regions in a consumers' life-space it was further suggested to be logical to assume the existence of barriers which would effectively limit the free movement from one region to another. For instance, it could have been suggested that though a consumer may know of a particular brand of radio, he might be kept from acquiring this brand if it is only sold in another country. In this case the geographical distance involved in purchasing the radio would have been suggested to act as the barrier between the consumers' current position and the region defined by the purchase of the radio.

The consumer was also argued to constitute a unique construct within a subset of the total life-space. Inside this subset consumers' values and needs were said to drive their specific motives to go from one region of their life-space to another. These motives were argued to primarily emanate from a disequilibrium in consumers' internal need state. This disequilibrium was most often said to create a state of tension for a consumer.

In understanding consumer behavior, Kassarjian argued that first the specific tensions of a consumer at any one time needed to be considered. Thus for a hungry person it was argued that the need for food would probably be a major

tension to consider. The intensity of this tension was then suggested to determine the force behind any actions (i.e. behavior) later taken on the part of consumers. For example, the importance or need for food (i.e. its valence) was argued to determine in the case of the hungry person the effort he/she was likely to put into actions geared to meet his/her need for food. Further Kassarjian argued that the force could also be conceptualized as a vector on a consumers' life-space indicating at any one time the direction and tendency towards certain behaviors (i.e. regions). In the case of the hungry person, for example, it could have been argued that a high level of importance for food would have created a large force vector from the person's present position in his/her life-space (i.e. hunger) to a more desirable location (i.e. a region where this hunger could have been addressed). Thus the size of these vectors was essentially argued to be representative of the intensity of the psychological pressures on a consumer at any given time.

Creation of Psychological force Model

In arguing that consumers' reactions to service delays would be significantly influenced by their relative positioning during service encounters, Dubé, Schmitt and Leclerc (1989) originally cited Maister's second proposition; that waits occurring before the start of a service encounter would be perceived to last longer than waits occurring during the service encounter. In doing so, however, they noted that Maister offered no theoretical framework or empirical studies to back up this proposition. In order to deal with this shortcoming Dubé et al. (1989) decided to use Kassarjian's past work as a theoretical framework to validate this proposition.

Dubé et al. (1989) chose the service context of an individual visiting a restaurant in order to test this proposition in light of Kassarjian's work. It was argued that such a service encounter could be broken down into 3 discrete phases thus allowing for an empirical test of Maister's proposition. The three phases were ultimately labeled as the pre-process, the in-process, and the post-process stages. The in-process stage identified for the restaurant experience was said to represent the time patrons spent inside the restaurant prior to ordering. The in-process stage, for its part, was said to begin after patrons ordered and to last until such time as they had finished their meal and asked for the check. Finally the post-process stage was argued to represent everything patrons needed to do after the in-process stage before leaving the restaurant (i.e. waiting for check, paying bill, getting coat, etc.).

In accordance with the work done by Kassarjian these three phases were seen to analogously represent distinct regions within a consumers' life-space during a restaurant visit. Further the psychological forces acting on a patron at any of these three phases were said to correspond to the psychological forces Kassarjian argued to exist for consumers wanting to go from one region of their life-space to another. Finally the strength of these forces at any point in time was argued as being linked with the particular needs of a patron to progress from his/her current stage in the restaurant visit. Thus patrons with a stronger need for food (more hungry) would have been argued to have stronger psychological forces pushing them to the goal region of a restaurant visit (i.e. interval where they sit down to eat) than less hungry patrons.

Dubé et al. (1989) suggested that consumers during a restaurant visit would naturally have a need to go from the pre-process stage to the in-process stage (i.e. main goal of service) of their encounter as quickly as possible. This was reasoned to be the case primarily because the in-process stage, by definition, was argued to hold the main motivation for a restaurant encounter. Further the total time taken to get to this stage was argued in part to regulate the real cost (in terms of time) of the service experience. Again the strength of the need to go from the pre-process stage to the in-process stage was argued to influence the intensity of psychological forces acting on consumers during the pre-process stage. The psychological forces related to such a need were argued to become satiated only during the in-process stage (i.e. region where goal is met). As for the post-process stage, however, new psychological forces were argued to reappear directing consumers to the goal regions of subsequent services (i.e. getting inside a movie theater after leaving eating at a restaurant).

Since psychological forces pushing consumers through a restaurant visit were argued to be greater during stages where consumers are still striving to get to the main goal of the service, service delays were also argued to be seen as larger barriers during these stages. For example, a patron waiting to be seated would have been argued to probably regard a delay as being a larger barrier to his/her service encounter than one who had already been seated and allowed to order. The stronger psychological forces at the pre-process stage of a restaurant visit were argued to elevate the perceived threat posed by service delays. Likewise the mounting psychological forces which were argued earlier to reappear as consumers waited to terminate their service encounter were also argued to elevate the perceived threat of any delays encountered. Thus the impact of service delays was suggested to be greater during the pre-process and post-process stages of a service encounter.

To test this proposition empirically, Dubé et al. (1989) decided to conduct a study with two separate experiments. In both experiments respondents were given hypothetical scenarios in which delays were said to occur either at the pre-process, in-process or post-process stage of a restaurant visit. Respondents were then asked to hypothetically estimate the evaluations they might give under such circumstances. In the first experiment a 3 X 2 design was employed where all three stages were crossed with two uncertainty levels (high/low). In the second experiment a 2 X 2 design was used where both the pre and in-process stages were crossed with 2 levels of need (i.e. hungry/not hungry).

The results of these experiments basically supported the proposition cited above. In experiment 1, for example, it was found that delays at both the pre and post-process stages seemed to produce more negative evaluations than delays

encountered at the in-process stage. This result was replicated in second experiment where pre-process delays generated lower evaluations than was the case for in-process delays. Extraneous factors such as uncertainty and need failed to effect respondents' evaluations as hypothesized.

To deal with some of the shortcomings of this study and to re-test the results of experiment 1, another study was conducted by Dubé et al. (1991a). Instead of using hypothetical scenarios an actual experiment was conducted within a live environment; a classroom. Delays were triggered within the experiment at specific points by having a teaching assistant leave the class . A confederate was then used to solicit reactions on the part of students. Further the delays incorporated within the experiment were more uniform than in the first study (i.e. consumers waited the same time at different stages for the same thing). Finally this study unlike the first was geared towards soliciting affective reactions rather than simple evaluations.

The results of this experiment replicated the results found in experiment 1. Specifically, consumers encountering delays at either the pre-process or process delays of the service (i.e. the class) reported more negative affective reactions than those encountering delays at the in-process stage. In fact in-process delays actually solicited no worse a reaction than the control group for which no delay occurred.

Creation of Anticipatory model

Next, Dubé et al. tried to determine whether time estimates of service delays would vary depending on when they occurred (1991b). Past studies seemed to indicate a relationship between time estimates and affective reactions to service delays where consumers' most severe overestimation of waiting time tended to occur during stages where they also reacted most negatively to service encounters (Maister, 1985; Katz, Larson, and Larson, 1991). This research seemed to suggest that as consumers' affective reactions to a delay got worse there was a greater tendency for consumers to overestimate the duration of such a delay.

Under the framework of the psychological force model it was argued that consumers would react worse to delays at the pre and post-process stages. Initially Dubé et al. (1991a) argued that this suggested that pre and post-process delays would also produce the most severe overestimation of delay length.

However, in reviewing literature on the influence of anticipatory states an opposing relationship was found. Anticipatory states were said to occur in situations in which an individual's attention was heightened and focused on to specific upcoming events. In looking at the stages they had identified for a restaurant experience Dubé et al. (1991b) concluded that the most severe anticipatory effects would most likely occur during its in-process stage. At this stage it was argued that consumers would, depending on there position in the stage, begin to focus in on specific aspects of the service not yet completed (i.e. being seated at one's table, ordering one's meal or getting one's check). In both the pre and post-process stages, however, it was argued that consumers would

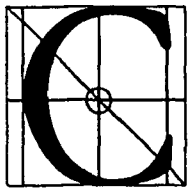
mainly focus in on the goal of starting or terminating a service encounter. Specifically, consumers at these stages were said to be mostly in a preparatory state while consumers in the in-process stage (i.e. within the goal region) were argued to be in an anticipatory state. This preparatory state was described as a service interval where consumers generally did not actively think about the specific service deliverables they have not yet received (i.e. things still yet to come in their service encounter). Referring to past studies on anticipatory states, Dubé et al. (1991b) discovered that consumers in anticipatory states normally were found to overestimate time (i.e. Cahoon, 1980; Quigely et al., 1984) in comparison to consumers in preparatory states. Thus this research stream seemed, contrary to Dubé et al. (1989, 1991a), to indicate that in-process service delays would actually cause longer duration estimates than pre and post-process service delays.

Dubé et al. (1991b) conducted another experiment to test the relationship that was being suggested by this research stream. Respondents were asked to perform two separate tasks during this experiment. Delays were scheduled either after respondents had been first been greeted, after the completion of the first task or right after the completion of the second task. Respondents after the completion of the first task were conceptualized as being in the in-process stage of the experiment. Delays occurring before and after this point were operationalized respectively as pre-process and in-process delays. To induce a delay, the experimenter told subjects in all three experimental conditions that he had forgotten some of the material required for the next part of the study. Ten minutes after the start of the delay a confederate came in and asked how long the experimenter had been away. Remote estimates were also taken with a questionnaire which was administered after the experimenter got back.

The results of this experiment supported the relationship suggested by the literature on anticipatory states. Individuals who encountered delays during the stage conceptualized as the in-process phase of the experiment tended to give longer duration estimates individuals who encountered delays at either the pre or post-process stage. This result seemed to suggest the requirement of two separate models for predicting both consumers' affective reactions and duration estimates of service delays.

Thus Dubé et al. (1989, 1991a, 1991b) to date conceptually offer us two distinct models for predicting consumers' reactions to service delays at different stages of service encounters. First a model, largely based on Kassarjian's work, seems to suggest that consumers' worst affective reactions to service delays would generally tend to be linked to delays occurring during service stages in which they are under a lot of psychological pressure (i.e. they have a strong need to move forward). Dubé et al. (1989,1991a) work isolated the pre and post-process stages of their restaurant encounter as being two such service intervals. Dubé et al. (1991b) also offered us a second model which argued that consumers' most severe overestimation of service delays would occur during intervals where they were likely to actively anticipate upcoming service deliverables. The in-process stage of their laboratory experiment was conceptualized and empirically supported as being such an interval. In suggesting these two models Dubé et al. (1989, 1991a, 1991b) failed, however, to support earlier service research which had seemed to indicate that service stages causing the worst affective reactions to service delays would also cause the most severe overestimation of their length.

CHAPTER 4



CONCEPTUAL DEVELOPMENT OF OF A NEW MODEL

Intuitively Dubé et al. (1989 ,1991a, 1991b) presented a less appealing argument than what had been implied in the literature predating their work. For example, prior to their work we would have expected the severity of consumers' affective reactions to delays to directly correspond to their duration estimates; the worse the reaction the longer the estimate and vise versa. Joint consideration of the two models implied by their work, however, failed to support the existence of such a relationship. This chapter will try to resolve the discrepancy between Dubé et al. (1989, 1991a, 1991b) and the services literature predating their work.

