Affiliation Motivation in Everyday Experiences: A Comparison of a Homeostatic and a Dialectic Model

by

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Abstract

Two alternative conceptualizations of the process underlying affiliation motivation in everyday life were investigated. The first of these two views, the social affiliation model, reflects a homeostatic principle, whereas the second, privacy regulation theory, is based on a dialectic concept (Altman, 1975; Altman, Vinsel, & Brown, 1981). The everyday affiliative experiences of 66 subjects were obtained using the Experience-Sampling Method (ESM; Larson & Csikszentmihalyi, 1983). This method samples individuals' ongoing experiences by having them respond to a signal that is emitted from a small electronic device. The results of a lag 1 sequential analysis of transition frequencies indicated that when subjects' objective situation (i.e., either alone or in social contact) corresponded with their subjective situation (i.e., wanted to be either alone or in social contact), subjects were, on a subsequent signal, likely to be still in the same objective situation at greater-than-chance levels and to be in the opposite objective situation at less-than-chance levels ($p < .01$). These findings replicate pilot data and are consistent with the view of the social affiliation model that the process underlying affiliation motivation operates according to a homeostatic principle. Privacy regulation theory, on the other hand, was not supported. Additional analyses, which examined lags greater than 1 and subjects' transitions to specific subjective situations, also failed to support this latter model.

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Affiliation Motivation in Everyday Experiences:

A Comparison of a Homeostatic and a Dialectic Model

> "A guy needs somebody - to be near him." He whined, "A guy goes nuts if he ain't got nobody. Don't make no difference who the guy is, long's he's with you. I tell ya," he cried, "I tell ya a guy gets too lonely an' he gets sick" (Steinbeck, 1937, p. 80).

Like the character in John Steinbeck's novel, Of Mice and Men, psychologists have recognized the importance of a need for others. Murray (1938) defined this need for affiliation as a propensity "to form friendships and associations. To greet, join, and live with others. To cooperate and converse sociably with others. To love. To join groups" (p. 83). Others have posited that people strive "to meet a physical or psychological need for a minimal level of variety or physical/psychological stimulation" (Foddy, 1984, p. 303) and that "there are times when people want to be alone and out of contact with others and there are times when others are sought out, to be heard and to hear, to talk and to listen" (Altman, 1975, p. 22).

The need for affiliation is generally believed to motivate individuals to seek out solitude at times and social contact at other times. This process has been referred to as affiliation motivation. Although the need for humans to affiliate has been recognized (e.g., Maslow, 1954), the underlying motivational process of this need is not well understood. In the present research, it is postulated that research into ongoing-everyday interactions will identify nonrandom patterns of affiliative behavior. These patterns are thought to be indicative of underlying affiliation motivation.

Although various conceptualizations of affiliation motivation have been suggested (e.g., Atkinson, Heyns, & Veroff, 1954; Mehrabian & Ksionzky, 1974;

Schachter, 1959; Shipley & Veroff, 1952), this thesis focuses on two: privacy regulation theory (Altman, 1975; Altman, Vinsel, & Brown, 1981) and the social affiliation model. The former is based on a dialectic concept, whereas the latter, is a model I propose and is based on a homeostatic framework (e.g., Brent, 1978; Cannon, 1939; Cofer & Appley, 1964; Stagner, 1961, 1977). The purpose of the present study is to determine whether the social affiliation model or privacy regulation theory better accounts for everyday behaviors in those situations in which the two views make contrasting predictions.

Theoretical Considerations

Social Affiliation Model

Consistent with a homeostatic perspective, individuals are thought to have their own ideal range of social affiliation. This range is considered to be an optimal amount of social contact and deviations from it are expected to motivate individuals to seek out varying degrees of social contact so that this optimal range can be re-established. More specifically, if excess contact is experienced, people will seek out privacy so that this range can be re-established. Similarly, if individuals experience too much solitude, they will seek out others in order to return to their optimal range of social affiliation. In the present study, both excess contact and excess solitude are indicated by one's actual and desired levels of social contact.

Privacy Regulation Theory

A second conceptualization of how and why humans move in and out of social contact in everyday life is Altman's privacy regulation theory (Altman, 1975; Altman et al., 1981). This theory has organized the literature on crowding, personal space, territoriality, and privacy into one theoretical framework. It posits that people use an interpersonal boundary-control process to achieve a desired level of privacy by regulating with whom they come into contact. Altman (1975) defines desired privacy as "a subjective statement of an ideal level of interaction with others - how much or how little contact is desired at some moment in time" (p. 10). The process emanates from a philosophical and metatheoretical view of dialectics (Altman, 1981), which is characterized by oppositional forces. This process primarily involves the opposition between openness towards others (i.e., when one is with others and wants to be) and closedness towards others (i.e., when one is alone and wants to be alone). Each of these states represent a "momentary optimal level" and form one of the two poles of this dialectic, respectively. Together these poles function as part of an unified system with neither pole completely dominating. The more an individual is in one of these states, the more he or she is motivated towards the opposite state.

Similarities and Differences

Both the social affiliation model and privacy regulation theory posit that the psychological experience of crowding occurs when a person's "achieved level" of social contact is more than her or his "desired level". This leads to unwanted social

interactions and motivates a person to pursue the opposite state, that is, to be alone. Conversely, social isolation occurs when a person's achieved level of privacy is more than desired. This motivates a person to seek out others. When an individual experiences excess contact or social isolation, as indicated by the discrepancy between achieved and desired levels of affiliation, both privacy regulation theory and the social affiliation model make similar predictions. Both predict that an individual is motivated towards the opposite state. According to privacy regulation theory, this occurs because of the dialectic of opposing forces. According to the social affiliation model, on the other hand, this occurs because individuals are trying to re-establish their optimal range of social affiliation.

When achieved and desired privacy concur (e.g., the state in which the subject is alone and wants to be alone), the social affiliation model and privacy regulation theory predict opposite patterns of subsequent affiliative behavior. According to the former, this state is indicative of individuals who have deviated from their optimal range. Thus, in order to re-establish this range, individuals need to continue in this situation. According to the latter, on the other hand, this state signifies one pole of the dialectic and is considered to be a momentary optimal level of privacy; thus, individuals in this state should be motivated towards the opposite pole (Altman, personal communication, September 4, 1992). Hence, the opposition of the dialectic is apparent.

The distinction of privacy regulation theory as stemming from a dialectic and not a homeostatic perspective has frequently been confused in the literature. As Altman et al. (1981) note:

> As we reexamine earlier writings and references to those writings by others, it became clear that Altman implied a universal idea or an optimal balance of openness and closedness toward which relationships strived. Thus, a homeostatic assumption lurked within the initial privacy framework to the effect that relationships progressed toward some idealized balance or stability of openness and closedness. This became a troubling matter because we did not intuitively believe that relationships operated in this way; nor, as we will discuss later, does dialectic philosophy necessarily assume such a perspective. (p. 116)

Moreover, Altman et al. suggest that "there is a range of relationships between opposites, with no particular one, including equality or balance, being inherently more adaptive than any other one" (p. 122). Thus, within privacy regulation theory, optimal refers only to the momentary condition when achieved and desired states concur, not to an optimal range of ongoing social contact as postulated by the social affiliation model.

In sum, the theoretical propositions of the social affiliation model and privacy regulation theory differ when an individual's achieved and desired levels of social contact concur. Specifically, the social affiliation model predicts that when individuals are in affiliative situations they want to be (e.g., when one is alone and wants to be alone), they will be motivated to continue to be in those situations. Privacy regulation theory, on the other hand, predicts that when individuals are in affiliative situations they want to be, they will be motivated to seek out the opposite state.

Following a review of relevant literature, the contrary positions of the social affiliation model and privacy regulation theory will be elaborated and subsequently tested to assess the relative merits of these two perspectives.

Empirical Support

The need to affiliate is fundamental to the social affiliation model and to privacy regulation theory because this need is thought to motivate individuals to seek out both others and solitude. This general need has three primary components that are not necessarily mutually exclusive: (a) sexual contact, (b) physical contact, and (c) social contact. Although the need for sexual contact is acknowledged, only physical and social contact will be discussed here, with particular emphasis on the latter.

Physical Contact

Montagu (1986) has argued that physical contact is a basic need; in other words, it is essential for survival. Considerable evidence has accumulated regarding the beneficial effects of physical contact in studies of both people and other animals. For instance, Harry F. Harlow's research was definitive in establishing that physical contact was essential to the normal functioning of monkeys. Harlow (1959) argued that comfort derived from physical contact played a significant role in the development of affectional bonds between rhesus-monkey infants and their mothers. Conversely, other researchers (as discussed in Harlow, 1959) maintained that attachment occurred because of mothers' association with relieving biological tensions (e.g., hunger and

thirst). A test of these two hypotheses demonstrated that infant monkeys kept in isolation were more likely to cling to a cloth surrogate mother than to a wire mother even when the latter provided a source of milk. In addition, when confronted with a frightening object or novel environment, infants chose to cling to the cloth mother. On the basis of these infants' strong preference for the cloth surrogate mother, Harlow concluded that providing "contact comfort" was more important to the development of infant-mother attachment than meeting basic physiological needs.

According to Hatch, Wiberg, Balazs, and Grice (1963), physical isolation of rats over long periods significantly altered several of these animals' physiological and behavioral traits (e.g., changes in gland size and the development of convulsive seizures and aggressive behavior). These characteristics were partially reversed or ameliorated by handling the animals for 5 to 10 seconds daily. Moreover, in a comprehensive review of tactile needs, Montagu (1986) reported that handled animals had greater immunological system competence and neural maturation, weighed more, and were more sociable than non-handled animals. In general, these results suggest that physical contact is beneficial to the physiological and psychological well-being of animals.

An investigation by Latané and Werner (1978) demonstrated that time and physical contact played a significant role in the regulation of a rat's affiliative behavior. They demonstrated that time with another rat rather than distance from another rat was the critical factor in this process. Latané and Werner suggested that rats acquired satisfaction by touching and, thus, were able to establish an optimal

balance of affiliation. Although this study cannot be generalized directly to humans, the results underscore specific variables (i.e., time and physical contact) to be considered in any theory of human affiliation. Unlike rats, however, humans are primarily non-contact animals. Thus, whereas satisfaction in rats may be the result of simple body-to-body contact, satisfaction in humans is more likely to be achieved by a complex interaction between the appropriate social distance and the quantity and quality of time at that distance (as discussed in the next section).

In studies with humans, the importance of physical contact is particularly salient in infancy. Early research indicated that a lack of stimulation in infancy was detrimental to both the physical and emotional well-being of infants and was potentially life threatening (Casler, 1961). Recently, a number of researchers have investigated the effects of physical contact on pre-term infants and have demonstrated that infants who were given tactile/kinesthetic stimulation gained more weight compared to infants in control groups even though caloric intake did not differ (Field, Scafidi, & Schanberg, 1987; Scafidi et al., 1990). Massaged infants also engaged in a greater degree of social behavior with their mothers than infants who received only routine nursing care (White-Traut & Nelson, 1988).

Although the need for physical contact appears to be beneficial to infants, the importance of physical contact at other stages of life is not as well understood. One possible explanation for this may be that as humans mature and as physical relationships extend past immediate care givers to include others, a greater degree of social contact results. Hence, the unique importance that physical contact contributes

to the well-being of an individual may be obscured with social contact and thus difficult to determine. Although evidence suggests that an absence of physical contact is detrimental to both physical and psychological functioning, further research is needed to better comprehend the relationship between physical contact and social contact and to relate these to the need for affiliation.

