DISSERTATION

A LONGITUDINAL ASSESSMENT OF PRIVACY AND TERRITORY ESTABLISHMENT IN A COLLEGE RESIDENCE HALL SETTING

Submitted by

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WE HEREBY RECOMMEND THAT THE DISSERTATION PREPARED UNDER OUR SUPERVISION BY JACOB A. BENFIELD ENTITLED, "A LONGITUDINAL ASSESSMENT OF PRIVACY AND TERRITORY ESTABLISHMENT IN A COLLEGE RESIDENCE HALL SETTING" BE ACCEPTED AS FULFILLING IN PART REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY.

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ABSTRACT OF DISSERTATION

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College student retention/persistence is of great concern to higher education officials and has been linked to academic, social, and cultural factors that predict successful adjustment and satisfaction with the setting and the experience. The current research examines territory formation in a residence hall as one of the predictors of favorable outcomes for first-year students.

A sample of first-year Honors students (n = 110) assigned to a new residence hall participated in a five-wave longitudinal study to track changes in territoriality over their first 11 weeks on campus and to assess the impact of 17 territoriality indicators on student outcomes, including perceived stress and well-being. At each occasion, participants completed paper questionnaires related to assessment of their residence hall room and the student outcomes of interest. Personality traits such as privacy preference and dominance served as covariates. All participants had a roommate whom they had not met prior to assignment to the residence hall.

Unconditional growth models showed that 11 of the 17 territory components (e.g., perceived room carrying capacity, perception of the space as more private than public) demonstrated changes over time consistent with territory formation. The longitudinal data also showed that territory correlates (e.g., amount of personalization) were associated with positive student outcomes related to health, loneliness, happiness, life satisfaction,

roommate satisfaction, and university satisfaction. Data from 2- or 3-week comparison samples (n = 66 and 28) and a separate analysis of the first 3 weeks of the 11-week sample showed very little change in territoriality and student outcomes, suggesting that residence hall territory establishment and the relationships associated with it require more than 3 weeks to develop.

The findings also imply the need to clarify between immediately occurring 'maintenance' behaviors and gradually developing 'attachment' cognitions. Previous research conducted with short personalization tasks or in public spaces suggested that individuals immediately form a territorial bond using social scripts. The current work suggests that stronger territorial cognitions likely take time to develop and are therefore only found in primary territories or after prolonged exposure, but once formed do predict positive outcomes, including overall satisfaction with a university.

Keywords: PERSISTENCE, COLLEGE STUDENT, OWNERSHIP, ATTACHMENT, PERSONALIZATION

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CHAPTER ONE
Introduction

College student retention, satisfaction, emotional well-being, and academic success are major goals of every university. Entering freshmen in many cases are transitioning from dependent living arrangements with family members to independent living with other students. This transition can be a disastrous maladaptation for some and an exhilarating growth opportunity for others. Some students can experience loneliness, stress, and other forms of psychological distress. Crowded communal living arrangements, loud and distracting neighbors, and difficulty connecting with the community can cause some students to withdraw from school and return to a more comfortable setting.

At the same time, other students are truly satisfied with their new living arrangement and have no trouble finding a niche in the university community. These individuals do not seem to mind the densely populated residence hall and successfully block out or avoid the distractions that accompany such living conditions. To these students, previous residences become replaced by the new home that they have at college, and long-term identification with that particular setting is extremely likely. Why do such contrasting experiences occur? What mechanisms help explain, and predict, both the disconnected and the well-adapted student experience?

Student Persistence Research

Student retention, or persistence to graduation, is an area of extensive research within the field of education with most of the focus being on either high school or college student persistence. Current estimates show a national first-year retention rate of 67.6% at four-year public institutions; five-year graduation persistence rates average around 40.5%. Four-year private institutions fare slightly better in first-year retention (70.2%) and degree persistence (57.5%) but two-year institutions (both public and private) do substantially worse (American College Testing, 2007). Overall, only about two-thirds to three-quarters of incoming college students continue past their first year of education; only half of entering students will complete their degree in five years. Degree completion rates do not substantially increase after the first five years.

While several different models, approaches, and variables have been used to explain and/or predict persistence, some attempts have been more fruitful than others (for reviews see Pantages & Creedon, 1978; Peltier, Laden, & Matranga, 1999). Most notable are Tinto's theory of student departure (Tinto, 1993), Astin's student integration model (Astin, 1977a, 1977b), and Bean's psychological model (Bean, 1980; Bean & Eaton, 2001). Each model differs in underlying assumptions (e.g., Tinto's approach is sociological and Bean's is psychological) and in the central influence on retention (e.g., Astin emphasizes involvement in campus activities and Bean emphasizes psychological processes and individual differences), but all emphasize the need to bond or affiliate academically, socially, and/or culturally with the educational institution.