In looking at Dubé et al. (1989, 1991a) a similar model (referred to as the Psychological Force Model from now on) was suggested for both. For example, consumers were seen at the beginning of service encounters to be under psychological forces pushing them to the goal region of the service. The goal region (or as they called it; the in-process stage) in both of these studies was argued to contain the primary goal of the service (the reason consumers were there). In the first study, hypothetical scenarios would have located such a goal at the stage after patrons sat down to order and till they finished eating their meals. In the second study this phase was designed to occur while a class was actually being taught. Once within this goal region the psychological forces which had built up during the pre-process stage were argued to be relieved. Once out of this goal region, however, consumers were argued come under new psychological forces directing them out of the service encounter.

Delays experienced by consumers were argued to be barriers which would cause the most unpleasant reactions at the stages immediately before and after the goal region of a service. This would have been supported by Kassarjian (1973) because delays immediately before or after the goal region keep consumers from getting to desired regions of their psychological life space (i.e. either the goal associated with the current service or a goal associated with a subsequent service experience). On the other hand, within the goal region where psychological forces were argued to be relieved, delays were seen as less significant barriers (See figure 2). For instance, a consumer waiting in a restaurant for the second course of his meal would have been argued to be under less psychological pressure to move on than a consumer who was either waiting in a line outside the restaurant to get in or a consumer simply waiting for his check before leaving. Thus under this model the perceived magnitude of a barrier (i.e. a delay) was argued to be dependent on the psychological pressures at the time of the delay. The intensity of negative reactions were argued to be dependent on the magnitude of the barrier perceived.

The early literature on time estimation had clearly indicated that consumers' duration estimates of service delays would tend to be greater in stages where they were under the greatest pressure to move on. Recall, Zakay (1991) suggested the attentional model was the most relevant model for assessing consumers' duration estimates during services. According to this model, consumers' duration estimates of intervals were argued to be the longest for intervals where consumers were actively thinking about the passage of time. It is suggested here that in stages where consumers are under intense pressure to move on, delays should create intervals where consumers are actively thinking about the passage of time. Thus the service delays in the pre and post-process

stages described by Dubé et al. (1989, 1991a) should have tended to produce the longest duration estimates.

This argument intuitively supports the relationship consistently suggested in the literature predating Dubé et al. (1989, 1991a, 1991b). Recall this relationship had indicated that as consumers reactions to a delay worsened, estimates of its duration would also rise. Since delays at the pre and post-process stages of service encounters had already been argued by Dubé et al. to create the worst affective reactions, we should thus have expected delays at these stages to also produce the highest duration estimates.

In looking at Dubé et al. (1991b), however, a somewhat different model was suggested. Psychological forces at the time of delays were no longer argued to determine the intensity of negative reactions. Under this model, consumer anticipation was seen instead as the critical factor in determining consumers' estimates of delay length. The argument was made that once in the goal region of a service, individuals would generally be under the influence of specific anticipatory states that would make them focus on the upcoming service deliverables (i.e. sub-goals) of that region. For example, in a restaurant setting it was argued that, consumers once seated would begin to focus on what to order and that consumers who had once ordered would focus on the meal itself. In short, consumers once satiated by one deliverable of the goal region were argued to then begin to focus in on the next. Dubé et al. argued that this heightened sense of attention would tend to occur most during the goal region of a service because consumers would perceive the most important part of service delivery as residing in this phase. Individuals immediately before and after the goal region, however, were seen to be in more of a general preparatory state.

Under such a state, consumers were argued to be less concerned with the specific deliverables of the interval they were in and thus less likely to enter anticipatory states.

In this model (Referred to as the Anticipatory Model from now on), delays encountered at the goal region of a service were suggested to result in longer duration estimates. This was argued to be the case because delays during the goal region were seen to interfere with the strongest anticipatory forces (See figure 3). Under such a stage, the attention model, would have suggested the tendency for consumers to actively think about the passage of time and thus the strong likelihood for overestimation. Outside this region, however, delays were seen to interfere with only marginal anticipatory forces and thus to cause only minor overestimation in consumers' duration estimates of delays encountered.

Dubé et al. (1989, 1991a, 1991b) seemed to suggest that the salience of each of these two models depended in part on the measure being looked at. In predicting consumers' affective reactions to service delays, for example, their work supported the use of the psychological force model. This model predicted consumers to have the most negative reactions to delays during the pre and post-stages of a service. In predicting consumers' duration estimates on the other hand, their work seemed to support the anticipatory model. Under this model duration estimates of delays were argued to be longer during the in-process stage of a service. Literature prior to their work had suggested that consumers' affective reactions to delays would be more negative during service intervals where consumers tended to give the longest duration estimates of service delays (Hornik, 1984; Zakay, 1991; Chébat, 1991). Simultaneous

consideration of the predictions of both models, however, did not support such an argument.

In looking for an explanation we must note that Dubé et al. (1989, 1991a, 1991b) did not jointly consider consumers' affective reactions and duration estimates in any of their three experiments. For example, consumers' affective reactions to service delays were the only measure tested in their first two experiments. Likewise affective reactions were simply ignored in the last experiment in favor of consumers' duration estimates. As a result they could not confirm either that the anticipatory model was only salient for predicting consumers' estimates of service delays or that the psychological force model salient for predicting consumers affective reactions to delays.

Though both models suggested by Dubé et al. (1989, 1991a, 1991b) were empirically supported through their own studies, employment of either model to predict consumers' reactions to service delays would be difficult. For example, while the psychological model suggests that pre and post-process stages represent the worst service intervals for service delays, the anticipatory model instead isolates the in-process stage as the worst service interval for delays. Outside of the salience suggested by their work (i.e. dependent measures) existing research has provided few clear guidelines as to when and under what circumstances each of these two models would be likely to apply. Service managers forced to refer to either of these two models would basically be making a blind guess in determining the model most relevant to their own circumstances. In order to make proper use of Dubé et al.'s work we thus need to establish guidelines for determining the exact situational prerequisites for both the psychological force and anticipatory models.

It is suggested here instead, that the salience of each model did not depend on the dependent measure that was being considered but instead on the experimental conditions in which each model was tested and later confirmed. For example, the salience of the psychological force model is argued here not to depend on whether consumers' affective reactions are being judged but instead on whether service conditions resemble those Dubé et al. (1991a) created in their first two studies. The salience of the anticipatory model is likewise argued to depend on whether service conditions resemble those Dubé et al. (1991b) created in their classroom experiment.

This presumption would allow the relationship indicated in the past between consumers' affective reactions and duration estimates to continue to operate within the confines of each of the models proposed. For example, under the psychological force model where consumers' affective reactions to delays were found to be worse during the pre-process stage we could still argue that consumers' duration estimates of delays would also be longer during this stage. Likewise under the anticipatory model where consumers' duration estimates of service delays were found to be longer during the in-process stage one could argue that consumers' affective reactions would also be more negative during this stage. The factor determining the salience of these two models for a particular service encounter would be the conditions under which the service is being offered. If true, this presumption would rectify the discrepancies noted between Dubé et al. (1989, 1991a, 1991b) and the literature preceding their work.

Defining single paradigm

In order to isolate the particular experimental conditions salient to each model we first need to isolate and contrast the contradicting elements of both models. For example, under the psychological model consumers within the in-process stage of a service were argued to be relaxed (i.e. psychological forces said to be relieved) while under the anticipatory model they were suggested to be under intense anticipatory pressure. Further under the psychological force model consumers in the pre and post-process stages were argued to be under intense pressure to get to a goal region while under the anticipatory model they were argued to be in a more relaxed state (i.e. a general preparatory state). Thus under the psychological model delays were argued to be worse during the pre and post-process stages while under the anticipatory model delays were argued to be worse during in-process stage (i.e. goal region). In each case delays were argued to be worse under situations where consumers were actively thinking about the passage of time.

First in comparing both models it is suggested here that the post-process stage proposed by Dubé et al. (1989) probably does not need to be considered. First the post-process stages in both models seemed only to mimic the results expected in the pre-process stages. In both the psychological and anticipatory models proposed, for example, consumers' reactions to delays at the pre and post-process stages were expected to be the same. Further it could also be argued that consumers feelings in the post-process stage of service encounters should conceptually be identical to those at the pre-process stage of service encounters For example, for a consumer wanting to watch a movie after eating at a restaurant, it could be argued that delays in the post-process stage of the

restaurant encounter would effect consumers reactions in much the same way as delays at the pre-process stage of the movie theater encounter. In fact, under such a scenario one could argue that the post-process stage of the restaurant experience could simply be seen as being an earlier part of the pre-process stage of the movie theater encounter. Lastly, for most services encounters it would probably not be as easy to operationalize three separate service stages as was done for the restaurant experience conceptualized by Dubé et al. (1989).

In both the classroom experiment used to test the psychological model and laboratory experiment used to test the anticipatory model, similar experimental designs and procedures were cited. For instance pre and in-process stages were operationalized for both experiments at comparable junctions. In the classroom experiment, for example, the pre-process stage was argued to occur after students had sat down and before the lesson was started whereas in the laboratory experiment it was argued to occur after subjects had been greeted and seated by the experimenter. The in-process stage was argued to occur either when students in the classroom experiment had listened to part of their lecture of when respondents in the laboratory experiment had completed one of their assigned tasks. Further delays in both experiments were induced through a similar experimental procedure. In the classroom experiment, for example, delays at the pre and in-process stages were induced by the teaching assistant leaving the classroom to get something for his students while in the laboratory experiment it was the experimenter who left to get something necessary for the experiment. Finally, the delays used in both experiments lasted the same length of time (i.e. 10 minutes).

If we are to accept, however, that both models presented were valid something within the experiments themselves must have been responsible for the divergent results (i.e. support for two different and contradictory models). It is argued here that one factor may have been the way in which the delays in each experiment were perceived by the participants. For example, though delays in both experiments were operationalized in a similar manner, participants in each experiment were subjected to these delays under different circumstances. Under these varying circumstances, participants across experiments might have tended to view the delays differently. Quigely et al. (1984) for their part argued that delays perceived differently by consumers would tend to result in varying responses from consumers. In an experiment, for example, they found that delays perceived by consumers as representing large (i.e. more severe) barriers to an encounter tended to create worse reactions than delays which were seen as representing relatively small barriers. In operationalizing their delays Quigley et al. (1984) tended to create conditions which made respondents either more or less certain about both the impact of a delay on the length of their experiment.

In looking at classroom experiment (Dubé et al., 1991a), which we argued earlier to support the psychological force model, delays occurred under circumstances where students were unlikely to be overly concerned. The delays imposed, for example, were probably not been perceived much different from class delays encountered previously by the students and thus should not have caused much concern on their part. Additionally being in a controlled and familiar setting like a classroom may have further reassured students as to the possible consequences of these delays. For example, students could not have expected the delay to last much longer than the remainder of the class. Even in such an unlikely scenario, students would still have had subsequent classes in which to

make up any lost time. Thus students in the classroom experiment were probably unlikely to perceive the delays as overly threatening to their classroom experience.