Social Contact

Social contact appears to play an integral role in people's development, adjustment, and everyday life. For the most part, our lives are spent with other people. At birth our existence is dependent on others for protection and sustenance, and as we grow older our relationships extend past our family to friends and to strangers. Referring to people visiting the burial grounds of others, Lippa (1990) suggests that "even in the aftermath of death, people remain social animals" (p. 392-393). However, the effects of too much or too little social contact is not well understood.

Separation in infancy. A number of studies have examined the various effects of a lack of social contact on both human and other animal infants. For example, when isolated over time infant monkeys inappropriately display social behavior (e.g., affection, fear, and aggression; Deets & Harlow, 1971; Suomi, Collins & Harlow, 1973). Hypothesizing that social behavior developed in monkeys over a fixed maturation sequence, Deets and Harlow demonstrated that infant monkeys deprived of social contact for the first three months of life initially showed emotional shock upon

being removed from isolation. This, however, did not prevent them from later establishing normal affiliative behaviors with their peers. This was not the case for animals isolated from birth to six or twelve months. All social behavior was affected in these animals and almost no social affiliation occurred. In contrast, monkeys isolated only between the sixth and twelve months of life displayed some affiliative behavior. The results were more striking for monkeys isolated between the age of 18 and 26 months. Social tests made before and after the isolation period indicated that these monkeys increased social behavior, such as play and sex, directly after isolation. This increase persisted for close to a week before returning to the normal pre-isolation level. Deets and Harlow concluded that social behavior did in part depend upon a fixed maturation sequence.

In review of their numerous studies, Harlow and Harlow noted that monkeys were very versatile in the development of their social behavior. Infants raised exclusively by their mothers, as well as infants raised only among their fellow peers, successfully developed appropriate social behaviors. These researchers suggested that in the absence of either mothers or peers, infant monkeys were able to adequately compensate by obtaining what they needed from those that were present.

A number of authors have noted behavioral patterns in humans similar to Harlow's findings with monkeys. In a review of early psychology history, Gray (1989) related the findings of Henry Dwight Chapin who successfully initiated new policies in early American institutions aimed at curbing infant mortality. Chapin implicated the lack of individual attention as the cause of the high mortality rate

among institutionalized infants (nearly 100%) and suggested that the first year of life was the most critical for these infants. Thus, he worked to establish foster homes with socially stimulating environments.

Similarly, Boy-Galindo, Garcia-Casco, and Torreblanca-Neve (1985) studied the effect that early parental deprivation had on young children. They found that children three to six years of age, who lived in group homes and institutions, exhibited higher frequencies of isolation, destructiveness, and obsessive attachment and lower frequencies of social interaction and affiliation compared to matched controls from stable homes. Likewise, Hodges and Tizard (1989) found that children who had been parentally deprived and experienced multiple-changing care givers until at least 2 years of age had, in their adolescence, more difficulty with peers and experienced fewer closer relationships than matched controls.

Similar to research reported in the previous section on physical contact, these findings support the hypothesis of a general need for others. The lack of social contact brought about by separation in infancy appears to be detrimental to later physical, social, and emotional functioning. These results also suggest, however, that the negative effects of a lack of social contact may be ameliorated under certain conditions.

Social deprivation/satiation. Similar to research into separation in infancy, numerous researchers have investigated the effects of varying degrees of social contact on both people and other animals. According to the homeostatic view of affiliation motivation, social deprivation lowers an individual's current level of affiliation, such

that if the individual falls below her or his optimal range, she or he will experience a need for social contact and hence will be motivated to seek out others. Likewise, social satiation will raise an individual's current level of contact; if this level exceeds the individual's optimal range, she or he will seek out solitude. Similarly, from a dialectic perspective, an individual who is either deprived of or satiated with social contact will be motivated towards the opposite state.

A number of studies support these predictions (e.g., Meaney & Stewart, 1979; Pinckney & Anderson, 1967). Lister and Hilakivi (1988), for instance, examined the effect of the duration of deprivation on the social behavior of male mice. Mice socially deprived for either 0, 1, 2, 5, 10, or 20 days subsequently spent significantly more time in active social interaction as the length of prior social deprivation increased. Thus, the length of prior social deprivation mediated the extent to which the mice actively sought out social contact. As previously mentioned, time and contact, in this case social contact, appear to be related to the affiliation-motivation construct.

Lister and Hilakivi's (1988) results are consistent with the social affiliation model. That is, a period of social deprivation lowered the animals' normal level of contact so that when this period was long enough, the mice dropped below their optimal range of social contact. This motivated the mice to interact when later given the chance. Furthermore, when this period of social deprivation was extended for some mice, their level of affiliation dropped below their optimal range to a greater extent than the animals deprived for a shorter time. Thus, there was a stronger need

for these animals to establish more social contact than the mice deprived for a shorter period.

These results are also consistent with privacy regulation theory. The longer the mice were socially deprived, the more they were motivated to the opposite situation, which was to be in social interaction, when later given the chance.

In a series of laboratory experiments dating back to the 1960s and spanning more than a decade, Latané investigated both the affiliative motive and the gregariousness of rats. Latané (1967) demonstrated that rats had a specific need for interaction with other rats and that this need was higher when rats had been isolated (i.e., deprived of social contact) and lower when they had been interacting. He suggested that rodent sociability was mediated by the quality of the interaction itself rather than by the stimulus characteristics of another rat, such as its smell, appearance, or feel.

Later research by Latané and Werner (1978) supported these preliminary findings. Rats deprived of social contact were more likely to affiliate with another rat when both were placed in an open field than were rats that had been satiated with other rats. Latané and Werner suggested that affiliation in rats was analogous to other metabolic processes like caloric or water consumption. They proposed that rats had a "sociostat" that determined their optimal level of affiliation. If for some reason (e.g., deprivation, anxiety, or exploration) rats deviated from this level, these deviations would be counteracted by innate and learned behaviors that would return the rats to

their optimal level. Thus, the present view of social affiliation, in part, is an elaboration of these earlier formulations.

The hypothesis that a social drive operated in humans, which functioned analogously to a metabolic process, generated considerable debate in the literature from the 1950s to the early 1970s (e.g., Endo, 1968; Gewirtz & Baer, 1958a, 1958b; Kozma, 1971; Rosenhan, 1967; Walters & Henning, 1962; Walters & Ray, 1960). The conceptualization of this drive condition is illustrated more clearly with an analogy between the hunger drive and the drive for social affiliation. It is generally thought that there is an increase in the hunger drive following the deprivation of food that is eliminated when food is eaten. According to Gewirtz and Baer (1958a, 1958b), a similar social drive may occur when an individual is socially deprived (i.e, isolated from human contact) that may be reduced by subsequent social contact.

In an examination of the above assertion, Gewirtz and Baer (1958a) demonstrated that children who had been socially isolated for a short time increased their response frequency to a task when social approval was contingent on the correct response. Response rates were significantly higher in these children than in other children reinforced in the same manner but who had not been socially isolated. Subsequent research showed that the response rates of children who had been socially satiated were least affected by social approval compared to subjects in both a non-deprived and a deprived condition (Gewirtz & Baer, 1958b). From these studies, Gewirtz and Baer concluded that a period of social deprivation was followed by a social drive and that this drive could be ameliorated by social satiation.

Anxiety/social comparison. A number of researchers disagreed with Gewirtz and Baer's (1958a, 1958b) notion of a social drive (e.g., Walters & Henning, 1962; Walters & Ray, 1960). Alternatively, they suggested that anxiety makes people more susceptible to social reinforcers and that being socially deprived is merely an anxiety-provoking situation. This hypothesis was examined by Schachter (1959), who proposed that people affiliated with each other to reduce fear. He showed that subjects in a high-anxiety situation (i.e., those who expected to receive a shock) preferred to wait with others in the same condition rather than alone or with subjects who would not receive a shock. He concluded that people who experienced high anxiety and had similar feelings wanted to compare themselves with each other.

Schachter's (1959) findings supported an earlier notion that people affiliate with others because they want to make social comparisons. Festinger (1954) found that by comparing themselves with others, people evaluated and made decisions about their own thoughts and feelings. Hence, the process of social comparison led to social contact.

One can argue, however, that anxiety and social comparison, like social deprivation and satiation, are only a few of the many conditions that cause individuals to deviate from their optimal range of affiliation. Once affected, individuals are then motivated to re-establish this range. Hence, these various findings are interpretable within the social affiliation model. It is unclear how privacy regulation theory would account for these findings.

Crowding. The effects of crowding on human social behavior underscores another important component of the concept of affiliation motivation. As previously mentioned, excess social contact may bring about the experience of feeling crowded. Generally, this experience is thought to motivate a person to seek out solitude.

The research of various authors supports this hypothesis. Peay and Peay (1983), for instance, investigated the effects of crowding, group size, and physical density on human social behavior. They found that a crowded environment provided an excessive amount of social stimulation for subjects; consequently, individuals withdrew and engaged in less affiliative behaviors. Peay and Peay suggested that subjects reacted this way in order to return to their ideal level of social affiliation. They also suggested that individuals' social behavior was affected by the opportunity to regulate their social contacts, thus implying that circumstances beyond people's control may affect whether or not a certain level of contact can be established. The results of this investigation, unfortunately, did not specifically separate what affected subjects' affiliative behavior (i.e., whether it was group size, density, or both).

The work of Zeedyk-Ryan and Smith (1983) provides additional support for the social affiliation model and for privacy regulation theory. These authors suggested that people who experienced crowding would respond by becoming less desirous of social contact. A Disaster and Civil Defence course requiring field experience in shelter management provided the opportunity for these researchers to randomly assign students to one of two rooms, either low or high in social density (a manipulation of the number of people in each same-sized room). Zeedyk-Ryan and Smith noted that,

unlike previous investigators, they were in a position to study the effects of social density on individuals over a considerably long period (i.e., approximately 18 hours). Analyses of questionnaires indicated that there were significant differences in affective experiences between subjects in the low and high social-density conditions. Compared to subjects in the low-density condition, subjects in the high-density condition disliked interacting with others, spent more time studying, indicated that they had fewer social contacts, strived to be alone more, felt more bored, judged others as not having enjoyed interacting with them, and did not care to interact with other group members in the future. As indicated by these responses, the high-density condition created a lot of negative affect and a desire to reduce social contact. Presumably, if social contact could be reduced, an individual would be able to re-establish his or her optimal range of social affiliation. On the other hand, because subjects in the high-density condition appeared to have a high degree of social contact, they may have been motivated towards the opposite state, which would also be indicated by a desire to be alone.

Not all crowding studies require subjects to engage in non-structured activities over a long period. Baum and Greenberg (1975) demonstrated that subjects who were placed in a room and anticipated a large group chose more isolated seats, used less facial regard, reduced verbal contact, and avoided others more than subjects who anticipated a small group.

In a conceptual replication of their earlier work, Greenberg and Baum (1979) extended their previous findings on the anticipation paradigm (Baum & Greenberg, 1975). They hypothesized that subjects assigned to large groups would anticipate

crowding and prepare for this experience by choosing socially isolated seats and discourage others (i.e., confederates) from interacting with them. Subjects assigned to small groups, conversely, were hypothesized not to anticipate crowding; therefore, they were expected to exhibit normal affiliative behaviors towards confederates. Greenberg and Baum also hypothesized, however, that subjects anticipating large groups who had their expectations disconfirmed would readjust their social behavior to reflect the changed relationship. It was also predicted that subjects in the small groups would not have to readjust their behavior upon having their expectations disconfirmed because they would not have isolated themselves initially.