The specific variables commonly used in the persistence literature highlight one or more of these models by emphasizing both individual and group level academic, social,

and cultural characteristics. For example, prior academic success (e.g., high school GPA), placement exam scores, educational aspiration and academic momentum (e.g., recent academic successes or failures) are commonly used indicators of persistence and partially explain some of the gap between public and private institutional retention rates (Astin, Tsui, & Avalos, 1996; Cardoza, 1991; Sax, Astin, Korn, & Mahoney, 1995). Academic success/ability variables are generally more predictive of first-year retention rather than five-year degree completion (Kohen, Nestel, & Karmas, 1978).

Social components also play a vital role in first-year retention and seem to carry over into degree completion better than purely academic variables. Berger (1997) tested social integration and sense of community as a source of persistence using concepts from community psychology research. He found that a stronger sense of community was created in residence halls compared to off-campus housing and that it related to both positive social integration with peers and first-year student retention. This supported previous research suggesting that residence halls alone account for around a 12% persistence increase and that positive social support networks increase retention (Astin, 1977a; Nora, Cabrera, Hagedorm & Pascarella, 1996). Other forms of social interaction and involvement such as early interactions with other students (e.g., orientations), one-on-one faculty mentoring, participation in athletics, and participation in extracurricular activities have been shown to relate to higher retention and five-year graduation rates (Milem & Berger, 1997; Pascarella & Smart, 1991).

Cultural variables related to persistence have largely centered on ethnic or gender minority status, with some research on socio-economic factors (Peltier et al., 1999). Often times the interaction of those individual characteristics is most important in determining

whether the student will be able to integrate into the culture of the institution. For example, Stoecker, Pascarella, and Wolfe (1988) found a number of differences both within and between ethnic groups based on gender. Whereas African-American male persistence was based on socio-economics and academic achievement, African-American female persistence was centered on the prestige of the institution and academic goals. In addition to ethnic group and gender differences in prediction, another consistent finding shows that persistence is most difficult when a student is a minority within the institution (e.g., being Hispanic at a predominantly European-American college or being from a low-income family at a largely upper class private university). This seems to be true regardless of whether the minority status is based on ethnicity, gender, socio-economic status, or state residency status (Bennett & Okinaka, 1990; Cabrera, Nora, Terenzini, Pascarella, & Hagedorn, 1999; Cardoza, 1991; Eimers & Pike, 1997; Leppel, 2002).

Research on student retention covers a very wide range of institutional and societal issues. It has utilized several different types of models and variables to help explain what differentiates the disconnected from the 'at home' student experience in a way that encompasses the breadth of the issue. However, these research findings are largely based on immovable aspects of either the institution or the individual student. To say that a person's academic ability (IQ, reading level), social experience (having a positive first day, going to faculty office hours), or genetic make-up (having a Y chromosome, producing more skin pigmentation) predict persistence is to imply that much of the persistence problem is beyond the influence of the university itself. While this may be partially true, focusing on more easily influenced variables may be more helpful in the long term. Psychological research on the built environment and social

interaction has produced several alternative explanations for how a student could become either disconnected or 'at home' in the institution.

Privacy

As a common human behavior and psychological motivation, privacy has been described within various disciplines in a variety of ways. Several definitions, and general social connotation, emphasize the role of physical seclusion and/or interaction avoidance. Privacy is something that is accomplished by temporarily removing oneself from the public view or by removing unwanted parties from the area in order to gain seclusion and consequently privacy (Bates, 1964; Chapin, 1951; Newell, 1995, 1998). Other privacy researchers and theorists have avoided the seclusion definition and chosen to treat privacy as a control mechanism. Privacy in this case refers to an individual's desire to control what level of interaction occurs, the type of interaction taking place, and/or with whom he or she interacts (Altman, 1975; Ittelson, Proshansky, & Rivlin; 1970; Pedersen, 1997, 1999). The latter description of privacy as a control mechanism is generally more widely accepted within social and environmental psychology research for two reasons.

First, privacy as regulated control allows for the inclusion of avoidance and seclusion behaviors outlined by the other definitions of privacy without the exclusion of other, non-avoidance behaviors. For example, one way to control the type of interaction occurring, or to control with whom an individual interacts, is to hold the interaction at a secluded location or to remove undesirable parties from the location one is currently in (avoidance/seclusion behaviors). This is not to say that other behaviors, such as whispering, could not have accomplished the same level of privacy.