The delays imposed in the laboratory experiment (Dubé et al., 1991b), however, occurred under very different circumstances. In the laboratory experiment respondents were introduced into an environment with which they were extremely unfamiliar. In such a setting respondents would have been unable to determine if the delays encountered were a normal part of the experience. This would have undoubtedly caused respondents to become unsure about the delays and to regard them as far more threatening than the students regarded the delays in the classroom experiment. After all, respondents might have been concerned that if the delays encountered were not a regular part of the laboratory experience that the experiment would end up taking much more time than should normally have been the case.

In cases like the classroom experiment where delays are seen as a typical part of the experience, we suggest that there would normally be a tendency for individuals only to be concerned with getting to main goal of the event (i.e. actually being taught the lesson). Under such circumstances we would normally expect the psychological force model be the more salient model. In cases like the laboratory experiment where delays are perceived as being more atypical, we suggest that individuals would also tend to be concerned with the possible consequences of delays. Under such situations we would expect consumers to actively anticipate upcoming events in the encounter and thus for the anticipatory model to be more salient. Recall, respondents in the laboratory experiment lacked any references to determine the possible consequences of

the delays they encountered. In the classroom experiment, however, students were argued to have past experiences to draw upon in order to predict the consequences of the delays encountered.

The perceived severity of a delay will be argued here to hinge on whether it is perceived to be normal part of a service encounter. In cases in which it is, individuals were argued earlier to be more confident (i.e. sure) about its impact on the delivery of a service. Under such circumstances we would normally not expect consumers to perceive service delays as severe threats to service delivery (i.e. such delays would probably have been weaned out of the normal operations of most services). However, in cases where delays are more atypical consumers would probably tend to be less sure of their consequences and thus perceive them as representing a more severe threat to service delivery.

Operationalizing " delay severity " in order to explain the discrepancy found between Dubé et al.'s work and the service research which predated it, required a situational context within service encounters to first be identified. Implicitly this situational context needed to directly impact upon consumers' perceptions of "delay severity ". One such situational context which had been implied in recent work was that of **delay type**. Hui et al. (1993) had argued that information supplied during waiting would actually help to distract consumers and thus reduce their duration estimates of delays encountered (opposite was in fact found). However, by supplying information Hui et al. could have been actually changing the very nature of the delays their respondent's were facing. Thus rather than simply distracting their respondents' attention away from the delays they faced, it is argued here that Hui et al. changed the very nature of the waiting conditions that their respondents' perceived to exist.

Hypothesis Formulation

In considering the variety of service conditions under which delays can occur it becomes apparent that consumers can potentially run into many different types of delays. For instance there are delays during service encounters whose length is a simple function of the level of efficiency with which a service is delivered. These waits are perceived by consumers whenever they are told or are made to feel that waiting is related to the normal delivery of a service. For example, consumers ordering something from a phone service may reach a message where they are told to wait because other people have called in ahead of them. In this case we would expect consumers to perceive such a delay as a normal part of the delivery of the phone service. The types of waits will be referred to from now on as **procedural delays**. Consumers also might face delays which result from unique problems with the delivery of a service. These waits should be perceived by consumers whenever they feel that a delay is being caused by a problems which do not normally arise during the delivery of a service. For example, a person at an airport can be told that a flight delay is going to be imposed to fix a mechanical problem with his/her plane. Such delays should normally be seen to arise from circumstances which normally do not occur during the delivery of this service. Consumers should also implicitly have more difficulty trying to predict the possible length of these types delay. These delays will be referred to from now on as **correctional delays**. Finally, consumers often face delays during service encounters for which no explanations are either readily apparent or offered by the service provider. In our opinion, this category of delays should represent a large proportion of the service delays consumers normally face in their day to day interfaces with service organizations. These types of delays will be referred to from now on as **unknown delays**.

By these definitions it should be obvious that procedural waits should be perceived most often as being the least severe threat to the delivery of a service. This can be argued to be the case because consumers should most readily become accustomed to these kinds waits and because these types of waits rarely should be seen to put the delivery of a service into jeopardy. Correctional waits, because of their tendency to create concern over the delivery of a service should, however, be perceived as the most severe form of delay. For example, delays brought on by mechanical problems with airplanes, obviously should create situations where consumers become unsure as to the full delivery of the service. Lastly unknown delays, depending on the situations in which they occur, may or may not be perceived as being severe. For example, in situations where these delays are assumed to a typical occurrence during the delivery of a service, consumers should not perceive them as severe threats to service delivery. However, in situations where these delays are thought to be atypical of a service encounter consumers should, according to the arguments presented above, perceive them as being more severe.

Taking this to be the true each of these three delays could be argued to create conditions where predicting consumers' reactions might best be handled either through the psychological force or anticipatory model. Recall, it was argued earlier that students exposed to Dubé et al.'s classroom experiment did not perceive their experimental delays the same as respondents' in their laboratory experiment. Students in the classroom experiment were argued to perceive delays as representing a less severe barrier to the completion of their experience than respondents in the laboratory experiment. This difference in perception was argued to make the psychological force model more salient for predicting reactions to delays in conditions resembling those in their classroom

experiment and the anticipatory model more salient for conditions resembling those in their laboratory experiment. Seeing as the delays operationalized in this paper have been argued to differ with respect to their perceived threat to service delivery, it is suggested here that we should also be able to discern the salience of both models for each of our three delay types.

For example, we would probably expect the predictions of the psychological force model to be the most appropriate for predicting consumers' reactions to procedural service delays. In other terms procedural delays would be argued create conditions under which consumers would be likely to react as they did in Dubé et al.'s classroom experiment. On the other hand, with the perceived level of severity being associated with correctional delays we would expect the anticipatory model to best predict consumers' reactions to these types of delays. Recall the Dubé et al.'s laboratory experiment was argued earlier to have created conditions in which respondents were not as sure about the consequences of delays encountered. Thus these delays would have been argued to have been more severe in nature than the delays encountered in Dubé et al.'s classroom experiment. The anticipatory model was found in this situation to be a good predictor of respondents' reactions (i.e. duration estimates) to delays encountered. As for unknown delays the salience of each model would again have to depend on the severity of threat perceived to service delivery.

Predictions

The most recent literature on service delays focused on predicting consumers' reactions to service delays across different service stages. In extending this focus by trying to predict consumers' reactions to different types of delays across different stages of a service encounter we would need to refer to either the psychological force or anticipatory models. Each of the three delays types presented above were argued to create conditions where consumers' reactions could best be predicted by one of these two models. For example, procedural delays were argued not to overly concern consumers and thus to create conditions that could be better explained by the psychological force model. Correctional delay on the other hand were argued to be perceived more severely and thus to create conditions that could be best explained by the anticipatory model. Unknown delays, however, were simply argued depending on the situation at hand to create conditions salient to one of these two models. If these arguments are valid we would expect each of these delays to effect consumers in a manner consistent with the predictions of either the psychological force or anticipatory models. In looking back at the predictions of each of these models we would thus expect:

H1(a): Procedural delays occurring during the in-process stage of a service to elicit less extreme negative affective reactions than similar delays during the pre-process stage.

H1(b): **Procedural delays occurring during the in-process stage of a service to elicit lower duration estimates than similar delays during the pre-process stage.**

H1(c): **Correctional delays occurring during the in-process stage of a service to elicit more extreme negative affective reactions than similar delays during the pre-process stage.**

H1(d): **Correctional delays occurring during the in-process stage of a service to elicit higher duration estimates than similar delays during the pre-process stage.**

Consumers are normally not given a lot of information during service delays. It is our contention that there should thus be a tendency for consumers to interpret most unknown delays as procedural delays that are simply left unexplained by the service provider. If true this would seem to indicate that.

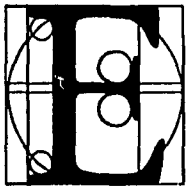
H1(e): **Unknown delays occurring during the in-process stage of a service should also elicit less extreme negative affective reactions than similar delays during the pre-process stage.**

H1(f): **Unknown delays occurring during the in-process stage of a service should also elicit lower duration estimates than similar delays during the pre-process stage.**

Chébat et al. (1991) suggested a link between a consumers' moods during service encounters and their evaluations of service encounters. For instance, positive moods during service encounters were seen to contribute to better overall evaluations of service. It is suggested here that both consumers' affective reactions to service delays and their duration estimates of service delays would naturally tend to influence their general mood during a service encounter. By extension, consumers' overall reactions to service delays, according to Chébat (1991), would also tend to be reflected in consumers' final evaluations of a service. For example, delays causing the worst affective reactions and longest duration estimates should also normally be expected to bring about the lowest service evaluations. This arguments should lead us to expect:

H1(g): Respondents' overall reactions to a service delay (i.e. their affective reactions and duration estimates) to directly influence their final evaluations of the service encounter in which the delays occurs.

CHAPTER 5



EXPERIMENTAL TESTING OF MODEL

In order to test the hypotheses of the last chapter it was decided that an experiment placing respondents in a simulation of an actual service encounter was needed. The simulation itself was created through a computerized student registration package which was specifically designed to meet the needs of the experiment. A questionnaire used at the end of each simulation was carefully engineered to measure the factors needed to test the hypotheses under consideration. Finally, the procedures adopted and employed throughout the experiment were carefully designed to reflect the design parameters that were needed to test the hypotheses and to minimize the biases of any extraneous variables.

This chapter will take a detailed look at the issues which had to be considered in the creation of the simulation, the development of the questionnaire and in the development of the procedures ultimately adopted for the experiment.

Experimental requirements

A realistic environment was deemed necessary for judging the validity of the hypotheses in question. In order to create this environment it was decided that a simulation mimicking an actual service experience would be required. After pondering the various types of simulations appropriate for the task, a computerized student registration package was chosen. The package was designed in such a way as to mimic typical registration processes that students normally expect to go through when choosing their courses. In creating this package, for example, students were asked to discuss the procedures normally required of them in past registrations. The results of this investigation were used to create the package in question.

The main purpose of the experiment was to gauge respondents' reactions to different service experiences presented by the package. In all there were six different kinds of experiences under consideration. In each of these six experiences respondents were subjected to service delays. Each treatment, however, was differentiated from the others both by the type of delay introduced and by the specific timing of the delay itself.

In all there were three different kinds of delays; procedural delays, correctional delays and unknown delays. Procedural delays were generally presented to respondents as delays which were brought about by the normal delivery of the service. Correctional delays, however, were generally presented to respondents as delays which were caused when the normal delivery of a service was interrupted by some unexpected event. Finally unknown delays were generally introduced to respondents with very little explanation as to their cause.