The results generally supported the aforementioned hypotheses of these authors and their previous research (Baum & Greenberg, 1975). Greenberg and Baum (1979) suggested that the subjects who anticipated crowding and had their expectations denied may have realized they were inappropriately withdrawn and readjusted themselves accordingly by increasing affiliative behaviors. They argue that responses to crowding can be seen as an optimization process, whereby people try to maintain a norm either by limiting access to themselves or by seeking access to others. These authors regard crowding as a stressful event that is ameliorated by appropriate responses. These responses, in part, involve coping strategies that adjust and readjust interpersonal relations.

A number of researchers have demonstrated that architectural design can affect people's quantity and quality of interactions. Reichner (1979), for instance, suggested that dormitories with long corridors, as opposed to suite-style dormitories, produce a

lot of unwanted social contact. As a result, one's number of interactions are harder to maintain in the former, which results in an over-stimulating environment. Suite-style dormitories, in contrast, provide residents with ample opportunity to regulate their social interactions.

An investigation into what effect these living conditions would have on individuals who were either being ignored or not ignored during a group discussion was carried out by Reichner (1979). He found that residents from long-corridor dormitories reported significantly less discomfort from being ignored than did residents in suite-style dormitories. When no one was ignored, the results were in the reverse direction as predicted.

Consistent with the social affiliation model and privacy regulation theory, Reichner (1979) concluded that subjects who resided in long-corridor dormitories had more than their desired level of social contact, hence did not mind being ignored. When not ignored, however, residents in long-corridor dormitories became uncomfortable because they were receiving too much social contact; therefore, they tried to regulate this by socially withdrawing to re-establish their ideal level of social contact. Reichner cautions that this may be maladaptive and have a high psychological cost to the individual.

In sum, although peoples behavior is substantially different from that of other animals, and generalizing from one to the other may lead to erroneous assumptions, some general principles obtained from the previously discussed studies of other animals appear to be relevant to human behavior as well. For instance, the hypothesis

that people may have a need for social contact in order to sustain some physical or psychological need appears viable given the studies previously cited. These findings, moreover, are generally consistent with both the social affiliation model and privacy regulation theory when these models make similar predictions (i.e., when there is a discrepancy between an individual's achieved and desired level of social contact). From a theoretical perspective, however, the relative merits of these two models have not been completely assessed when they make conflicting predictions (i.e., when an individual's achieved and desired level of social contact concur).

The contribution of the present study, therefore, was to provide a critical test of which framework, the social affiliation model or privacy regulation theory, better predicted affiliation motivation in everyday experiences when these views make contrasting predictions. These conflicting predictions are elaborated in the following section and subsequently tested.

The Present Study

The present research investigated affiliation motivation in everyday experiences using the Experience-Sampling Method (ESM; Larson & Csikszentmihalyi, 1983). This method sampled individuals' ongoing daily experiences by having them respond to a signal that was emitted from a small electronic device throughout the day (reviewed in Hormuth, 1986; Larson & Csikszentmihalyi, 1983). Because subjects were unaware when the signals were to be emitted and the technique pseudo-randomly signaled them, the resulting data were considered to be representative of

their day. Both the reliability and validity of this method, moreover, have been established (Csikszentmihalyi & Larson, 1987).

Once signalled, the subject filled out an Experience-Sampling Form (ESF) that contained specific questions about affiliative behavior. In the present research, the degree of social contact (e.g., alone or with people) and the subject's desire to be alone or not were the variables of interest. These variables were combined to form a "state" and were repeatedly measured to form a temporal sequence of responses.

A transition-frequency matrix was used to summarize the sequence of responses produced from the ESFs. More specifically, when the state at any one occasion, say state j, followed the state of the previous occasion, say state i, a transition occurred from state i to state j. This transition was recorded in the corresponding row i and column j of the transition-frequency matrix and represented an observed transition. For example, a subject beeped at any one occasion may be alone and want to be alone (state i); however, when next beeped he or she may be alone but want to be in social contact (state j). Thus, this transition would be indicated in the cell intersected by row i and column j (see $cell_{i,j}$, Table 1). This process was repeated until the last response from the ESFs was classified into the transition-frequency matrix. When adjacent responses are examined, this process is referred to as a lag 1. When responses two or three intervals apart are examined, it is referred to as a lag 2 and lag 3 process, respectively (etc.).

Table 1

Schematic Transition-Frequency Matrix

	Subsequent State								
Previous State	1	.	.	.	j	.	.	.	k
1	O_{11}				O_{1j}				O_{1k}
.									
.									
.									
i	O_{i1}				O_{ij}				O_{ik}
.									
.									
.									
k	O_{k1}				O_{kj}				O_{kk}

Note. O = observed transition frequency, i = response at the previous state, j = response at the subsequent state.

Lag 1 Hypotheses

Based on the social affiliation model, specific transitions are hypothesized to occur more or less frequently than expected by chance alone. Privacy regulation theory also hypothesizes specific transitions, yet these are different from the social affiliation model when the "state" from which the subject is making a transition is the same. More specifically, for the lag 1 transitions, the following are hypothesized:

Hypothesis 1. The social affiliation model hypothesizes that when individuals are completely alone and want to be alone at any one occasion, there will be a greater-than-chance occurrence that they will be also alone when next signalled (see $cell_{1,1+2+3}$,

Table 2). In this instance, individuals who are alone and want to be alone are hypothesized to be above their optimal range of social affiliation, as indicated by their need to be alone. Although already alone, in order to re-establish this range, subjects will be motivated to seek out solitude. Conversely, because individuals are motivated to be alone to re-establish their optimal range, there will be a less-than-chance occurrence that they will be with others when next signalled (see $cell_{1,4+5+6}$).

In contrast, privacy regulation theory predicts that a person who desires to be alone and is alone at any one occasion will begin to be motivated towards social contact. In other words, because individuals have achieved what they desire, they are at a momentary optimal level; from a dialectic perspective, therefore, individuals will be motivated towards the opposite state. This will be indicated when next signalled, as shown in Table 2, by a greater-than-chance occurrence of individuals who are in social contact (see $cell_{1,4+5+6}$). Additionally, because individuals are motivated towards others, there will be a less-than-chance occurrence that they will be alone at this next signal (see $cell_{1,1+2+3}$).

Hypothesis 2. From the perspective of the social affiliation model, given that individuals are affiliating and want to be in social contact at any one occasion, there will be a greater-than-chance occurrence that they will be affiliating when next signalled (see $cell_{2,4+5+6}$, Table 2). In this instance, it is argued that although individuals are in social contact, they still have not established their optimal range, as indicated by their need to be with others. This need for more social contact, therefore, will result in them being motivated to seek out other people at a later time at

Table 2

Hypothesized Transition-Frequency Matrix of Ongoing Affiliative Behavior

	Subsequent (Lag 1) State					
	Alone			Social Contact		
Previous State	1. Alone	2. Neutral	3. Social Contact	4. Alone	5. Neutral	6. Social Contact
1. Alone, Alone						
SAM	[	>	]	[	<	]
PRT	[	<	]	[	>	]
2. Social Contact, Social Contact						
SAM	[	<	]	[	>	]
PRT	[	>	]	[	<	]

Note. The column and row headings refer to subjects' objective and subjective situations when beeped. That is, (a) subjects were either alone or in social contact, and (b) subjects wanted to be either alone, were neutral with respect to being alone or with others, or wanted to be in social contact. The symbol in each cell indicates the hypothesized chance occurrence of that observed transition: greater than expected (>), or less than expected (<). Hypotheses of aggregated cells are enclosed within brackets. SAM = social affiliation model hypotheses, PRT = privacy regulation theory hypotheses.

greater-than-chance levels. Conversely, because these subjects are hypothesized to need others, there will be a less-than-chance occurrence of them being alone when next signalled (see $cell_{2,1+2+3}$).

On the other hand, privacy regulation theory predicts that if people are in social contact and want to be with others, they will be at a momentary optimal level, and thus, will be motivated towards the opposite state. Therefore, when next signalled there will be a greater-than-chance occurrence that they will be completely alone (see $cell_{2,1+2+3}$). In addition, because subjects are motivated away from social contact, there will be a less-than-chance occurrence that they will be in social contact (see $cell_{2,4+5+6}$).

Additional Hypotheses

From the perspective of privacy regulation theory, there are at least two possible explanations for a lack of support for the previously mentioned hypotheses derived from this model. These explanations, moreover, lead to additional hypotheses that were tested empirically to evaluate their relevance.

Explanation 1: Subjective situations. It can be argued that individuals may have been constrained to be in the same situation, and thus, may not have been able to make the hypothesized transition to the opposite state when next signalled. This argument weakens, however, when one considers that the mean interval between signals was approximately 60 minutes. This should have provided sufficient time for most individuals to regulate with whom they came into social contact. Individuals

who were unable to change their objective situation, moreover, were able to change their subjective situation.

To investigate this further, individuals' subjective situations were examined to determine if they had started to make the transition to the opposite state as hypothesized by privacy regulation theory. More specifically, from the perspective of this theory, individuals who do not make the hypothesized transition from being alone and wanting to be alone to the opposite state should, if still alone, (a) want to be in social contact at greater-than-chance levels, and (b) want to remain alone or feel neutral with respect to being alone at less-than-chance levels.

Additionally, individuals who do not make the hypothesized transition from being in social contact and wanting to be with others to the opposite state should, if still in social contact, (a) want to be alone at greater-than-chance levels, and (b) want to be in social contact or feel neutral with respect to being with others at less-than-chance levels.

Explanation 2: Lag analysis. The second potential explanation for a lack of support for privacy regulation theory is that an individual's momentary optimal level may have extended for a period longer than his or her average interval between signals. Thus, when the responses of two adjacent signals were examined an individual may have been still at his or her momentary optimal level and would not have made the hypothesized transition to the opposite state. This argument, however, may not be consistent with a dialectic view. From this perspective, a momentary optimal level is defined as both an end point and a starting point. By definition, if a

subject is at a momentary optimal level on one occasion, on a later occasion he or she should have at least started to move towards the opposite state, and thus, should no longer be at the momentary optimal level.

To address this issue, the data were analyzed 2, 3, and 4 lags apart. This provided an additional test of whether or not a transition occurred from the momentary optimal level to the opposite state as predicted by privacy regulation theory (see hypothesis 1 and hypothesis 2 for a review of these predictions).

If the social affiliation model is initially supported, the results of the lag analysis may be informative. That is, a similar pattern of results at the 2nd, 3rd, and 4th lags corresponding to those of the lag 1 analysis will suggest that this model can be generalized over a longer period.

Method

Subjects

Seventy students enrolled in a third-year social psychology course at the University of Victoria participated in this study to fulfil part of a course requirement. Students not wishing to participate were given the option of doing an equivalent amount of other class work. Three subjects were excluded from the analysis because they had incomplete data (the number of missing values for these subjects were two standard deviations greater than the sample's mean missing value). Another subject was omitted from the analysis because her mean interval between responses was one standard deviation greater than the group-mean interval.

The remaining 66 participants consisted of 19 males and 46 females (one subject did not indicate his or her gender on a background questionnaire). These subjects had a mean age of 22.8 years (SD = 3.9). Sixty-one percent of the participants were currently in an intimate relationship, 39% were not. Forty-seven percent lived with friends or acquaintances, 26% lived with family, 20% lived with a significant other (i.e., spouse, fiancé, girlfriend, or boyfriend), and 8% lived alone. Subjects who lived in a house comprised 49% of the sample, whereas 47% lived in an apartment, and 5% lived in university housing.

Materials

Beeper

Each subject carried a small electronic device that emitted a pseudo-random signal based on a sequence of timers. That is, the sequence produced a variable time interval between any one signal and a subsequent signal. For the entire sample, the mean interval between signals was 57.2 minutes (SD = 28.1). Subjects were assigned beepers that had one of two mean intervals between signals. Fifty-two subjects used beepers that had a mean interval of 54 minutes (SD = 27.2), whereas 14 subjects used beepers that had a mean interval of 73.3 minutes (SD = 26.9). The difference in mean interval between the two sets of beepers was due to their physical construction. The signal emitted from the device, furthermore, was adjustable to either a faint or loud beep.