A more specific example of the importance of viewing privacy as including avoidance behaviors but not being limited to them comes from Westin's (1970) analysis of privacy types and functions. In this framework, privacy can occur through solitude, intimacy, anonymity, or reserve. A person can achieve privacy through seclusion and avoidance (solitude) but can get the same psychological feeling by being in a large, anonymous crowd (anonymity) or with high levels of selective attention (reserve). In this model, Westin also points out that protected communication is only one of several functions of privacy and that seclusion behaviors may not promote other, less secretive privacy functions. At times, we may desire privacy in order to help define ourselves and our affiliations. In that case, privacy is about controlled interaction and public behavior rather than the seclusion one desires for protected communication.

The second reason that a control approach to privacy is more widely used involves the important role that perceived control seems to play in several other psychological concepts. Loss of personal control is the very essence of learned helplessness and is related to several psychological disorders including depression (Seligman, 1975; Seligman & Maier, 1967). High perception of personal control is related to psychological well-being and health (Rodin, 1986; Seligman, 1991; Tangney, Baumeister, & Boone, 2004). In short, control appears to be salient in all human behavior so should therefore be salient in all human privacy behaviors.

Within the field of environmental psychology, privacy as control is valuable in that privacy research can be easily modeled in existing theoretical frameworks. The behavioral constraint model places control as the central aspect of behavioral freedom (Proshansky, Ittelson, & Rivlin, 1970; Zlutnick & Altman, 1972). In this model of

environmental influence on behavior, it is the loss of perceived control that leads to actual or perceived behavioral constraint by the environment. In the context of privacy, environments that decrease the perception of control over privacy (i.e., shared bedrooms, open-access internet chat rooms) lead to further constraints on behavior such as socializing, group affiliation, or keeping secrets.

Privacy, whether it is accomplished through temporary seclusion or general control over interactions, is a primary behavior found across all variants of humanity (Altman, 1977; Gauvain, Altman, & Fahim, 1983). Using a control framework, privacy could be argued as a psychological need that could even be biologically motivated. Research on privacy shows that it is a crucial element of design (Evans & McCoy, 1998; Keeley & Edney, 1983; Kupritz, 1998; Sundstrom, 1986), and other research indicates that privacy is related to healthy social functioning, restored emotional well-being, and lower stress levels (Haggard & Werner, 1990; Newell, 1998; Vinsel, Brown, Altman, & Foss, 1980). Harris, Werner, Brown, and Ingebritsen (1995) described privacy as a "universal human need" (311).

If privacy is indeed so key to universal human functioning, especially if control dictates privacy behaviors, much of human behavior should be interpreted in the context of privacy. One particular model does just that. Altman's (1975) explanation of the environment's potential impact on social behavior lays a foundation for explaining several universal human behaviors including privacy.

Altman's (1975) conceptualization of the environment's impact on human social behavior holds privacy as the central motivating force behind various social and environmental based compensatory mechanisms. In his framework, privacy is described

as a dialectic boundary control process that allows individuals, groups, and any other social unit to optimize the level of interaction occurring with other individuals, groups or social units. Through a series of behavioral mechanisms—territoriality and personal space—a person or group is able to move toward a desired level of privacy. Psychological and physical distress occurs when achieved privacy is either higher or lower than desired levels.

For example, crowding is conceptualized by Altman as the perceived breakdown of personal boundaries and/or territorial mechanisms leading to a very low level of achieved privacy. On the opposite pole would be complete solitude in which territorial or personal boundaries have restricted interaction more than desired by the individual or other social unit. However, it is important to note that privacy in this framework is also a dynamic process in which desired levels fluctuate dependent on the situation. At times, a person or group may want complete, open interaction and at others may strive for total social isolation. As such, the importance of successfully using behavioral mechanisms in matching desired privacy and achieved privacy is central to his discussion.

As a consequence of Altman's (1975) conjecture that privacy is central to human functioning, several projects have included privacy when trying to evaluate the physical environment and when attempting to predict or explain behavior. For example, perceived lack of privacy has been used to explain low rates of advice seeking by pharmacy patrons (Anderson, Blenkinsopp, & Armstrong, 2004), office worker productivity and building satisfaction (Block & Stokes, 1989; De Croon, Sluiter, Kuijer, & Frings-Dresen, 2005; Sundstrom, 1986), quality of life issues in residential treatment facilities (Kane, 2001;

Kane et al., 2003), and a number of behaviors relating to university undergraduates and college student living.