Further there were two main stages of the simulated service experiences at which these delays were encountered by the respondents. First there was the pre-process stage of these experiences which was defined as the interval preceding the main goal of the encounter. The goal region of the student registration package was isolated as being the part of the package where respondents would actually be allowed to choose courses. The second stage of these experiences, the in-process stage, was thus defined to occur during the stage in the simulation where respondents were allowed to choose their courses.

In all six treatment groups each representing a unique simulated service scenario in which respondents faced one of three different types of delays at one of two intervals during the student registration package. The first treatment, for example, was designated to represent a scenario where respondents faced a procedural type delay at the pre-process stage of the package. The second and third treatment groups for their part were respectively defined for correctional and unknown delays at the same stage. The fourth, fifth and sixth treatment groups, however, were exclusively defined for delays at the in-process stage of this package. For example, the fourth treatment group represented a scenario where respondents faced a procedural type delay at the in-process stage of the package. Meanwhile the fifth and sixth treatment groups were defined respectively for correctional and unknown delays at the same stage
(See Table 1).

Computer program

The computer program designed to mimic an actual student registration package was set up in the following way. There was an initial screen with a message thanking respondents for their participation. Respondents were also asked on this screen to input a respondent number and to "press enter" when they were ready to go on. After pressing "enter" the program was designed to take respondents to a following screen where personal information was asked for. For example, information such as the name of the respondents, their program of interest and their student numbers was asked. Again respondents were told to "press enter" when they felt ready to go on. After doing so the program was designed to take respondents to a course selection screen where they were asked to input the courses they desired for the next two semesters. When respondents had finished entering the courses they wished to take, the program again asked respondents to "press enter" to go on. The program then gave respondents the chance to view two screens which in tabular form displayed their upcoming schedules for next two semesters. After these screens had been viewed respondents where then thanked on a following screen for their participation and told to advise the experimenter that they had finished.

The respondent number entered on the initial screen of this program controlled the simulation each respondent was subjected to. Depending on the number itself respondents were put into one of the six treatment groups defined earlier. The program itself was designed to recalculate respondent numbers in such a way as to insure an even distribution of the subjects among the six treatment groups. A respondent number of 7, for example, would have put a subject in the second treatment simulation where correctional delays were encountered at the

pre-process stage of the encounter. The program performed this process by dividing each respondent number by the number of treatments and by adding 1 to the remainder. By definition this process was only able to generate numbers between one to six.

To create the delays at both the pre-process and in-process stages of the package two delay screens were inserted in between the first three screens of the program. The first delay screen was placed in between the opening screen of the program and the screen requiring personal information from the subjects. This screen was operationalized as the belonging to the pre-process stage of the package (i.e. the service really had not yet begun). Thus any respondents who were placed in a treatment calling for a delay at the pre-process stage of the package encountered a delay when the program reached this screen. The second delay screen was placed between the course selection screen and the two schedule screens. This point was posed to represent an interval within our simulated service encounter where respondents would have perceived themselves as being within the goal region (i.e. in-process stage) of the service. Thus any respondents belonging to a treatment calling for a delay at the in-process stage of the encounter experienced a delay when the program reached this point in the package.

Both delay screens were never simultaneously activated during any one service scenario since no treatment called for delays at both the pre and in-process stages of the package. Thus respondents facing a procedural delay during the pre-process stage of their encounter (i.e. treatment 1) would only have been exposed to the first delay screen. The second delay screen, by definition of the treatment being employed, would not have been needed.

To invoke the delay called for by the specific treatment a respondent was in, the program generated one of five messages on to the relevant delay screen. Thus a respondent in a treatment calling for a delay at the in-process stage was given a specific message during the second delay screen. In all there were five different kinds of messages depending on the type of delay that was to be created. Procedural delays at the pre-process stage, for example, were operationalized by the message, " The computer is busy processing others requests... Your registration will start shortly.". Procedural delays at the in-process stage were operationalized by the message, " The computer is busy checking your prerequisites and for any course conflicts... Your registration will resume shortly.". Correctional delays at the pre-process stage were operationalized by the message, " We are experiencing problems with this terminal... As a result your registration has not yet begun... We will try to put this terminal back on line and start your registration.". Correctional delays at the in-process stage, however, were operationalized by the message, " We are experiencing problems with this terminal... As a result your registration has been halted .. We will try to put this terminal back on line to restart your registration.". Unknown delays at both the pre and in-process stages of the package were operationalized by the simple message " Sorry for the delay.". In all cases messages appeared in the middle of the relevant delay screen.

Since the experiment was designed to look at consumers' reactions to service experiences differing in only the type and timing of service delays involved, all delays were operationalized for the same length of time. In referring back to recent work on service delays there seemed to be a general consensus that in testing such delays they needed to be at least eight minutes long (Jones, 1991).

For the purposes of this experiment it was decided that all simulated delays encountered would be exactly ten minutes in length.

Sampling Frame

The package itself was introduced to students at Champlain College. Specifically, 150 students from the college were asked to participate in an experiment trying to assess the future viability of a computerized student registration package. The first thirty of these subjects were used in order to pre-test the questionnaire, the computer program and the experimental procedures used in the final experiment. The remaining 120 subjects were used to generate 20 cases for each of the six treatment groups outlined earlier.

Experimental procedures

Each respondent recruited for the experiment was taken through the same set of experimental procedures as any other respondent in the experiment. Respondents, for example, were first recited to participate in the experiment by being stopped in the hallways of the college. Consenting respondents were then introduced to the computer simulation. Finally, all respondents were asked to fill out a questionnaire on their experiences during the simulation. The exact procedures used during these key phases will now be discussed.

In order to effectively run the experiment at the college a room located in a busy area of college had to procured. To this end the main conference room of the college was obtained for the purposes of running the experiment. The room itself was divided into two main areas. First a corner of the room was set aside in order to hold the simulation. Respondents going into this area discovered a computer terminal and keyboard on top of a desk and a chair. The area was buffered from the rest of the room by dividers which were used to block respondents' view of the rest of the room. The rest of room was kept clear except for some desks at the far end of the room. These desks were used primarily to give respondents a place to fill out questionnaires and as a place to debrief respondents at the end of the experiment (See fig 4).

Respondents were recruited for the most part in the corridor directly outside this room (i.e. the main corridor of the college). Students were stopped as they went by the room and told of an experiment that was being conducted on the viability of a future registration package. Students were generally told about the requirement of going through a simulation of an actual package and of filling out

a questionnaire. As an incentive they were also promised $5 for participating in the experiment. This incentive, however, was made contingent on their full and complete participation in the experiment. Those agreeing to participate were handed a consent form to sign (See Fig. 5).

Consenting respondents were then led into the conference room to take part in the simulation. Initially respondents were led to the far side of the room near the tables to drop of any personal effects such as coats, books or bags. This was done primarily to ensure that they were both convertible and attentive during the course of the simulations. Each respondent was then given a few moments to read over an instruction sheet. This sheet asked each subject to image they were in a situation whereas a part-time student they needed to register for two courses for each of the next two semesters. The sheet also contained a list of twelve courses and instructions for using the simulation (See Fig. 6). After reading the sheet each respondent was then given his/her respondent number and instructed to go behind the dividers at the other end of the room to begin the simulation.

After completing the simulation each respondent was directed back to the opposite side of the room to complete the experiment. While questionnaires were being filled out, the recruiting process was restarted to minimize the time the computer was idle. Respondents on the completion of their questionnaires were also given a debriefing form to read and sign. This form let subjects know that the original purpose disclosed for the experiment (i.e. test a computerized student registration package for its possible introduction in the future) was not in fact the actual purpose of the study (See Fig 7). After signing this form each

participant was given $5 and told not to reveal to friends who had not already participated in the study the true nature of the study.

Questionnaire design

To test the hypotheses of the last chapter certain variables needed to be measured in the questionnaire. In as far as the dependent variables there were three in particular which were required to confirm or disprove the hypotheses under consideration. First there was the need for measures which could accurately represent respondents' duration estimates. Secondly there was also the need for measures of consumers' affective reactions. All of the hypotheses made reference to respondent's duration estimates of and affective reactions within a service experience. Finally, in order to test the last two hypotheses there was also the need for measures of consumers' evaluations of our simulated service experience.

The questionnaire used for this experiment was actually a modified version of another used a year earlier by Hui et al. (1991) in a study on consumers' perceptions of control during service encounters (See Appendix 1). This was done primarily because their questionnaire covered all of the areas necessary for testing our hypotheses and their study was also based around a computer simulation similar to the one used in our experiment. Further the questionnaire used by Hui et al. (1991) seemed from all reports to work well in measuring the dependent measures we needed.

The layout of the questionnaires given to respondents from each treatments was kept constant. For example, in the first section of the questionnaires all respondents were given a manipulation check. This manipulation check was designed to determine if respondents had correctly interpreted the type of delay their simulation had taken them through. Recall all subjects were faced with a

simulation where one of three different types of delays were encountered at one of two stages of the package. The program itself made sure that respondents were given the right delay screens. However, this manipulation check was needed in order to ensure that respondents' correctly perceived the type of delays they were given. In short it asked subjects to indicate one of three causes for delays encountered. "The computer being busy", for example, was operationalized as the reason most appropriate for procedural type delays. "The computer not functioning properly", on the other hand, was operationalized for correctional type delays while "unspecified reasons (i.e. no information given)" was used to operationalize unknown delays (See question 1, of Appendix 1).

The first section of each questionnaire also contained questions on respondent's feelings while waiting during their delays, their estimates delay length and finally on their assessments of the package itself. For example, in order to judge respondents' feelings while waiting respondents were asked on an 8-pt scale to indicate their level of acceptance for the length of their delay. Respondents were first asked to indicate an overall feeling towards the package through three seven-point Likert scales. On either end of these scales adjectives such as unfavorable/favorable, good/bad, and negative/positive were used. Respondents were further asked through three separate questions to indicate their overall level of annoyance, irritation and anxiousness while waiting during their simulations. Three eight-point Likert scales were used to capture responses for these questions. Two different measures were employed to capture respondents' duration estimates First an open-ended question was used to ask subjects to indicate in minutes and seconds the perceived length of time taken to complete the simulation. This was followed by a seven-point Likert scale which asked respondents to describe the actual length of the package. For this purpose the

adjectives "long" and "short" were indicated at either end of the scale. Finally in order to gauge respondents' assessments of the package, two different measures were employed. Respondents were first asked to indicate an overall feeling towards the package through three seven-point Likert scales. On either end of these scales adjectives such as unfavorable/favorable, good/bad, and negative/positive were used. Respondents were then asked to indicate on an eight-point Likert scale the intensity of their "like" for the package.

The second section of the questionnaire basically presented a series of statements. These statements were geared to measure respondents' perceived level of control, their assessments of time efficiency and their future intentions towards the package while they waited through the course of their registration. In order to test these factors subjects were asked to indicate their level of agreement or disagreement with these statements. For example, in order to gauge respondents' perceived level of control, statements like "Every thing is under my control" were used. Respondents' assessments of the package's time efficiency, on the other hand, were gauged through their level of agreement or disagreement with statements like "The whole process lasts too long". Finally, future intentions towards the package were measured through respondents' agreement/disagreement with statements like "I do not intend to use this service".