Because the lag analysis investigated the pattern of transitions over a period of 2, 3, and 4 lags, the interval between subjects' responses needed to be similar for this analysis. Therefore, the data of only those subjects who used a beeper with a mean interval of 54 minutes were examined. However, the analyses of the subjective situations and 1st lag included the total sample.

Experience-Sampling Form (ESF)

The ESFs used in this study were modelled, in part, after questionnaires used by Larson and Csikszentmihalyi (1983), Constantian (1981), and Wheeler, Reis, and Nezlek (1983; see Appendix A for a sample copy). These forms were filled out by

subjects during waking hours in response to each signal. The order in which individuals filled out their forms was maintained to acquire a sample of their experiences over the period they participated in the study: from Monday afternoon to Thursday morning, or from Thursday afternoon to Monday morning. The subjects' self-reports formed a temporal ordering of information that started from the first signal they responded to and ended after their response to the last signal. On average, subjects filled out approximately 49 ESFs (SD = 11).

In the present study, subjects indicated their objective (e.g., alone or with others) and subjective situations (e.g., a desire to be alone or with others) on the ESF. The objective situation was measured by the response to the question, "Who were you with when beeped?" Subjects responded in one of three ways: completely alone (i.e., no one present and in communication with no one), alone but with other people present (i.e., no social contact), or with people (i.e., social contact). These responses represented the degree of social contact currently engaged in by the subject. Because the situation alone but with people present comprised elements of solitude and social contact, it was not used to test the previously stated hypotheses; therefore, in the present study, it was necessary to evaluate only the first and third of these responses (i.e., completely alone and social contact). The individual's subjective situation, on the other hand, was determined by the question, "Would you like to be alone right now?" Subjects responded to this question on a seven-point Likert scale. In the present research, the responses from this question were transformed into three categories: yes for 1, 2, or 3; neutral (i.e., no preference) for 4; and no for 5, 6, or 7.

This made the transition-frequency matrix smaller and more manageable and yet still retained the information of whether subjects' wanted to be alone, with others, or had no preference. Subjects responded to these two measures on approximately 96% of the ESFs.

These two questions formed a sequence of responses for each subject. Nine different states (i.e., a combination of the three objective and three subjective situations) comprised this sequence. This study, however, utilizes only six of these nine states. As previously mentioned, the hypotheses in this study do not consider the state "alone but with other people present".

Procedure

Prior to their participation, subjects were scheduled to meet with the researcher to discuss the study. During this talk, subjects were instructed on the use of the beeper. In addition, a sample ESF and a background questionnaire (see Appendix B) were reviewed in depth to familiarize the subjects with these items and to demonstrate how they were to be filled out. Items not examined in the present work were included with these measures for the purpose of obtaining a comprehensive data base for future research.

To insure consistency between subjects, all participants received a written set of instructions that reviewed all the main points discussed during the talk (listed in Appendix C). Subjects were encouraged to ask any questions about the beeper, ESF, or questionnaire and told that if they did not wish to continue in the study then or at

any time in the future, they could withdraw without penalty. None chose to withdraw. To assure confidentiality, subjects were assigned a code number, which was the only means of identification on returned forms. Before leaving the meeting subjects were given a consent form (see Appendix D), a beeper, ESFs, and the background questionnaire. The researcher's phone number was provided to subjects in case they had any questions or problems with the study.

Sequential Analysis

Subjects' data were organized into a transition-frequency matrix and analyzed. More specifically, the sequence of responses of each subject were added to the other subjects' sequences to form one continuous sequence (see Appendix E). The data were aggregated in this manner because it was each transition, across the whole sequence, that was of interest rather than each subject's sequence itself. The transition from a subject's last response to the adjacent subject's first response was not recorded in the matrix because this transition was an artificial one produced from combining the sequences.

The sequences of responses were analyzed following a technique developed by Wampold (Wampold, 1984, 1989, 1992; Wampold & Margolin, 1982). This technique makes use of the observed transition frequencies, variances of these frequencies, expected frequencies (i.e., those occurring by chance alone), and base-rate information. These parameters are used to identify nonrandom processes occurring in the data. The presence of a nonrandom process is determined by a test of state independence and by

the magnitude of the effect size. Wampold (1989) states that "the simplest evaluation of state independence is the determination of whether one state, say state j, follows another state, say state i, more or less often than would be expected by chance" (p. 173). If state independence is refuted, nonrandom occurrences in the data are implicated. Then, the directions of these dependencies are examined in order to determine if the hypotheses are initially supported or refuted.

To determine if the hypothesized dependencies are statistically significant (i.e., to test for state independence), z scores for each transition are calculated and compared to the normal curve. If the z scores are significant, the effect size, as measured by the transformed kappa (k′), is used to determine if the hypotheses are supported. This procedure is described by Wampold (1989):

> Transformed kappa ranges from -1.00 to 1.00. A transformed kappa of 1.00 indicates that the subsequent behavior followed the antecedent behavior to the maximum extent possible, a transformed kappa of -1.00 indicates that the subsequent behavior followed the antecedent behavior to the minimum extent possible, and a transformed kappa of zero indicates that the subsequent behavior followed the antecedent behavior no more or less than would be expected by chance. (p. 359)

Results

The raw data obtained for the present study are provided in Appendix F.

Lag 1

Hypothesis 1. Consistent with the social affiliation model, subjects who were completely alone and wanted to be alone at any one occasion had, when next signalled, (a) a greater-than-chance occurrence of being alone ($\underline{k}' = .44$, $\underline{p} < .01$; see $cell_{1,1+2+3}$, Table 3), and (b) a less-than-chance occurrence of being with others ($\underline{k}' = -.47$, $\underline{p} < .01$; $cell_{1,4+5+6}$). In contrast, privacy regulation theory was not supported. That is, subjects who were alone and wanted to be completely alone did not have a less-than-chance occurrence of being alone, or a greater-than-chance occurrence of being with others when next signalled.

Hypothesis 2. Once again the social affiliation model was supported. Subjects who were in social contact and wanted to be in social contact had, when next signalled, (a) a greater-than-chance occurrence of being in social contact again ($\underline{k}' = .43$, $\underline{p} < .01$; see $cell_{2,4+5+6}$, Table 3), and (b) a less-than-chance occurrence of being alone ($\underline{k}' = -.47$, $\underline{p} < .01$; $cell_{2,1+2+3}$). Privacy regulation theory, on the other hand, was not supported. Subjects who were in social contact and wanted to be in social contact did not make a transition to the opposite state, which was to be alone, nor were they less likely to remain in social contact.

These results replicated those of the pilot data (see Table G-1 in Appendix G).

Table 3

Transition-Frequency Matrix of Ongoing Affiliative Behavior

	Subsequent (Lag 1) State					
	Alone			Social Contact		
Previous State	1. Alone	2. Neutral	3. Social Contact	4. Alone	5. Neutral	6. Social Contact
1. Alone, Alone						
SAM	[	>	]	[	<	]
PRT		<			>	
Observed		574			211	
Expected		355.9			395.3	
k′		.44*			-.47*	
2. Social Contact, Social Contact						
SAM	[	<	]	[	>	]
PRT		>			<	
observed		237			745	
Expected		446.9			496.3	
k′		-.47*			.43*	

Note. The column and row headings refer to subjects' objective and subjective situations when beeped. That is, (a) subjects were either alone or in social contact, and (b) subjects wanted to be either alone, were neutral with respect to being alone or with others, or wanted to be in social contact. The symbol in each cell indicates the hypothesized chance occurrence of that observed transition: (a) greater than expected (>), this would be indicated by a positive k′, or (b) less than expected (<), this would be indicated by a negative k′. Hypotheses of aggregated cells are enclosed within brackets. SAM = social affiliation model hypotheses, PRT = privacy regulation theory hypotheses. *p < .01, one-tailed, given that the observed transitions are in the hypothesized direction.

Subjective Situations

Contrary to privacy regulation theory, subjects who were alone and wanted to be alone on any given occasion, and remained alone when next signalled, did not want to (a) be in social contact at greater-than-chance levels (see $cell_{1,3}$, Table 4), or (b) remain alone or feel neutral with respect to being alone at less-than-chance levels (see $cell_{1,1 \text{ and } 2}$). Similarly, subjects who wanted to be in social contact and remained in social contact from one signal to the next did not want to be (a) alone at greater-than-chance levels ($cell_{2,4}$), or (b) in social contact or feel neutral with respect to being with others at less-than-chance levels ($cell_{2,5 \text{ and } 6}$).

Lag Analysis

Counter to privacy regulation theory, the analysis of the 2nd, 3rd, and 4th lags indicated that subjects still did not make a transition from a momentary optimal level to the opposite state (see Table 5). Thus, these transitions did not differ in direction from the lag 1 transitions described in the Lag 1 results section and in Table 3.

Descriptive Statistics

In general, subjects were completely alone approximately 42% of the time and in social contact approximately 47% of the time. Their remaining time was spent in an intermediate stage, that is, alone but with others present. Additionally, subjects indicated a desire to be alone 43% of the time and to be with others 51% of the time. Subjects had no preference with respect to being alone or with others 6% of the time.

Table 4

Transitions to Specific Subjective Situations as Hypothesized by Privacy Regulation Theory

Previous State	Subsequent (Lag 1) State: Alone 1. Alone	2. Neutral	3. Social Contact	Social Contact 4. Alone	5. Neutral	6. Social Contact
1. Alone, Alone						
PRT	[<	<	>]			
Observed	469	23	82			
Expected	251.5	24.1	80.4			
k′	.36*	-.04	.01			
2. Social Contact, Social Contact						
PRT				[>	<	<]
observed				73	19	653
Expected				84	22.1	390.2
k′				-.13	-.14	.39*

Note. The column and row headings refer to subjects' objective and subjective situations when beeped. That is, (a) subjects were either alone or in social contact, and (b) subjects wanted to be either alone, were neutral with respect to being alone or with others, or wanted to be in social contact. The symbol in each cell indicates the hypothesized chance occurrence of that observed transition: (a) greater than expected (>), this would be indicated by a positive k′, or (b) less than expected (<), this would be indicated by a negative k′. Hypotheses of aggregated cells are enclosed within brackets. PRT = privacy regulation theory hypotheses. *$p < .01$, one-tailed, in the direction opposite to that predicted by PRT.

Table 5

Lag Analysis of Privacy Regulation Theory

	Lag X State					
	Alone			Social Contact		
Previous State	1. Alone	2. Neutral	3. Social Contact	4. Alone	5. Neutral	6. Social Contact
1. Alone, Alone PRT	[	<	]	[	>	]
k′ for:						
Lag X = 2		.28*			-.30*	
Lag X = 3		.18*			-.18*	
Lag X = 4		.17*			-.16*	
2. Social Contact, Social Contact PRT	[	>	]	[	<	]
k′ for:						
Lag X = 2		-.30*			.27*	
Lag X = 3		-.21*			.19*	
Lag X = 4		-.16*			.12*	

Note. The column and row headings refer to subjects' objective and subjective situations when beeped. That is, (a) subjects were either alone or in social contact, and (b) subjects wanted to be either alone, were neutral with respect to being alone or with others, or wanted to be in social contact. The symbol in each cell indicates the hypothesized chance occurrence of that observed transition: (a) greater than expected (>), this would be indicated by a positive k′, or (b) less than expected (<), this would be indicated by a negative k′. Hypotheses of aggregated cells are enclosed within brackets. PRT = privacy regulation theory hypotheses. *$p < .01$, one-tailed, in the direction opposite to that predicted by PRT.