The third section of the questionnaires presented respondents with a scale that was developed by Mehrabian and Russel (1974) and was last used by Hui in his last study (1991). This scale was designed around three measures. First there was a five-item measure to gauge respondents' feelings during their delays. These five items were each represented by a seven point-semantic differential

scale with adjectives such as " happy " and " unhappy " at either end. Respondents were asked to indicate through a check somewhere along these scales their feelings while they waited during their simulations. In addition to this, there was also a nine-item measure to gauge respondents' perceived domination over the delay and a four-item measure to assess their level of arousal.

The fourth section of the questionnaire was designed to explore respondents' attributions (i.e. perceived causes) for the delays they encountered. The section contained questions about the very nature of the causes perceived. For example, questions on such things as the perceived stability of these causes, the perceived degree of control service providers were seen to possess over these causes and the perceived sources of these causes were posed. Questions were generally asked through interval scales with statements such as "permanent" and "stable" on either end. Though the section was not in itself necessary to confirm or reject the hypotheses under question, past research had suggested the importance of considering consumer attributions. Thus the section was maintained strictly for the possibility of aiding future extensions of our study.

Finally the last section of the questionnaire was designed to collect some rudimentary demographics on the respondents recruited. Specifically, respondents were asked to indicate their age, sex and their major at the college through three open ended questions.

CHAPTER 6

EXPERIMENTAL RESULTS

This chapter will thoroughly explore the results of the experiment conducted. To begin, a quick review of the manipulation checks employed in each questionnaire will be done to determine the extent that respondents correctly identified the treatment they were in. This will be followed by a look at the procedures used to verify the face validity and statistical soundness of each of our experimental measures. This will include, for example, the results of multiple reliability tests done to check the internal consistency of all multi-item measures used. The results of multiple statistical tests that were conducted in order to provide evidence either in favor or against our hypotheses will also be examined. Finally, a discussion will be presented on both the marketing and consumer behavior implications of these results and on the limitations and future extensions of our study.

Manipulation check

The results of the manipulation check employed in each of the questionnaires seemed to suggest that most respondents correctly perceived the type of delay they were given during their simulation. For example, of the 120 subjects recruited for the experiment only nine wrongly classified the delay encountered by them during their simulation. Further of these nine, six confused procedural and unknown delays with one another. This was not entirely unanticipated considering the fact that consumers had been argued earlier to regard most unknown delays during service encounters as simply unexplained procedural delays. In looking at the six respondents that confused procedural and unknown delay with one another, four in fact were found to have wrongly classified unknown delays as being procedural delays. In looking at the entire sample a crosstab between actual types of delays respondents encountered and the types of delays that they had perceived to occur produced a significant Chi-square ($p < .000$).

Measuring dependent variables

In order to investigate the hypotheses cited earlier the questions most appropriate for investigating our dependent variables had to be isolated. To do so questions which on their face validity seemed to represent the dependent variable under consideration were first chosen. A reliability analysis was then carried out in order to verify that all multi-item measures chosen were in fact internally consistent.

One of the dependent variables identified earlier as being necessary to test our hypothesis was respondents' duration estimates. In each questionnaire there was an open ended question which asked consumers to indicate in minutes and seconds the time it took them to finish their simulation. Further there was also a question which asked respondents to indicate the degree that they found their simulation to be either short or long. Both questions seemed to have appropriate face validity in representing respondents' duration estimates. Thus in testing our hypothesis both questions were used.

However, in looking at the questions on consumers' duration estimates it was noted that they actually measured respondents' duration estimates of their simulations and not of the delays encountered. In the hypotheses cited earlier, however, it was the duration estimates of the delays themselves that was referred to. To compensate for this, respondents at the start of their questionnaires were directed first to these questions. After doing so they were also told that the registration process itself should have taken them on average 8-10 minutes to complete and thus that we, the experimenters, were more interested in the length of the delays they had encountered. To make sure

respondents answered both these questions appropriately they were then asked to estimate out loud the length of the delay they had faced during their simulation. By verbally asking this question it was hoped that respondents would be would be clearer on the fact that they were being primed to answer questions on the length of delays encountered instead of the total length of their simulation.

The average times estimated among the six treatment groups ranged from 10 to 15 minutes. Since the delays were all set at a length of 10 minutes and the entire simulation generally took respondents roughly 18-20 minutes to complete, there was reason to believe that respondents had only judged the length of their delays. Times around the 18-20 minute range were quite rare and localized to the treatments groups for which we expected the worst times to occur for. Thus there was confidence that both the open and closed-ended time estimation questions were properly interpreted by respondents.

Another dependent variable deemed necessary for testing the hypotheses under consideration was respondents' affective reactions to the delays encountered. Two measures in the questionnaires were judged to be valid gauges for this variable. First the questions asking respondents about their irritation, annoyance and anxiousness levels during delays were combined to form a multi-item measure of respondents' stress levels during delays. The five item measure of respondents' feelings while they waited was also used to gauge respondents' affective reactions. Recall this measure was composed of five separate semantic differential scales with end points like "happy" and "unhappy" (See Appendix; pg. 3. of questionnaire).

The last dependent variable which needed to be considered was respondents' overall evaluation of the package itself. Two separate single-items measures were isolated for this purpose. The question asking respondents to indicate the intensity of their "like" for the package, for example, was thought to capture part of respondents' overall evaluation of the package. Likewise, the three-item measure asking respondents to indicate their feelings towards the registration package was also thought to capture, in some part, respondents' overall evaluations of the package.

Reliability Analysis

Next a reliability analysis on the three multi-item measures chosen was done in order to insure that they were all internally consistent. The results generally indicated they were. For example, a cronbach alpha of .9593 was generated for the three item measure chosen to measure respondents' feelings towards the package. Further a cronbach alpha of .7643 was generated for the three item measure chosen to represent respondents' stress levels during delays encountered. Lastly a cronbach alpha of .8960 was generated for the five item measure chosen to represent respondents' feelings while they waited during delays encountered. These figures were interpreted as being adequate for supporting the use of all three multi-item measures.

Results

Multiple analyses were done on our experimental results to test our hypotheses. For example, Anovas were first conducted on linear composites of our dependent variables (i.e. there were multiple measures for both duration estimates and affective reactions) to determine the exact nature of the relationship between them and our two experimental variables (i.e. delay type and service stage). Recall six separate experimental treatments were created to account for the three delay types and the two service stages being studied (See Table 1). For both variables this analysis generally confirmed an significant interaction effect between delay type and service stage (a confidence level of .10 was used throughout). A series of Anovas was then done on each of the measures (i.e. duration estimate of delay, perceived length of delay, stress during delay, and feelings during delay) used to represent our two dependent variables. They verified the significance of an interaction effect for each of these measures. Scores on each measure were then examined across the six treatments in order to determine whether the interaction effects were indeed in the direction implied by our hypotheses. A Canonical analysis was also used to assess the relationship between respondents' general reactions to delays (i.e. durations estimates and affective reactions) and their service evaluations of the package itself.

The first six hypotheses offered (H1(a)-H1(g)) predicted a definite pattern of results across our six experimental treatments for the measures used both to capture respondents' duration estimates and their affective reactions. Hypothesis H1(a), for example, predicted procedural delays to produce more negative affective reactions at the pre-process stage of the simulation than at its

in-process stage. Hypothesis H1(c) on the other hand, predicted correctional delays to produce the most negative affective reactions at the in-process stage of the simulation. Finally H1(e) predicted unknown delays like procedural delays to cause the most negative affective reactions from consumers during the pre-process stage. Hypotheses H1(b) and H1(d) and H1(f) purposed a similar pattern for consumers' duration estimates.

The Anovas done on the linear composites of our dependent measures generally confirmed that respondents reactions to delays depended not only on the timing of delays but also on the type of delays being faced. For example, the Anova done on the linear composite of the standardized scores of our two duration estimate measures produced a significant interaction effect ($F(2,114)=56.00$, $p< .000$). Standardized scores were computed because the scales used to capture our two measures were not uniform. The linear composite of our duration measures did not produce a significant main effect for either delay type ($F(2,114)=1.337$, $p < .267$) or delay stage ($F(1,114)=0\ 073$, $p< .787$). Likewise, the Anova done on the linear composite of the standardized scores of our two affective reaction measures also produced a significant interaction effect ($F(2,114)=9.246$, $p< .000$). Standardized scores were again computed because the scales used to capture our two measures were not uniform The linear composite of our affective reaction measures, however, did produce a significant main effect for delay type ($F(2,114)=3.385$, $p < .037$) and delay stage ($F(1,114)=3.774$ $p< .055$). These results supported the contention that delay type and service stage needed to be considered jointly in trying to account for respondents' overall reactions to service delays More importantly, however, our first six hypotheses (i.e. H1(a)-H1(b)) implicitly suggested an interaction effect between delay type and service stage. Recall procedural and unknown delay

were suggested to produce the worst reactions at the pre-process stage while correctional delays were argued to produce the worst reactions at the in-process stage our service encounter (See Fig. 8, 9 for anova results).

Similar analyses were done on each of the individual measures used to gauge our dependent variables (See Fig. 8, 9). For example, for the measure of respondents' duration estimates an Anova analysis indicated a significant interaction effect ($F(2,114)=31.56$ $p< .000$) and a significant main effect for delay type ($F(2,114)=3.449$ $p< .035$). The main effect for delay stage was not found to be significant ($F(1,114)=2.669$ $p< .105$). For the measure of respondents' perceptions of delay length only the interaction effect was found to be significant ($F(2,114)=36.54$ $p< .000$). Neither the main effect for delay type ($F(2,114)=0.54$ $p< .948$) nor delay stage ($F(1,114)=1.488$ $p< .225$) was found to be significant. The measure of respondents' stress levels produced a significant interaction effect ($F(2,114)=6.067$ $p< .003$) along with a significant main effect for delay type ($F(2,114)=3.727$ $p< .027$) and for delay stage ($F(1,114)=3.192$ $p< .077$). Finally, the measure used to gauge respondents' feelings during delays produced a significant interaction effect ($F(2,114)=8.744$ $p< .000$). The main effect for delay type ($F(2,114)=2.201$ $p< .115$) and delay stage ($F(1,114)=2.271$ $p< .102$) were not found to be significant. The significance of the interaction effect (i.e. delay type by delay stage) for all of these measures further supported the need to consider both factors.

The cell means produced for both measures of respondents duration estimates (i.e. straight duration measure and perception of length measure) generally supported the pattern suggested by our hypotheses (i.e. H1(b), H1(d) and H1(f)). For example for the duration estimate measure, respondents gave higher

duration estimates for procedural delays during the pre-process stage, higher duration estimates for correctional delays during the in-process stage and higher duration estimates for unknown delays during the pre-process stage (See Fig. 8). For the perception of length measure, respondents seemed to perceive longer durations for procedural delays during the pre-process stage, longer durations for correctional delays during the in-process stage and longer duration for unknown delays during the pre-process stage (See Fig. 8).

In the case of the two measures used to gauge respondents' affective reactions to delays encountered (i.e. stress measure and feelings measure), cell means were also generally supportive of our hypotheses (i e. H1(a), H1(c) and H1(e)) For example, while higher levels of stress were detected for procedural delays at the pre-process stage, higher levels of stress were also detected for correctional delay at the in-process stage. However, unknown delays solicited higher not lower stress levels at the in-process stage (see hypothesis H1(e)) The cell means for the feelings measure, on the other hand supported the pattern suggested by our hypotheses for all three delay types across. That is, the most negative feelings towards procedural and unknown delays were encountered at the pre-process stage while the most negative feelings for correctional delays were encountered at the in-process stage (See Fig. 9).

In terms of supporting or rejecting each of our hypotheses, we looked at all the cell means provided above. Hypothesis H1(a) for example, suggested that procedural delays would cause the worst affective reactions from respondents when experienced at the pre-process stage. In looking at the cell means of the two measures used to gauge respondents' duration estimates, both measures were found to support the directional nature of the implied effect. In this case

both the stress and feelings measures were found to produce cell means which suggested the worst affective reactions for procedural delays at the in-process stage. Thus this hypothesis was supported by both of the measures used to measure respondents' affective reactions. A similar assessment was done for the other five hypotheses. Of these five, four were found to be supported by both the measures used to gauge either respondents' affective reactions or their duration estimates. Hypothesis H1(e) was the only hypothesis for which only one of the measures used produced cell means which supported the direction of the expected effects (note: stress levels were found to be lower for unknown delays at in-process stage than at the pre-process stage). Thus hypothesis H1(e) was the only one of our first six which did not receive full support from all its relevant measures (See Table 2).

Hypothesis H1(g) suggested that respondents' general reactions to delays encountered would tend to influence their final evaluations of service. Earlier, respondents' duration estimates of delays and their affective reactions to delays were argued to jointly represent their overall reactions to delays encountered. Thus for the purpose of testing Hypothesis H1(g) the measures used earlier to gauge duration estimates and affective reactions were combined to represent respondents' overall reactions to delays encountered. In order to test this hypothesis, a Canonical analysis was carried out to simultaneously consider the set of measures representing respondents' overall reactions to delays and the set of measures representing their final service evaluations (i.e. like for package and feelings for package) A Canonical R-squared of .7436 observed between these two sets of measures confirmed that respondents' overall reactions to service delays were strongly related to their final service evaluations. Cell means for the two service evaluation measures were then looked at in order to

verify that respondents' service evaluations were influenced in the expected direction. Cell means generally indicated that service evaluations did reflect either the positive or negative nature of respondents' overall reactions to delays encountered. For example, service evaluations scores on both measures were worse for correctional delays at the in-process stage while being better during the same stage for procedural and unknown delays (See Fig. 10). This seemed to indicate that respondents' service evaluations over our six experimental treatments followed the same pattern that was observed for their overall reactions to delays encountered. Thus there seemed to be strong support for hypothesis H1(g).

Discussion

Research leading up to and including Dubé et al.'s work (1991, 1990, 1989) seemed to offer two models which tried to independently predict consumer's reactions to service delays. For example, the psychological force model was implied by work which had tried to explain the relationship between consumers' duration estimates and the timing of service delays. The anticipatory model, on the other hand, was implied by work which had tried to explain the relationship between consumers' duration estimates of delays and the timing of service delays. The service research predating this work, however, suggested an anomaly between the predictions of both models. By offering a situational context in which to interpret these models (i.e. delay type), this paper presented a model which was conceptually able to account for this anomaly. Further this model was also able to link consumers' global reactions to service delays to their service evaluations.

The hypotheses created for this experiment were systematically designed to test the validity of this model. The first six hypotheses, for example, were designed to test the adequacy of the situational contexts chosen for the study (i.e. delay type and service stage). The three types of delays and two delay stages operationalized earlier in this study were used to test the ability of the model to account for the anomaly cited earlier. The situational contexts chosen for this study (i.e. delay type/service stage) were found to be sufficient to create conditions where the patterns of responses observed on experimental measures did correspond to what may have been jointly predicted from the psychological force and anticipatory models.

The last hypothesis indicated that respondents' duration estimates of delays and their affective reactions to delays would tend to jointly reflect their final service evaluations. Analyses confirmed that there was indeed a direct relationship between respondents overall reactions to delays encountered (i.e. affective reactions and duration estimates were considered together to represent overall perceptions of delays encountered) and their final evaluations of service. Service evaluations generally tended to reflect the duration estimates and affective reactions to delays encountered in each service encounter.

Implications

In supporting most of our experimental hypotheses, the results suggest certain marketing implications for service managers.

For example, by fixing a uniform time for all delays (i.e. 10 mins.) the experiment confirmed the importance of considering consumers' perceptions of service delays over simply considering actual delay length. Previously it was pointed out that much of the research first done on service delays (i.e. operations research) focused in on the tasks like trying to reduce service bottlenecks by streamlining service processes. However, in demonstrating that delays of same length could still produce different reactions from consumers, our experiment indicated the limitations of these earlier strategies and highlighted the importance of considering non-temporal factors. Our results further supported other service research done at the same time on consumers' perceptions of delays (Hornick, 1981) that clearly showed consumers' perceptions of the delay length did not always coincide perfectly with actual delay length.

These results thus would seem to suggest to service managers, that in dealing with service delays, they may need to consider strategies which look at more than merely reducing actual delay length. Research recently has begun to focus more and more on strategies designed to alter consumers' perceptions of delays encountered. Thus a manager of a restaurant could be encouraged to come up with strategies designed to make people waiting in line outside his/her restaurant perceive shorter delays. The use of music, or large menus posted outside the restaurant might have be offered as ways of securing such an objective.

This is not to suggest that the actual length of a service delay does not effect the way consumers may end up feeling towards a service. Strategies aimed at reducing the actual length of delays may in fact be extremely effective in improving consumers' perceptions of a service However, when such strategies are limited by objective constraints, managers must consider adopting strategies aimed at changing consumers' perceptions of delays.

The experimental results also confirmed recent assertions on the importance of the actual timing of delays during service encounters. Dubé et al. (1989, 1990, 1991) were cited earlier as arguing that the timing of service delays during service encounters would tend influence consumer's service evaluations. Our experimental results would generally tend to confirm such a notion. For example, respondents overall reactions to all three types of delays tended to vary depending on the exact stage of the service in which they occurred, procedural, correctional and unknown delays produced different reactions from respondents across both the pre-process and in-process stages of our experimental service encounter.

These results would seem to suggest to service managers the importance of considering the actual timing of delays before devising strategies aimed at limiting consumers' negative reactions to service delays For example, if consumer's reactions to delays are to differ depending on the stage of the service in which they occur, one might suggest that service managers should develop specific coping strategies for service delays depending on the stage at which they occur. Thus a restaurant owner might need to devise a separate strategy to cope with delays occurring before and after his/her customers are actually seated.

The experimental results along with confirming the importance of considering the timing of a delay during a service encounter also introduced the importance of considering the type of delay being encountered. Previous research on service delays, though dealing with issues like consumers' perceptions, all but ignored the issue of delay type. This study, however, introduced this factor by operationalizing three distinct delay types. The experimental results generally supported the introduction of this factor. Results across the three delay types were also found to occasionally produce statistically significant differences across the measures used to gauge respondents' reactions to the delays encountered. This seemed to suggest that services managers needed to consider the type of delay their customers were likely to encounter in future service encounters.

Lastly the experimental results also confirmed the importance of considering the timing of delays within the context of the type of delay being experienced. For example, aside from simply considering the timing of delays and the nature of the delay separately, the results confirmed that these factors also needed to be considered simultaneously. That is, the results seemed to suggest that consumers' reactions to a delay could also necessarily depend on a combination of effects between the exact timing of a delay and the exact nature of the delay being experienced.

Thus a service manager trying to develop a strategy for dealing with a service delay would have to develop a unique strategy which could account not only for the timing of the delay but also for the types of delay being experienced. A restaurant manager plagued with long lines outside his restaurant would thus need to devise a strategy not only to consider the timing of this delay but also

they type of delay being experienced. Such a delay could be caused, for example, due to the time of day (i.e. a lunch rush) or by a unscheduled event (i.e. sick staff). Further the specific cause may or may not be known to the restaurants' clientele waiting in line. Depending on the cause and on clients knowledge of said cause, a service manager would thus be able to classify the type of delay being experienced. However, in order to develop a corrective strategy our service manager would also need to be aware of the reactions likely to occur at each stage of the service (i.e. pre-process, in-process and post-process) for this kind of delay.

Limitations

In looking at both the model suggested in this study and the experiment used to support it there are some limitations which must be pointed out.

Our model was introduced as a means to account for some of the conflicting results suggested in past work which only considered the timing of delays. In looking the experimental conditions employed in the studies which were used in support this earlier work, it was clear that the circumstances in which delays were tested were not always uniform. Delay type was thus used in our model to compensate for the varying experimental conditions used in past studies. Delay type was argued to be a variable which could modulate the perceived severity of delays in service encounters. In using this experimental variable in combination with the timing of delays and by taking consumers service evaluations into consideration, it was hoped that a better predictive model could be had. Our results generally indicated that the addition of delay type was able to reconcile some of the conflicting findings of earlier research.

However for some service providers, delay type or service stage may not be variables which can easily be manipulated during the delivery of their services. For example, for services which occur over relatively short periods of time, service stage may be all but a mute point. Further for services where delays are all likely to be perceived to be the same, delay type would also be hard to operationalize. This highlights the needs for future researchers to continue the search for additional situational variables which might effect consumers' reactions to service delays.

A similar argument can also be drawn when looking at our experiment itself. Recall that an artificial service setting was created in which to test reactions to service delays. The artificiality of the experimental setting must be considered when trying to generalize our results. In our experiment, for example, we tried to create conditions in which respondents were cued as to the type of delay they were facing. Our results indicated that this was done quite successfully. However, the real life cues in an actual service setting may not be as clear. Thus our respondents during an actual service delay would probably not know with the certainty that they did in the experiment the kind of delay being experienced. Under such a scenario, other situational variables in the service encounter would probably become more important in trying to predict consumers' reactions to delays encountered. Thus again researchers in future should look to identify other situational variables outside those already identified.

The use of students also should be pointed out in considering the applicability of our results. Students may or may have be a good base from which to generalize our results to all consumers of services. To the extent that they are representative of the clients of actual services we should be careful in applying the predictions of our model.

Lastly this study employed a very close version of an existing questionnaire which had been used in a similar study by Hui (1993). Though the measures chosen from this questionnaire to represent our dependent measures were able to support most of our experimental hypotheses, future efforts might benefit from using a more customized instrument.

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FIGURES & TABLES

FIGURE 1.