In regards to the affiliative behaviors investigated in the present study, subjects were completely alone and wanted to be alone, and in social contact and wanted to be with others 29% and 37% of the time, respectively. In contrast, subjects were alone but wanted to be with others 9% of the time and in social contact but wanted to be alone 8% of the time. The remaining time was spent feeling neutral with respect to being alone or with others (5% of the time), or being alone but with other people present (12% of the time).

In sum, it appears that these subjects were generally successful in regulating their affiliative behaviors to match their desires.

Discussion

The sequential analysis of lag 1 supports the social affiliation model hypotheses but not those derived from privacy regulation theory. Of the two conceptualizations of affiliation motivation examined, the nonrandom patterns present in the data are consistent with a homeostatic process. Individuals who are in situations in which they want to be are likely to remain in these situations; this is consistent with the view that they may be trying to re-establish and maintain an optimal range of social affiliation. The data, however, are not consistent with privacy regulation theory. It appears that when individuals' objective and subjective situations correspond, they are not necessarily motivated towards the opposite state as predicted by this model.

A further shortcoming of privacy regulation theory is its failure to correctly hypothesize subjects' transitions from their momentary optimal level to specific subjective situations. Although subjects' subjective situations are free to change, it appears that subjects do not wish to make a transition to the opposite state. Thus, the explanation for the initial lack of support of this model, which is that subjects may be constrained to remain in the same situation from one signal to the next, is refuted by these data.

Similar to the analysis of the 1st lag and the pilot data, the findings of the 2nd, 3rd and 4th lags are inconsistent with privacy regulation theory. In fact, the transitions are significantly different from chance in the opposite direction to that hypothesized by this model. Thus, the lag analysis does not support the explanation previously discussed for the initial lack of support of privacy regulation theory, which

is that a subject's momentary optimal level extends for a longer period than the one under investigation. Although it is possible that the dialectic perspective of privacy regulation theory may be true over a longer period than investigated in the present study, it appears that this view does not adequately predict affiliation motivation over the short term. Thus, this theories ability to account for everyday affiliative experiences is questionable.

The lag analysis, on the other hand, extends the lag 1 results of the social affiliation model. That is, the transformed Kappas at lags 2, 3, and 4 are in the same direction as the corresponding transformed Kappas reported from the lag 1 analysis and, thus, are consistent with the chance levels predicted by the social affiliation model. Based on the lag analysis, it appears that individuals are motivated to regulate their affiliative behavior in a manner consistent with a homeostatic process over a period of at least four hours. The effect sizes of these transformed Kappas are also informative because of their decreasing trend from the 1st to the 4th lag. This suggests that as time passes individuals' affiliative behaviors are affected less by their earlier states.

The lag analysis also suggests that the dependencies in the data are not simply a result of an inappropriately short interval between subjects' responses, which could lead to the sampling of the same behavior. Rather, the period over which the transitions are analyzed should provide enough time for subjects to change their affiliative behavior if they so desire.

Although these data are consistent with the social affiliation model, several alternative explanations are plausible. For instance, the personality theory of affiliation motivation posits that some individuals have a high need for affiliation, and, therefore, have more need for social contact, find social contact more rewarding, maintain a lower threshold for entering into contact, and desire to stay in social contact longer than individuals who have lower affiliative needs (Atkinson, Heyns, & Veroff, 1954; Hill, 1991; Shipley & Veroff, 1952; Wong & Csikszentmihalyi, 1991). In the present study, subjects who were in social contact and wanted to be with others may have been more likely to have a high need for affiliation; thus, when next signalled they may have had a greater-than-chance occurrence of being in social contact. Likewise, subjects who were low in affiliative need may have been more likely to be alone and wanted to be alone. When next signalled these individuals may have had a greater-than-chance occurrence of being alone. One qualification to this explanation, however, is that in the present data no idiosyncratic patterns were observed in subjects' responses; thus, the frequency with which the majority of subjects made the transitions examined in the present study was approximately equal.

An additional explanation for a portion of these results is that subjects who responded that their achieved and desired levels of social contact concurred may have been trying to establish consistency between their actual level of social contact and their cognitions about whether or not they wanted to be alone or with others. This may have had the effect of increasing the frequency with which people were in

situations they wanted to be. On the other hand, this explanation does not address why subjects made transitions from one situation to another.

In general, one qualification of the results of the sequential analyses arises from the assumption of independence. If a subject's affiliative behavior on any one occasion affects his or her interactions on subsequent occasions, there are dependencies in the data. From a theoretical perspective, dependencies in the data are essential to both the social affiliation model and privacy regulation theory; otherwise, the data would be random. From a statistical perspective, on the other hand, independence is an assumption of the z test used in the sequential analysis. Wampold and Margolin (1982) argue that dependency is simply one nonrandom aspect of the data, and, therefore, is not an issue. The work of Bakeman and Dorval (1988) is consistent with this view. These researchers used Monte Carlo simulations of sequential data to demonstrate that violations of the independence assumption are negligible in the calculation of the z test.

Although the assumption of independence should not be completely disregarded, based on a number of researchers' suggestions, violations of this assumption are not expected to significantly alter the results. Moreover, the validity of the results is supported by analogous findings in the pilot data, which were obtained from a different sample. Further, the proportion of time spent alone or with others by this sample is similar to that reported by other researchers (e.g., Brown, 1992; Larson, Zuzanek, & Mannell, 1985; McAdams & Constantian, 1983).

Directions for Future Research

Although a number of prominent psychologists have published work pertaining to the need for affiliation (e.g., Altman, 1975; Harlow, 1959; Latané & Werner, 1978; Schachter, 1959), there has been very little follow-up to this research. The present study addresses this lack of attention by focusing on two testable models of affiliation motivation, and improving on the methodology to test them in everyday life. The support for one of these views, the social affiliation model, has several implications for future research.

Because the present study examines only those predictions of the social affiliation model that conflict with privacy regulation theory, one direction for future research into the social affiliation model is to test additional theoretical predictions postulated by this model (e.g., when a subject is alone but wants to be with others; see Appendix H). Another direction is to advance the exploratory analysis used in the present study. One useful way to proceed with this may be to examine the literature on discrete-time, discrete-state-space markov-chain analysis. This technique may enable the researcher to model an individual's transitions from one state to successive states. It may also be worthwhile to use a bivariate discrete-time, discrete-state-space markov-chain analysis. With this technique, one could analyze a subject's objective and subjective states over time by modelling each of these situations separately.

Future research into the social affiliation model may also increase our understanding of the psychological experiences of crowding and loneliness. Within this framework, these experiences can be regarded as excessive deviations from one's

optimal range of affiliation. A comprehensive understanding of this optimal range and what can affect it may enable one to counter these negative experiences. This would have implications for people who frequently experience these states, such as adolescents and older adults (e.g., Larson & Csikszentmihalyi, 1990; Larson et al., 1985); people confined to hospitals, prisons, etc. (e.g., Cox, Paulus, & McCain, 1984; Holland et al., 1977; Wener & Keys, 1988); and individuals living in high social-density housing (e.g., Evans, Palsane, Lepore, & Martin, 1989; Liddell & Kruger, 1989; Reichner, 1979).

Whether or not affiliation motivation is truly a homeostatic process can only be determined by further investigation. Subsequent research on affiliation motivation may provide additional support for the social affiliation model or, conversely, indicate the inadequacies of this model so that a better and more comprehensive theory of affiliation motivation can be formulated.

Conclusion

These results challenge the view that everyday-affiliation motivation operates according to a dialectic concept. Rather, the results suggest that the social affiliation model is a viable alternative explanation of affiliation motivation that should be further explored in subsequent research. Methodologically, the ESM appears to be a useful technique to sample affiliative behavior in everyday life. The data derived from this technique are encouraging in that nonrandom patterns are evident in a transition-frequency matrix. These patterns are consistent with a homeostatic view of affiliation

motivation. This view provides both theoretical and empirical organization to the literature cited in the present study and, thus, may be beneficial to future research into affiliation motivation.

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Appendix A

Experience-Sampling Form (ESF)

Note. Actual size was reduced to fit on a 8 by 13 cm piece of paper.

Date: Time Beeped: am/pm Time Now: am/pm

Would you like to be alone right now? YES O O o ◦ o O O NO

Who were you with when beeped?

[ ] completely alone (no one else present, in communication with no one).

[ ] alone but with other people present (no social contact).

[ ] with people (social contact).

[ ] best friend(s) [ ] parent(s) [ ] son/daughter

[ ] friend(s) [ ] sibling(s) [ ] co-worker(s)

[ ] acquaintance(s) [ ] spouse [ ] in class

[ ] girl/boyfriend [ ] fiancé [ ] male [ ] female

[ ] other (please specify)_____ Age(s)___

How many?_____

Intimacy: superficial O O o ◦ o O O meaningful

Quality: unpleasant O O o ◦ o O O pleasant

Satisfaction: less O O o ◦ o O O more than expected

Initiation: I initiated O O o ◦ o O O other initiated

(Appendix A, continued)

What best describes your situation:

cheerful	O	O	o	◦	o	O	O	depressed
open	O	O	o	◦	o	O	O	closed
involved	O	O	o	◦	o	O	O	withdrawn
lonely	O	O	o	◦	o	O	O	sociable
happy	O	O	o	◦	o	O	O	unhappy
stressed	O	O	o	◦	o	O	O	relaxed
bored	O	O	o	◦	o	O	O	occupied
content	O	O	o	◦	o	O	O	angry

What is the MAIN thing you are doing right now?

[ ] commuting	[ ] on phone	[ ] sitting/waiting
[ ] dressing	[ ] personal care	[ ] socializing/talking
[ ] eat/drink	[ ] playing games	[ ] thinking
[ ] entertaining	[ ] prepare food	[ ] visiting
[ ] exercising	[ ] reading	[ ] walking
[ ] housework	[ ] resting/relaxing	[ ] watching TV
[ ] listen/music	[ ] romantic/sexual beh.	[ ] writing/letter
[ ] nothing	[ ] shopping	Other?_____

Where are you?

[ ] bathroom	[ ] dining room	[ ] kitchen	[ ] mall/store
[ ] bedroom	[ ] dorm room	[ ] library	[ ] outside
[ ] cafeteria	[ ] gym	[ ] living room	[ ] restaurant

(Appendix A, continued)

[ ] campus [ ] hallway [ ] lounge/pub [ ] vehicle

[ ] classroom [ ] house/home Other?_____

What are you thinking about?

Appendix B

Background Questionnaire

Please answer each question as carefully and accurately as you can using the space provided. You are reminded that your name and student number will not be associated with the following questionnaire or any of your data records. If any of the questions below make you feel uncomfortable, you are under no obligation to answer them. If this is the case, please indicate by checking the box below* to insure that marks will not be deducted from the assignment grade because of an incomplete form, otherwise proceed with the questionnaire.

[ ]* I am uncomfortable with part of the questionnaire, therefore all or part of it remains unanswered.

CODE # _____ **SEX** ___ **AGE** ___

How many months out of the year do you live in Victoria?____

Where do you consider your home to be (be specific)?

Is there any other place you consider home? Explain.

In what type of accommodation do you live?

[ ] apartment [ ] house [ ] other (please explain)

[ ] residence [ ] suite _____

(Appendix B, continued)

How many people live with you? _____ What is their relationship to you? Be specific (see ESF for examples).

Are you currently in a relationship (please specify)?

If so, does he/she live in the Victoria area? _____ How often do you see her/him over a typical week (i.e., approximate hours)? _____ How often do you speak to him/her on the phone over a typical week? _____

Do you have any pets (please specify)? _____ Do you consider your pet(s) to provide you with <u>significant</u> companionship?