GROWTH IN THE CANADIAN SERVICE SECTOR IN THE 80'S

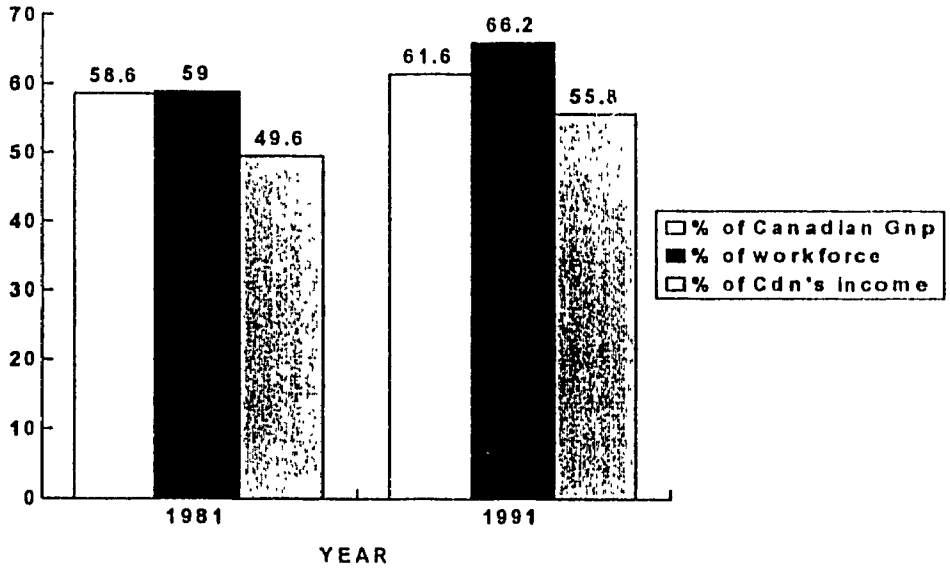
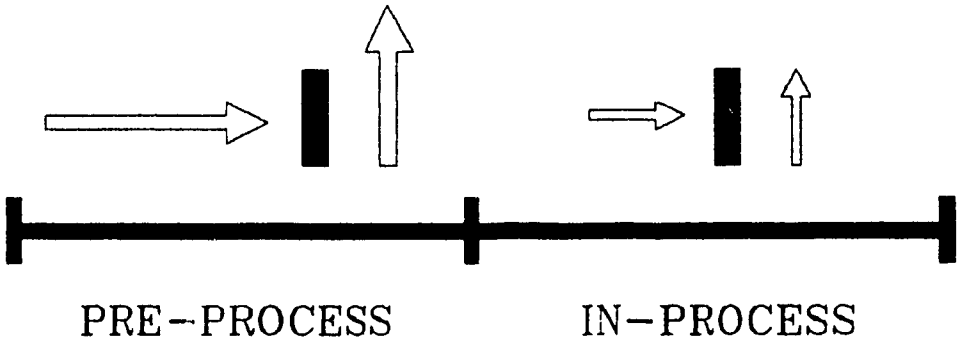


FIG. 2

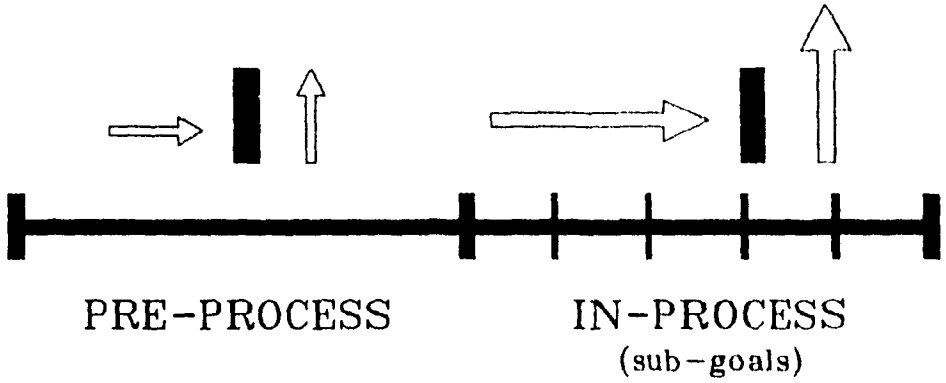


level of psychological pressures

service delay of certain length

intensity of negative reactions

FIG. 3



intensity of anticipatory effects

service delay of certain length

duration estimates of delays

TABLE 1

EXPERIMENTAL TREATMENTS

DELAY TYPE	STAGE OF DELAY	
	PRE-PROCESS	IN-PROCESS
PROCEDURAL	TREATMENT 1	TREATMENT 4
CORRECTIONAL	TREATMENT 2	TREATMENT 5
UNKNOWN	TREATMENT 3	TREATMENT 6

FIG. 4

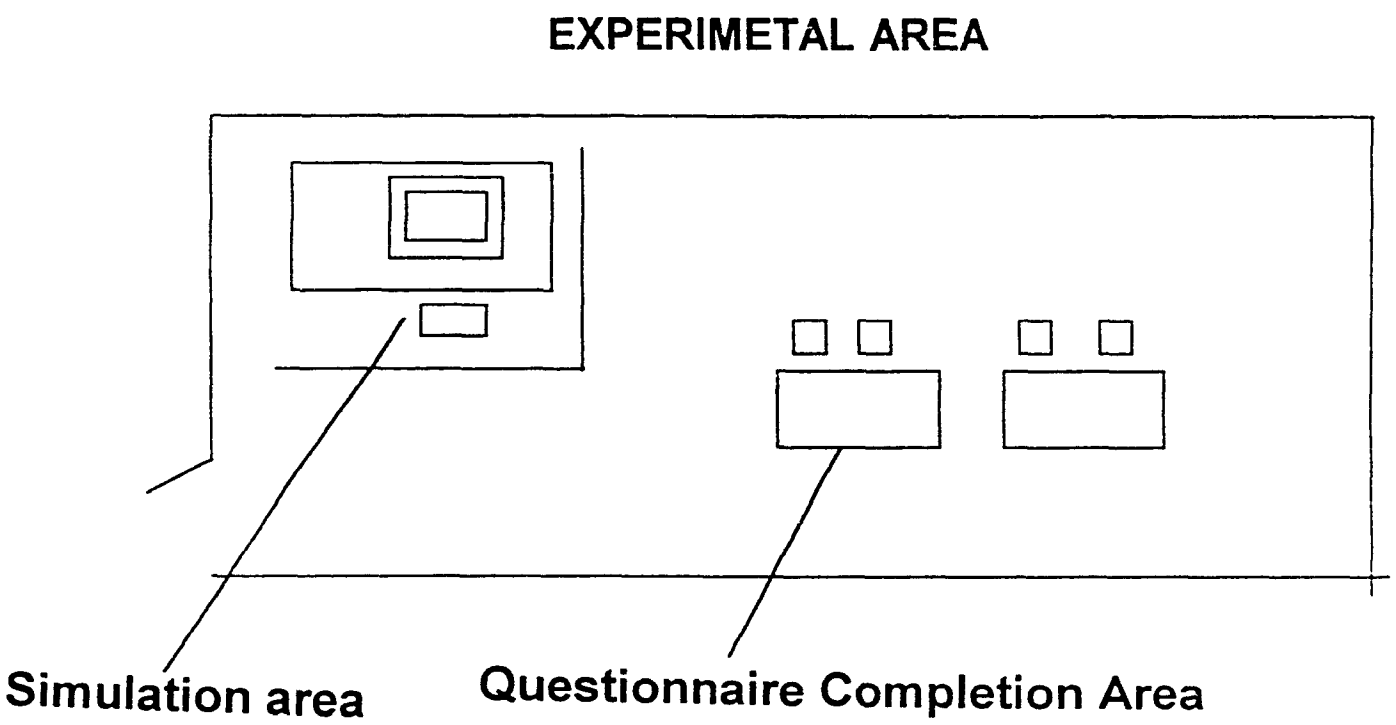

EXPERIMETAL AREA
Simulation area
Questionnaire Completion Area

FIG. 5

Respon no _____

CONSENT FORM

This is to state that I agree to participate in research currently being conducted by Dr. Hui of Concordia University. I have been informed that the general purpose of this research is to test a computerized registration package for its possible use in the future.

In order to participate, I agree to take part in an experiment in which I will be asked to make use of this package. However, I reserve the right to withdraw my consent and to discontinue my participation at any time should I feel the need to do so.

I am aware that after completing this experiment I will be given $5 as compensation for my participation. Further, I realize that this payment is contingent on my complete participation and is forfeit in the event I choose to withdraw my participation.

After carefully studying this agreement I now freely consent to participate in this study.

name (please print):_____

signature:_____

witness signature:_____

date:_____

FIG. 6

INSTRUCTIONS AND RESEARCH DETAILS

To test our student registration package you will be asked to use it in order to register for 4 courses for the next two semesters. We would like you to pick 2 courses from both semesters ie. 2 courses for the fall semester (semester 2) and 2 courses for the winter semester (semester 4) from the list below.

COURSES OFFERED

COURSE	COURSE NUMBER	SEMESTER
ACCO	110	2
FILM	911	2
ENGL	110	2
ENGL	120	2
MATH	103	2
MATH	104	2
ENGL	206	4
BUIS	916	4
CHEM	202	4
PHYS	201	4
BIOL	401	4
HUMA	201	4

Once you reach the course registration screen you will need to do the following:

1. Choose 4 courses (two from each semester) from the list above and make a note of them.
2. Enter the first course's letter code (ie. etec) on the screen where it says "course" and press enter.
3. Enter the first course's code number (ie. 563) on the screen where it says "number" and press enter.
4. Enter the first course's semester number (ie. 2 or 4) where it says "semester" and press enter.
5. **A window will appear on the screen - choose a highlighted section (ie. see) and enter it where it says "section". Press enter.**
6. Repeat steps 2 through 5 for the remaining 3 courses to be entered

FIG. 7

Respon No _____

DEBRIEFING FORM

Initially you were told that the purpose of this study was to test a student registration package for its possible use in the future. This in fact was not the main purpose of this study. The student registration package was simply a means we used in order to place you in a simulated service experience. This was deemed necessary to create conditions conducive to testing our research hypotheses. By signing below you will be indicating that:

1 - You understand that the original purpose disclosed was not the actual purpose of the experiment.

2 - You accept that this needed to be done.