Appendix C

Instructions to Subjects

Affiliation motivation involves both the need to seek out others and the need to seek out solitude to re-establish and maintain an optimal level of contact. More specifically, a person's level of affiliation fluctuates around this level (or a homeostatic point) such that if the person experiences more contact than needed, he or she will seek out solitude so that this level can be re-established and maintained. Likewise, if a person experiences more solitude than needed, he or she will seek out others so that an optimal level of affiliation can be re-established and maintained. The use of the term "seek out" may involve both a conscious or unconscious decision to re-establish and maintain an optimal level of affiliation.

The purpose of this study is to investigate both the quantity and quality of social contact and private time an individual has throughout the day. You will be scheduled to carry an electronic beeper that emits a pseudo-randomized signal. A short form is to be filled out when you are beeped. The length of the scheduled time will be either a Monday afternoon through to a Thursday morning **or** a Thursday afternoon through to a Monday morning. Beepers and beep sheets (i.e., forms) can be picked up immediately after class on the day you are scheduled. You must make an appointment with Shawn (rm. A061) for a "pre-lab" talk before your scheduled time slot if you missed the lecture that discussed the assignment. This talk will take approximately fifteen minutes. During the talk you will be instructed on how to

(Appendix C, continued)

use the beeper and on how to fill out the beep sheet (your data record) upon being signalled.

Beepers **must** be returned before class on the scheduled return day (preferably before noon). The beepers can be returned to either Dr. Rosenblood in A255 **or** Shawn in A061. If neither of us are available, the beepers can be returned to Dr. Rosenblood's mailbox in the Psychology Department's main office.

You are to complete the investigation as outlined in class and in the attached notes. The assignment due date will be the class following the return of the beeper.
* You will be assigned a code number which will be used to identify your assignment. Your name and student number are not to be written on the assignment. This is to insure you confidentiality.

Instructions on how to fill out the Experience Sampling Form (ESF).

It is very important that you fill out the relevant information on each form. If there are omissions on the forms that are not documented as to why they are incomplete, marks will be deducted from the assignment grade.
A beeper, watch, pen, and an appropriate number of ESFs forms should be carried with you throughout the scheduled period.

(Appendix C, continued)

The beeper number should be recorded on the first code sheet in the top right hand corner.

Date: The date should be recorded on each form (e.g., 25 April).

Time Beeped: Record the time beeped to the closest minute.

Time Now: Record the time the form is filled out.

Forms are to be filled out throughout your waking hours. Try to fill out the form as soon as you are beeped. If it is not possible to do this, fill out the form as soon as you can. No matter when the form is filled out, it should represent the situation you were in when beeped. The reasons for a large discrepancy between the Time Beeped and the Time Now should be documented on the form (i.e., if more than 5 minutes). Prior studies indicate that these discrepancies should occur infrequently if at all.

An additional form should be filled out when you get out of bed each morning. This form should indicate the approximate hours slept (write this information on the form) and whether or not you were alone (i.e., fill out the top part of the form).

(Appendix C, continued)

If you feel the latter is too personal and are uncomfortable with it, omit this part on all your forms.

If you thought you heard the beeper but are not sure, fill out a form to be safe (note: two beeps will not occur within 20 minutes of each other). If you have not heard the beeper for awhile, consider turning the volume switch to high. If you do not hear it within a one-and-a-half to a two-hour period, you have probably missed a beep. You should make a note of this on one of the forms as well as any possible reasons why you might have missed it (e.g., you might have been in a very loud room). If this occurs, pay extra attention to the beeper so that a second beep will not be missed. If you think the beeper is malfunctioning, phone Shawn at either 721-7543 (o) or 595-2096 (h, leave message). Shawn's office is CORN A061.

Would you like to be alone right now?

Mark one of the circles along the scale from YES to NO. Refrain from marking the neutral point, without first thinking about the question, unless you honestly do not care if you are alone or with people.

(Appendix C, continued)

Who were you with when beeped?

Mark the best categories that describe your situation.

Example of being alone but with other people present: In a mall or cafeteria where there are people around you, but you are by yourself.

Examples of being with people (social contact): You and your friend are walking through a mall; you are making something to eat in the kitchen, and your brother is reading the paper at the kitchen table. Being with people in a social contact situation may or may not involve direct conversation.

The scales involving intimacy, quality, satisfaction, and initiation are to be filled out only when you are with people. Place a mark through the circle that best describes the relationship at the time of the beep.

The next set of scales should be answered for each beep (cheerful - depressed through to content - angry). Place a mark through the appropriate circle that best describes the way you felt when beeped.

What is the MAIN thing you are doing right now?

Place a mark in the appropriate box or fill in Other. If you respond with other, try to use a general name to describe the thing you are doing (if possible).

(Appendix C, continued)

Where are you?

Place a mark in the appropriate box or fill in Other.

What are you thinking about?

Keep your responses to this question short. Try to use general categories to describe your thoughts.

Examples: homework, what my friends and I will do tonight, romantic/sexual behavior, etc.

The forms for each day must be stapled together at the top left hand corner. The assignment (including the forms) must be placed in a 9 X 12 envelope (this envelope is supplied). The outside of the envelope should have your code # on it.

*** If at any time you are uncomfortable about filling out part of a form, mark personal or private in the appropriate place.**

Appendix D

Statement of Intent

****To be read by each subject****

The purpose of this study is to investigate both the quantity and quality of social contact and private time an individual has and the physical environments where these occur.

Experience Sampling Method (ESM):

You will be asked to carry an electronic beeper that emits a randomized signal approximately every 45 minutes. When you hear the signal you will be asked to record what you are doing. If you are not alone, you will be asked to record the gender(s), approximate age(s), and relationship to you of any person(s) present.

If at any time you are uncomfortable in continuing the research, you will be under no obligation to do so. No pressure will be exerted on you to convince you to continue or to question you about your reasons for withdrawing. Your participation is completely voluntary.

CONSENT

I certify that I have read and fully understood the above statement and that my participation in this research is completely voluntary.

_____ _____

Date Signature

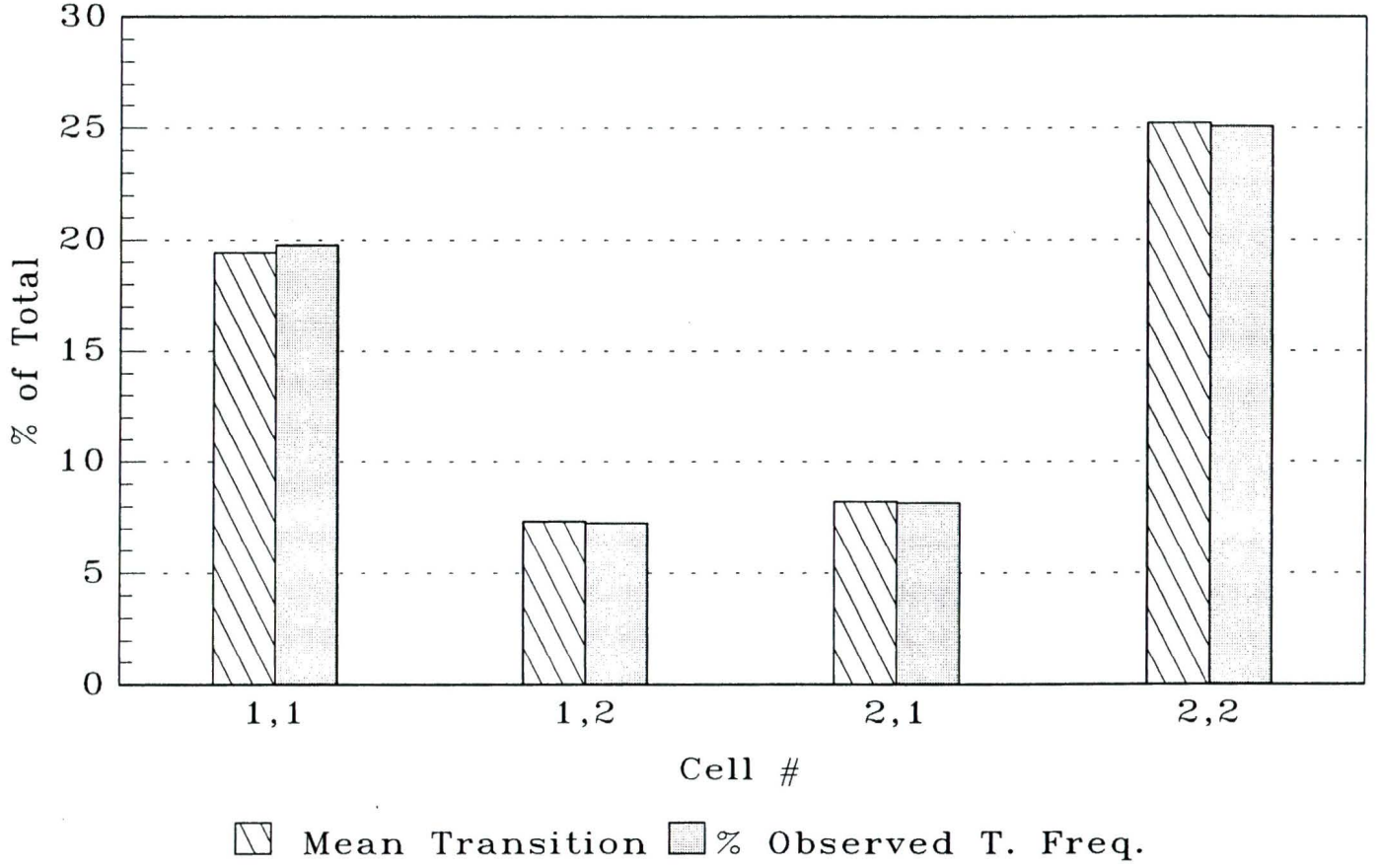
Appendix E

Homogeneity of Responses

When the data of different subjects are combined together for analyses it is assumed that their responses are homogeneous. This assumption is similar to those of other techniques, for example, repeated-measure ANOVA, in which an individual's data are only one piece of the larger data set. One approach that can be used to demonstrate this involves calculating the sample's mean transition for each cell of the transition-frequency matrix. These means are a reflection of subjects' average responses and will be compared graphically to the corresponding observed transition frequencies. The observed transition frequencies are the accumulated responses of all subjects and may reflect idiosyncratic patterns. A similar pattern between these two values supports the hypothesis that subjects' responses are homogeneous (i.e., not idiosyncratic); that is, the responses of no one subject contributed excessively to the observed transition frequencies of any given cell.

As can be seen in Figure E-1, the responses of subjects in the present study appear to be homogeneous. The sample's mean number of transitions for each cell and the corresponding observed transition frequency for these cells follow a similar pattern. This pattern is consistent with that of the pilot data.

Figure E-1. The homogeneity of subjects' responses: A comparison of group mean transitions to observed-transition frequencies.



Note. Cell # refers to row (i) and column (j) in Table 3. % Observed T. Freq = % observed transition frequency

Appendix F

Raw Data

Explanation of Variable Names and Codes:

id - subject's identification number.

sx - gender of subject: coded 1 for male, 2 for female, and ? for missing.

ag - age of subject.

ac - subject's type of accommodation: coded 1 for apartment, 2 for university housing, 3 for house, 4 for suite, and 5 for town house; Codes 1, 4, and 5 were combined for descriptive purposes.

ra - relationship status of others sharing the accommodation: coded 1 for friends or acquaintances, 2 for significant other (e.g., spouse, girlfriend, or boyfriend), 3 for family, and 4 for alone.

rs - relationship status: coded 0 for same-sex partner, 1 for single, 2 for married, 3 for boyfriend or girlfriend, and 4 for fiancé.

mt - subject's starting day: coded 1 for Monday and 2 for Thursday.

be - subject's beeper number: coded 1, 2, and 11 for beepers that had a long interval between signals (approximately 73 minutes); 4, 5, 6, 7, 8, 9, and 10 for beepers that had a shorter interval (approximately 54 minutes).

nu - number of signals responded to by the subject.

o1 to o80 - subject's response to the question, "Who were you with when beeped?": coded 1 for completely alone, 2 for alone but with other people present, and 3 for with people (social contact).

s1 to s80 - subject's response to the question, "Would you like to be alone right now?": coded 1, 2, and 3 for yes; 4 for no preference; and 5, 6, and 7 for no.

Raw Data

The raw data are listed on subsequent pages. The first row of these pages contains the variable name; the first column contains the subject identification number.

id	sx	ag	ac	ra	rs	mtbe	nu	o1	s1	o2	s2	o3	s3	o4	s4	o5	s5	o6	s6	o7	s7	o8	s8	o9	s9	o10	s10	o11	s11	o12	s12	o13
80	2	23	1	1	1	2	7	59	3	3	2	2	2	2	3	7	3	1	3	1	3	6	1	1	1	1	3	7	1	1	1	1
88	2	21	3	3	3	2	8	66	3	7	3	7	3	7	1	7	3	7	3	7	3	7	3	7	3	7	3	7	1	1	1	1
87	1	20	3	2	4	2	6	48	3	6	3	3	2	6	3	3	3	7	3	6	3	6	3	7	2	1	3	4	3	5	3	2	1
55	1	21	3	3	3	2	1	43	3	7	1	1	3	6	3	6	3	6	1	2	1	2	1	0	1	2	1	2	1	2	1	2	1
86	2	21	3	3	3	2	7	45	2	5	3	7	1	0	3	6	3	7	3	7	3	6	2	7	3	7	3	7	3	7	3	2	1
7	2	25	1	2	2	2	8	64	1	4	1	4	1	4	3	6	3	7	3	6	1	3	3	1	1	4	1	3	3	7	3	0	3
34	1	20	5	1	3	2	99	54	3	6	1	6	1	5	1	6	1	5	3	7	3	7	3	6	1	1	1	1	1	4	3	0	1
18	2	22	4	1	1	2	2	44	1	1	1	1	1	4	3	7	1	1	2	0	2	7	1	1	3	7	3	6	2	6	3	4	1
39	2	19	1	3	1	1	11	34	2	1	3	7	3	7	3	6	3	7	1	1	1	1	1	1	1	1	3	7	3	7	1	1	3
70	2	20	3	3	1	1	5	57	3	7	1	1	3	1	1	1	1	3	1	0	1	0	2	7	1	1	1	1	2	1	2	0	3
56	2	19	2	1	3	1	99	42	1	3	1	3	2	4	3	6	3	6	1	3	3	5	1	3	1	1	1	1	2	5	3	6	3
59	2	21	3	1	1	1	99	49	3	6	3	6	3	6	3	6	3	6	3	6	3	7	3	0	3	5	3	6	3	6	3	6	3
32	2	21	3	1	3	1	99	41	3	7	3	7	3	7	3	6	3	7	2	1	3	0	3	7	3	7	3	7	1	1	1	1	3
89	2	27	1	1	1	1	9	51	2	1	1	5	3	5	3	7	3	7	3	4	3	7	3	7	3	7	3	1	3	4	3	1	2
14	2	20	2	4	3	1	7	51	3	7	3	6	1	0	3	7	3	7	3	6	1	2	3	5	1	2	1	1	2	6	2	6	2
61	2	23	3	1	3	1	2	39	1	2	2	4	1	3	2	6	3	6	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1
8	2	23	2	1	3	2	5	68	2	5	1	5	3	7	1	3	1	3	1	3	1	3	1	2	1	3	1	5	1	2	1	3	1
35	1	24	3	1	1	1	1	37	3	7	2	5	1	1	1	7	1	7	1	1	1	7	2	7	2	7	2	6	1	6	2	6	1
76	2	21	3	1	3	1	3	37	1	2	1	4	1	5	1	5	1	5	1	5	1	6	3	7	2	5	3	6	2	5	2	5	1
82	1	25	3	3	3	1	99	41	2	6	2	7	2	2	3	6	3	6	3	7	3	7	3	7	3	7	3	5	3	6	1	2	2
20	2	22	1	1	1	2	99	48	3	6	3	7	3	5	3	6	3	6	1	2	1	1	1	1	1	3	1	4	3	4	3	4	3
5	1	25	1	2	2	1	99	48	3	6	3	1	3	6	3	6	2	2	3	6	3	7	3	6	3	6	1	1	3	1	3	6	3
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37	1	21	3	1	3	1	1	24	3	7	3	7	3	7	1	0	1	0	1	4	1	2	1	2	3	7	1	1	3	3	3	5	3
74	1	21	3	3	1	2	4	44	1	3	1	3	1	5	3	6	3	5	3	6	1	2	2	2	2	3	2	5	1	6	1	6	3
67	1	22	3	3	0	1	5	53	1	2	2	4	3	7	1	1	3	7	1	4	3	4	1	4	1	3	1	1	1	1	1	1	3
10	2	22	1	2	4	1	99	48	1	1	1	1	1	2	3	4	1	3	1	4	1	4	1	4	3	7	3	7	3	7	3	6	1
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72	2	24	4	2	3	2	2	51	3	5	3	7	3	7	1	4	2	4	3	4	3	7	3	7	1	1	1	1	1	3	1	7	2
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83	2	22	1	2	3	2	11	41	3	1	3	5	3	6	3	6	3	7	3	7	3	7	1	1	1	1	1	1	2	6	1	1	3
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id	sx	ag	ac	ra	rs	mtbe	nu	o1	s1	o2	s2	o3	s3	o4	s4	o5	s5	o6	s6	o7	s7	o8	s8	o9	s9	o10	s10	o11	s11	o12	s12	o13
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14	3	7	1	1	1	2	1	5	2	6	1	2	1	3	2	6	1	2	1	6	3	6	3	5	3	2	1	5	1	2	1
61	3	5	3	0	3	6	2	4	1	4	1	3	1	2	1	2	1	3	3	6	3	6									
8	3	6	1	2	1	5	1	5	3	6	3	6	1	2	1	3	1	5	3	2	1	3	1	6	3	7	3	7	1	2	1
35	1	1	1	1	1	1	1	1	1	7	1	1	1	1	2	1	2	7													
76	1	4	1	4	1	4	2	3	1	3	1	4	3	5	3	6	2	5													
82	1	2	1	1	2	2	3	0	3	7	2	0	3	1	3	7	2	7	3	1	3	7	2	7	2	1					
20	1	4	3	6	3	4	1	6	3	6	3	6	3	6	1	6	1	0	1	5	3	5	3	7	3	7	1	3	1	0	1
5	2	6	2	2	2	3	1	2	2	2	1	6	3	5	2	2	2	1	1	2	3	6	3	6	3	7	3	6	3	6	3
24	3	3	3	6	1	1	3	7	3	7	1	1	2	4	3	0	1	1	1	1	3	7	3	7	3	7	1	1			
37																															
74	3	2	3	6	3	3	2	5	3	3	1	3	1	5	1	0	1	6	3	6	3	7	3	0	3	5	3	7	1	7	1
67	1	3	1	1	1	1	1	1	1	1	3	7	2	1	3	7	2	7	2	6	2	6	3	7	2	5	1	1	3	0	3
10	3	7	3	7	1	5	1	7	2	6	1	2	1	1	1	5	1	6	1	7	1	7	3	7	3	7	3	0	3	7	3
22	1	1	1	2	2	3	3	2	1	3																					
72	1	0	1	3	1	3	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3	2	3	5	1	2	1	2	1	2	3
52	1	2	3	0	3	6	3	7	1	2	1	2	1	3	1	2	1	6	1	6	3	6	3	6							
83	3	6	3	6	3	1	2	1	3	1	2	1	2	1	3	7	3	0	3	1	3	1	1	1	3	7					
4	1	2	1	1	1	1	3	6	1	2	3	5	3	6	3	7	3	3	3	6	3	6	3	6	1	1	3	7	1	1	1
62																															

id	o29	s29	o30	s30	o31	s31	o32	s32	o33	s33	o34	s34	o35	s35	o36	s36	o37	s37	o38	s38	o39	s39	o40	s40	o41	s41	o42	s42	o43	s43	o44
41	1	4	1	0	3	7	2	7	3	6	1	2	3	0	3	7	3	7	3	7	3	7	1	1	1	1	3	1	1	1	1
38	3	7	3	1	3	2	1	1	1	1	1	1	3	7	1	1	1	1	3	1	3	7	3	7	3	7	3	7	1	1	1
42	1	1	1	1	1	1	3	7	3	7	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
78	3	7	3	7	3	7	3	7	1	2	1	5	2	7	1	2	3	7	1	2	3	5	2	5	3	7	3	0	3	7	1
64	1	1	1	1	1	1	1	6	1	7	1	7	1	2	1	7	1	7	1	7	1	1	1	7	3	7	3	7	3	7	3
66	3	7	2	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	1	7	1	4	1	4	3	7	2	3	1
2	3	1	1	7	1	3	1	3	3	7	3	6	3	7	3	7	3	7	3	7	3	7	3	7	3	7	1	7	3	7	1
28	3	1	3	1	3	1	3	1	3	0	1	7	3	1	3	7	3	0	3	1	3	0	3	0	3	7	3	7	3	7	3
99	2	2	2	1	2	7	2	0	3	3	3	7	3	7	3	7	3	7													
68	3	7	1	7	3	7	1	1	3	7	1	7	3	7	3	7	2	7	1	1	1	7	3	0	2	7	3	7	3	7	3
11	3	7	1	6	1	7	1	7	3	7	3	5	3	5																	
25	2	1	1	1	1	1	3	7	2	7	3	7	3	7	3	1	3	1	3	7	3	7	3	7	3	7	3	0	3	7	3
81	1	5	1	3	1	7	1	7	1	6	1	4	1	5	1	3	1	4	1	5	1	5	1	3	3	0	1	5	3	3	1
53	3	6	3	6	3	6	1	2	1	6	1	6	3	6	2	6	3	7	3	7	1	6	1	2	1	6	1	2	1	3	3
73	1	2	3	1	3	3	3	6	1	2	1	2	1	1	3	5	1	6	1	1	3	6	1	1	1	1	1	1	1	1	1
57	1	3	2	4	2	3	1	2	1	2	3	2	3	7	1	2	1	1	1	3	1	1	1	2	1	3					
9	1	6	1	1	3	1	3	1	1	6	1	0	1	7	1	7	1	7	1	7	1	6									
13	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1	2	1	5									
21	2	4	1	2	1	1	1	2	3	4	2	2	2	1	2	1	2	1	3	0	3	7	3	7	3	7	3	7	3	7	2
65	1	6	3	6	3	0	1	5	1	2	3	5	3	6	2	6	3	7	3	0	3	7	3	6	2	6	3	6	1	2	1
85	3	7	3	7	3	7	1	1	1	1	1	1	3	1	1	2	1	1	3	6	3	6	3	6	3	6	3	6	3	7	3
17	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3
71	1	6	1	3	1	6	1	6	3	6	2	6	2	0	3	3	3	5	1	5	1	0	1	5	3	6					
3	1	7	1	1	1	1	2	7	1	1	1	1	1	1	1	1	1	1	1	1	3	7	1	1	3	1	3	5	1	1	1
31	1	1	1	0	1	2	1	2	1	2	1	1	1	1	1	2	1	2	1	7	3	7	3	7	3	7	2	4	2	7	3
79	1	0	1	1	3	0	1	1	1	1	1	1	1	1	3	4	3	4	3	1	1	4	3	7	1	4	1	4			
16	2	5	1	7	3	6	1	1	1	1	1	2	1	6	3	6	3	5	3	2	1	2	1	2	1	3	3	0	1	2	1
60	1	1	1	1	3	7	3	6	3	7	3	7	3	3	3	1	3	6	3	7	3	7	3	6	3	0	3	7	3	7	3
46	1	1	3	6	3	6	2	6	2	5	3	7																			
29	3	5	1	5	2	0	1	3	3	0	1	1	3	5	3	6	1	2	1	2	1	2	1	2	1	2	1	0	3	3	2
58	2	5	3	5	3	5	1	1	2	2	3	6	2	5																	
43	1	1	3	1	3	1	3	7	3	7	3	7	3	7	3	7	1	1	1	1	3	1	3	1	3	1	3	1	3	1	3
69	2	3	1	2	1	2	2	3	1	2	3	2	3	3	3	6	3	7	3	1	3	2	2	1	3	7	3	3	1	2	1