3 - You give permission for the researchers of this study to make use of the data collected on you

4 - You promise not to disclose what you know to anybody outside of this study (ie. friends, fellow students, teachers, ... etc).

name (please print):_____

signature:_____

witness signature:_____

date:_____

FIG. 8

ANALYSIS OF DURATION MEASURES

ESTIMATES OF DELAYS ENCOUNTERED (T1)

VARIABLE: Duration Estimate / DELAY TYPE	STAGE OF DELAY: PRE-PROCESS	STAGE OF DELAY: IN-PROCESS
PROCEDURAL	14.76 *	9.98
CORRECTIONAL	10.66	15.51
UNKNOWN	12.72	10.12

* the perceived length of delays in minutes

PERCEPTIONS OF DELAY LENGH (T2)

VARIABLE: Length Measure / DELAY TYPE	STAGE OF DELAY: PRE-PROCESS	STAGE OF DELAY: IN-PROCESS
PROCEDURAL	4.45 *	2.55
CORRECTIONAL	1.9	5.25
UNKNOWN	3.85	3.35

* the higher the number the longer the perceived delay length

ANOVA ANALYSIS

EFFECT	DF	Variable	F-value	p <
Interaction effect	(2,114)	T1	31.56	.000
main effect (stage)	(1,114)	T1	2.67	.105
main effect (type)	(2,114)	T1	3.45	.035
Interaction effect	(2,114)	T2	36.54	.000
main effect (stage)	(1,114)	T2	0.05	.948
main effect (type)	(2,114)	T2	1.45	.225
Interaction effect	(2,114)	T1 + T2	56.00	.000
main effect (stage)	(1,114)	T1 + T2	0.07	.787
main effect (type)	(2,114)	T1 + T2	1.34	.267

FIG. 9

ANALYSIS OF AFFECTIVE REACTION MEASURES

STRESS PERCEIVED DURING DELAYS

VARIABLE: Duration Estimate	DELAY TYPE	STAGE OF DELAY: PRE-PROCESS	STAGE OF DELAY: IN-PROCESS
	PROCEDURAL	3.93 *	3.35
	CORRECTIONAL	3.20	5.05
	UNKNOWN	3.02	3.33

* the higher the number the higher the level of reported stress

NEGATIVE FEELINGS DURING DELAY (NF)

VARIABLE: Length Measure	DELAY TYPE	STAGE OF DELAY: PRE-PROCESS	STAGE OF DELAY: IN-PROCESS
	PROCEDURAL	3.26 *	2.97
	CORRECTIONAL	2.71	4.32
	UNKNOWN	3.08	3.03

* the higher the number the more negative were feelings during delay

ANOVA ANALYSIS

EFFECT	DF	Variable	F-value	p <
Interaction effect	(2,114)	ST	6.07	.003
main effect (stage)	(1,114)	ST	3.19	.077
main effect (type)	(2,114)	ST	3.73	.027
Interaction effect	(2,114)	NF	8.74	.000
main effect (stage)	(1,114)	NF	2.27	.102
main effect (type)	(2,114)	NF	2.20	.115
Interaction effect	(2,114)	ST + NF	9.25	.000
main effect (stage)	(1,114)	ST + NF	3.77	.055
main effect (type)	(2,114)	ST + NF	3.39	.037

TABLE 2.

CONFIRMATION OF HYPOTHESES

Hypothesis	Measures	Delay type	Expected effect	# of measures	*Cell Means
H1(A)	Affective reactions	Procedural	worse at pre-process stage of service	2	2 of 2
H1(B)	Duration estimates	Procedural	longer at pre-process stage of service	2	2 of 2
H1(C)	Affective reactions	Correctional	worse at in-process stage of service	2	2 of 2
H1(D)	Duration estimates	Correctional	longer at in-process stage of service	2	2 of 2
H1(E)	Affective reactions	Unknown	worse at pre-process stage of servcie	2	1 of 2
H1(F)	Duration estimates	Unknown	longer at pre-process stage of service	2	2 of 2

* number of measures whose cell means support the direction of expected effect

FIG. 10

ANALYSIS OF SERVICE EVALUATIONS MEASURES

FEELINGS ABOUT REGISTRATION PACKAGE (FT)

VARIABLE: Duration Estimate	DELAY TYPE	STAGE OF DELAY: PRE-PROCESS	STAGE OF DELAY: IN-PROCESS
	PROCEDURAL	2.8 *	2.08
	CORRECTIONAL	1.90	3.97
	UNKNOWN	2.37	2.13

* the higher the number the less positive the feelings about package

GENERAL DISLIKE FOR PACKAGE (GD)

VARIABLE: Length Measure	DELAY TYPE	STAGE OF DELAY: PRE-PROCESS	STAGE OF DELAY: IN-PROCESS
	PROCEDURAL	3.95 *	2.65
	CORRECTIONAL	2.3	4.65
	UNKNOWN	3.05	2.08

* the higher the number the less package was liked

ANOVA ANALYSIS

EFFECT	DF	Variable	F-value	p <
Interaction effect	(2,114)	FT	12.91	.000
main effect (stage)	(1,114)	FT	2.43	.122
main effect (type)	(2,114)	FT	2.90	.059
Interaction effect	(2,114)	GD	12.33	.000
main effect (stage)	(1,114)	GD	0.75	.390
main effect (type)	(2,114)	GD	1.10	.335
Interaction effect	(2,114)	FT + GD	14.26	.000
main effect (stage)	(1,114)	FT + GD	1.65	.201
main effect (type)	(2,114)	FT + GD	2.04	.135

APPENDIX

Respondent No _____ (Office use)

Please read carefully

A key issue for this new course registration package is the amount of time it actually takes to complete your registration. Consequently, the following questions are designed to investigate this matter and to explore for the possibility of improvement. Thank you for your cooperation.

Section A:

1. According to the information provided by the computer, the single most significant delay you encountered while using this package was caused by (please check the most appropriate category):

the computer being busy _____
the computer not functioning properly _____
unspecified reasons (i e., no information given) _____

2. How much do you like this new course registration service (please put a check mark at the most appropriate space)?

Not at all ____ Very slight ____ Slight ____ Slight to moderate ____
Moderate ____ Much ____ Very much ____ Extremely so ____

3. Your feelings toward the new service can be summarized as (please put a check mark at the most appropriate space for each of the following items):

unfavourable	_____	_____	_____	_____	_____	_____	_____	favourable
	extremely	quite	slightly	neither	slightly	quite	extremely	
good	_____	_____	_____	_____	_____	_____	_____	bad
	extremely	quite	slightly	neither	slightly	quite	extremely	
negative	_____	_____	_____	_____	_____	_____	_____	positive
	extremely	quite	slightly	neither	slightly	quite	extremely	

4. How long did the package take to complete your course registration?

about _____ minutes _____ seconds

5. How would you best describe the actual length of your registration?

long	_____	_____	_____	_____	_____	_____	_____	short
	extremely	quite	slightly	neither	slightly	quite	extremely	

6. Was the required time acceptable to you (please put a check mark at the most appropriate space)?

Not at all ____ Very slight ____ Slight ____ Slight to moderate ____
Moderate ____ Much ____ Very much ____ Extremely so ____

7. If the college decides to launch this new service, how likely would you want to use it (please put a check mark at the most appropriate space)?

unlikely _____ : _____ : _____ _____ _____ : _____ : _____ likely
extremely quite slightly neither slightly quite extremely

8. How much does each of the following words describe your feelings while you were waiting for the computer to complete your registration?

(a) irritated

Not at all ____ Very slight ____ Slight ____ Slight to moderate
Moderate ____ Much ____ Very much ____ Extremely so

(b) annoyed

Not at all ____ Very slight ____ Slight ____ Slight to moderate
Moderate ____ Much ____ Very much ____ Extremely so

(c) anxious

Not at all ____ Very slight ____ Slight ____ Slight to moderate
Moderate ____ Much ____ Very much ____ Extremely so ____

SECTION B: Below are some statements which may describe your feelings when you were waiting for the computer to complete your registration Please read each statement carefully and then circle the number which most closely describes your level of agreement or disagreement (1 = Strongly Agree; 2 = Agree; 3 = Slightly Agree; 4 = Neither Agree Nor Disagree; 5 = Slightly Disagree; 6 = Disagree; 7 = Strongly Disagree). There are no right or wrong answers - we are simply interested in the number that best represents your feelings.

	Strongly Agree			Neither Agree Nor Disagree			Strongly Disagree
Every thing is under my control	1	2	3	4	5	6	7
The whole process just lasts too long	1	2	3	4	5	6	7
It is difficult to maintain my mastery over the situation	1	2	3	4	5	6	7
I can save a lot of time by using this new service	1	2	3	4	5	6	7
I will recommend this new service to my friends in the college	1	2	3	4	5	6	7
I feel able to influence the way things are	1	2	3	4	5	6	7
I find it difficult to get my own way	1	2	3	4	5	6	7
I do not intend to use this new service	1	2	3	4	5	6	7

SECTION C Recall your feelings while you were waiting for the computer to complete your registration, and rate the following adjective pairs. Some of the pairs might seem unusual, but you will probably feel more one way than the other. For each pair, put a check mark (Example: ____ : ✓ : ____) closer to the adjective which you believe to best describe your feelings.

Calm	___	___	___	___	___	___	___	Excited
Melancholic	___	___	___	___	___	___	___	Contented
Competent	___	___	___	___	___	___	___	Incompetent
Hopeful	___	___	___	___	___	___	___	Despairing
Controlling	___	___	___	___	___	___	___	Controlled
Awed	___	___	___	___	___	___	___	Important
Satisfied	___	___	___	___	___	___	___	Unsatisfied
Pleased	___	___	___	___	___	___	___	Annoyed
Helpless	___	___	___	___	___	___	___	Confident
Influenced	___	___	___	___	___	___	___	Influential
Stimulated	___	___	___	___	___	___	___	Relaxed
Strong	___	___	___	___	___	___	___	Weak
Guided	___	___	___	___	___	___	___	Autonomous
Happy	___	___	___	___	___	___	___	Unhappy
Dominant	___	___	___	___	___	___	___	Submissive
Bored	___	___	___	___	___	___	___	Relaxed
In Control	___	___	___	___	___	___	___	No Control
Dull	___	___	___	___	___	___	___	Jittery

SECTION D: For the delay you encountered while using this package, the items below should help to capture some of your impressions or opinions as to the cause(s) of these delays. Circle one number for each of the following items

1) Is the cause(s) something that.								
(a) Reflect an aspect of yourself	7	6	5	4	3	2	1	Reflects an aspect of the situation
(b) Reflect an aspect of the college	7	6	5	4	3	2	1	Reflects an aspect of the situation
2) Is the cause(s):								
Controllable by the college	7	6	5	4	3	2	1	Uncontrollable by the college
3) Is the cause(s) something that is								
Permanent	7	6	5	4	3	2	1	Temporary
4) Is the cause(s) something that is								
(a) Outside of you	7	6	5	4	3	2	1	Inside of you
(b) Outside of the college	7	6	5	4	3	2	1	Inside of the college
5) Is the cause(s) something that is:								
Variable over time	7	6	5	4	3	2	1	Stable over time
6) Is the cause(s) something:								
Intended by the college	7	6	5	4	3	2	1	Unintended by the college
7) Is the cause(s):								
(a) Something about you	7	6	5	4	3	2	1	Something about others
(b) Something about the college	7	6	5	4	3	2	1	Something about others
8) Is the cause(s) something that is.								
Changeable	7	6	5	4	3	2	1	Unchanging
9) Is the cause(s) something for which:								
No one is responsible	7	6	5	4	3	2	1	Someone is responsible

Section E

1. Are you: _____Male _____Female 2. Please indicate your age _

3. Your major at Champlain is: _____ _____

- Thank you -