id	s44	o45	s45	o46	s46	o47	s47	o48	s48	o49	s49	o50	s50	o51	s51	o52	s52	o53	s53	o54	s54	o55	s55	o56	s56	o57	s57	o58	s58	o59	s59
80	7	3	0	3	7	1	1	1	1	3	7	3	7	1	0	1	1	2	1	2	6	3	5	3	7	3	3	3	6	2	1
88	7	3	7	3	7	1	3	3	5	1	3	1	2	1	1	2	2	1	2	1	1	1	1	1	3	3	4	1	1	1	1
87	3	3	7	1	1	1	1	1	2																						
55																															
86	6	3	3																												
7	6	3	0	1	2	1	2	3	6	3	6	3	5	3	6	3	5	3	5	3	5	3	1	3	2	3	5	3	6	3	5
34	7	3	6	3	6	3	6	3	6	3	5	1	1	1	1	1	5	1	3	1	5										
18	1																														
39																															
70	7	1	1	2	7	2	7	2	7	3	1	1	1	1	0	1	7	2	7	2	7	3	7	2	4	2	1				
56																															
59	7	3	7	3	7	3	6	1	2	3	6																				
32																															
89	1	1	1	1	1	1	1	1	1	3	7	3	7	3	7																
14	1	1	2	3	5	3	5	3	6	1	4	1	5	1	3																
61																															
8	2	1	2	1	3	1	2	1	2	1	2	1	6	1	6	2	5	1	3	1	5	1	6	3	6	3	5	3	6	3	5
35																															
76																															
82																															
20	0	3	7	3	6	1	0	1	6																						
5	6	2	3	2	6	2	2	1	2																						
24																															
37																															
74	2																														
67	7	1	4	1	1	1	1	1	1	1	1	1	1	1	1	3	5	3	6												
10	7	3	7	2	7	2	7	2	5																						
22																															
72	0	3	3	1	2	1	1	2	5	3	7	3	7	3	7																
52																															
83																															
4	1	1	1	1	1	1	1	1	2	3	0	3	6	3	5																
62																															

id	s44	o45	s45	o46	s46	o47	s47	o48	s48	o49	s49	o50	s50	o51	s51	o52	s52	o53	s53	o54	s54	o55	s55	o56	s56	o57	s57	o58	s58	o59	s59
41	1	1	1	1	7	1	4	3	7	3	7	3	7	3	7	3	7	1	7	3	7										
38	1	3	7	3	7	1	7	1	1																						
42	1	1	1	1	1	1	1	1	1	3	7	3	0	1	1	1	1	3	7	1	1	1	1	1	1	1	1	1	1	3	7
78	1	1	1	1	2	3	7	1	2	3	7	3	7	3	7	3	7	1	2	3	5	3	7	3	6						
64	7	3	7	3	6	3	6	1	7	1	1	1	1	1	7	1	1	1	1	1	7	2	1	2	1	1	1	3	7	2	0
66	6	1	7	1	1	1	1	1	2	1	1																				
2	7	1	2	1	3	1	1	1	3	3	7	3	1	1	7	1	3	1	3	3	5	3	5	3	6	1	3	3	7	1	2
28	7	1	1	3	1	3	0	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	7	1	7	1	7	1	4	2	7
99																															
68	7	3	7	2	7	2	7																								
11																															
25	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	1	3	7	3	7	3	7	3	7	3	7	1	1	1	1
81	2	1	3	1	2																										
53	7	3	7	3	6	3	6	3	5	3	6	3	5	1	2																
73	3	1	3	1	3	1	2	1	2	3	6	3	6																		
57																															
9																															
13																															
21	7	3	4	2	2	3	6	3	7	3	7	3	7	3	7	2	7														
65	6																														
85	7	1	2																												
17	7	3	7	3	7	3	7	3	7	3	7	3	0	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7	3	7
71																															
3	1	3	1	3	7	1	1	1	1	3	7	3	7	3	7	3	7	3	7	2	0	2	7	3	7	2	7	1	0	1	7
31	6	1	6	1	7	1	7	3	7	3	7	3	7	3	4	2	0	3	7	2	4	1	0	2	7	2	7	2	7	3	1
79																															
16	7	1	6	1	5	1	2	1	2	1	1	3	6	1	3	1	2	1	5	1	3	1	5	1	7	3	5	2	6	1	2
60	7	3	3	1	1	3	4	3	4																						
46																															
29	5	2	5	3	5	3	5	3	6	3	5	3	5	3	3	1	2	1	2												
58																															
43	1	2	1	2	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1
69	1	1	1	1	1	1	2	1	0	1	2	1	1	3	1	3	1	3	1	2	0	3	1	2	1	3	1	1	1	2	0

id	o60	s60	o61	s61	o62	s62	o63	s63	o64	s64	o65	s65	o66	s66	o67	s67	o68	s68	o69	s69	o70	s70	o71	s71	o72	s72	o73	s73	o74	s74	o75
80																															
88	3	2	1	2	2	7	1	1	1	2	1	1	1	1																	
87																															
55																															
86																															
7	3	5	3	3	3	2	3	6	1	4																					
34																															
18																															
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56																															
59																															
32																															
89																															
14																															
61																															
8	1	3	1	2	1	6	1	3	1	3	1	3	1	2	1	3	3	6													
35																															
76																															
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74																															
67																															
10																															
22																															
72																															
52																															
83																															
4																															
62																															

id	o60	s60	o61	s61	o62	s62	o63	s63	o64	s64	o65	s65	o66	s66	o67	s67	o68	s68	o69	s69	o70	s70	o71	s71	o72	s72	o73	s73	o74	s74	o75
41																															
38																															
42	3	7	1	1	1	1	1	1	1	1	2	1	2	1																	
78																															
64	2	1	1	1	2	0	1	7	1	7	1	1	1	7	2	7	2	1													
66																															
2	1	3	3	7																											
28	1	4	3	7	1	1	1	1	1	7																					
99																															
68																															
11																															
25	2	1	2	1	1	1	1	1	2	1	2	1	3	7																	
81																															
53																															
73																															
57																															
9																															
13																															
21																															
65																															
85																															
17	3	7	3	7	3	7	3	7	3	7	3	7	3	7																	
71																															
3																															
31	2	1	2	4																											
79																															
16	1	7	1	2	2	0	1	3	2	2	1	6																			
60																															
46																															
29																															
58																															
43	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	1	3	7	3	7	1	1	1	1	1
69	2	6	3	7	3	3	2	1	3	1	3	1	1	1	1	1	1	1	2	1											

id	s75	o76	s76	o77	s77	o78	s78	o79	s79	o80	s80
80											
88											
87											
55											
86											
7											
34											
18											
39											
70											
56											
59											
32											
89											
14											
61											
8											
35											
76											
82											
20											
5											
24											
37											
74											
67											
10											
22											
72											
52											
83											
4											
62											

id	s75	o76	s76	o77	s77	o78	s78	o79	s79	o80	s80
41											
38											
42											
78											
64											
66											
2											
28											
99											
68											
11											
25											
81											
53											
73											
57											
9											
13											
21											
65											
85											
17											
71											
3											
31											
79											
16											
60											
46											
29											
58											
43	1	1	1	1	1	1	1	3	1	3	1
69											

Appendix G

Analysis of Pilot Data

The pilot data used in the present analysis was collected in the spring of 1991. This data set is based on eighteen subjects. A similar methodology to that of the present study was used to obtain these data.

Table G-1

Pilot Data Transition-Frequency Matrix of Ongoing Affiliative Behavior

	Subsequent (Lag 1) State			
	Alone		Social Contact	
Previous State	1. Alone	2. Social Contact	3. Alone	4. Social Contact
1. Alone, Alone				
SAM		>		<
PRT		<		>
Observed		86		49
Expected		48		75
k′		.37*		-.35*
2. Social Contact, Social Contact				
SAM		<		>
PRT		>		<
observed		51		162
Expected		81		128
k′		-.37*		.26*

Note. The column and row headings refer to subjects' objective and subjective situations when beeped. That is, (a) subjects were either alone or in social

(Table G-1, continued)

contact, and (b) subjects wanted to be either alone or wanted to be in social contact. The symbol in each cell indicates the hypothesized chance occurrence of that observed transition: (a) greater than expected (>), this would be indicated by a positive $\underline{k}'$, or less than expected (<), this would be indicated by a negative $\underline{k}'$. Hypotheses of aggregated cells are enclosed within brackets. SAM = social affiliation model hypotheses, PRT = privacy regulation theory hypotheses. $^{*}\underline{p} < .01$, one-tailed, given that the observed transitions are in the hypothesized direction.

Appendix H

Additional Hypotheses of the Social Affiliation Model

In the present conceptualization of the social affiliation model, affiliative behavior is categorized into nine different states (e.g., an individual may be completely alone and want to be alone); thus, a transition-frequency matrix of ongoing affiliative behavior has 81 cells (i.e., a nine-by-nine matrix). The social affiliation model, therefore, makes additional predictions to the ones tested in the present research (see Table H-1). To support the existence of affiliation motivation as a homeostatic model, these additional hypotheses should be tested in the future.

Table H-1

Transition-Frequency Matrix of Ongoing Affiliative Behavior as Hypothesized by the Social Affiliation Model

	Subsequent State								
Previous State	1	2	3	4	5	6	7	8	9
1. Alone, Yes	[	>	]				[	<	]
2. Alone, Neutral	<	=>	>						
or	=	=>	=	=	=	=	=	=	=
3. Alone, No	[<	]	>				[	>	]
4. A but PP, Yes				>			[	<	]
5. A but PP, Neutral	=	=	=	=	=	=	=	=	=
6. A but PP, No	[	<	]			>			
7. Social Contact, Yes	[	>	]				>	[<	]
8. Social Contact, Neutral							>	=>	<
Or	=	=	=	=	=	=	=	=>	=
9. Social Contact, No	[	<	]				[	>	]

Note. The numbers 1 through 9 refer to subjects' responses on 2 questions: 1) Who were you with when beeped? and, 2) Would you like to be alone right now? (Table

H-1, continued)

Possible responses to the first question were alone, alone but people present (A but PP), and with people (Social Contact); possible responses to the second question were yes, neutral, and no. The symbol in each cell indicates the hypothesized chance occurrence of that transition: greater than expected (>), less than expected (<), or at chance level only (=). Hypotheses on aggregated cells are enclosed within brackets.

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Title of Thesis: Affiliation Motivation in Everyday Experiences: A Comparison of a Homeostatic and a Dialectic Model.

Author: [redacted]

Shawn Casey O'Connor

16 July 1993