For example, one research project found that individuals scoring high on the specific privacy measures of Seclusion and Not Neighboring were more likely to sit in the back third of the college classroom (Pedersen, 1994). Other research on student family housing indicated that privacy and perceived control were correlated with overall place attachment to the apartment the student was renting (Harris, Brown, & Werner, 1996). Research also shows that student choices regarding sophomore living arrangements related to a privacy-sociability continuum with high need for affiliation individuals opting for lessened privacy (Switzer & Taylor, 1983). Privacy has also been an important factor when investigating college residence hall satisfaction and several other features of successful college living such as long-term student retention.

Vinsel, Brown, Altman, and Foss (1980) used surveys and behavioral trace measures to explore the impact that privacy regulation and room decorations had on more than 100 first semester undergraduates' short- and long-term university adjustment and retention. Their findings indicated that students successfully using both contact seeking and contact avoiding privacy behaviors were more satisfied with the university, more satisfied with residence hall living, had more optimistic expectations relative to academic and career outcomes, and were more active in university affairs. Participants who were successful at regulating interaction and achieving optimal levels of privacy were also more likely to be enrolled at the university at the end of the sophomore year (three semesters later). Individuals failing to successfully regulate interaction also reported more health problems in comparison to those achieving desired levels of privacy.

An additional analysis done by Vinsel et al. (1980) indicated that room decorations were another environmental element that was useful in predicting both short- and long-term student outcomes. In this project, students choosing several university or area specific decorations were more likely to stay enrolled compared to students choosing several home or family specific decorations. 'Stay in' students also showed more diversity in the types of decorations used when compared to 'drop out' students. It should be noted that room decoration, or personalization, is not an accurate indicator of privacy, and it is not directly linked to privacy. However, personalization is a commonly occurring behavior in the perceived ownership of space, or territoriality.

Territoriality

Possessive behavior is demonstrated in nearly every aspect of human society. Individuals acquire material objects, copyright original ideas, and can even demonstrate possessive behaviors in their relationships with other individuals. Related specifically to physical space, it seems that both *Homo sapiens* and non-human animals are capable of having perceived ownership over a physical space. This perceived ownership is commonly referred to as territoriality, and several distinct definitions have been used to operationalize this specific type of behavior (see Altman, 1975; Brown, 1987 for reviews). Similar to privacy, two large groupings of territorial definitions exist independent of whether or not researchers are discussing humans or other types of animals.

One group of territory definitions relies heavily on defense and occupancy behaviors used to maintain possession of the space (Alcock, 2001; Altman & Haythorn, 1967; Becker & Mayo, 1971; Dyson-Hudson & Smith, 1978; Sundstrom & Altman, 1974). In this type of definitional model, perceived ownership is demonstrated by and

achieved through using aggressive defense in the form of challenging intruders verbally or physically in an attempt to maintain some level of exclusive control over the space. For example, human territoriality would be demonstrated by an individual only when showing an overt response to another person or group trying to occupy the same physical area (e.g., threatening to call the police). Similarly, non-human animal territoriality is observed during the intrusion of another animal of the same species into an occupied area.

A separate group of territorial definitions focuses less on defense and occupancy, but places large emphasis on perceived attachment between animal and space. For researchers with this view, territoriality stems from a desire to organize and control a specific location that holds some type of value or attachment to the territorial individual (Altman, 1975; Jay, 1965; Pastalan, 1970; Pierce, Kostova, & Dirks, 2003; Sack, 1983). Aggressive defense results from a motivation to maintain that organization and the attachment the animal has with the space. For example, a person perceives ownership over the home (territory) because he or she enjoys having the ability to arrange the space and has developed psychological attachment to it. As a result of that attachment, people occupy the space more often and will feel more threatened by unwanted intrusion. The person then reacts to the threat aggressively. In essence, defense and occupancy are secondary behaviors occurring as a result of territorial ownership and attachment.

A survey of the different definitions of territory, regardless of emphasis, indicates that at some level, territorial behaviors and processes may have an instinctual, animal basis. Behavior patterns found universally among humans also resemble research in the area of ethology related to territory in a number of species (Bolyard & Rowland, 2000; Clayton, 1987; Mateo, 2006; Taylor, 1988). Other research indicates that territoriality and

general possessive behaviors emerge at very young ages in most human cultures (Ardrey, 1966; Furby, 1980; Singer & Hannikainen, 2002). However, these seemingly analogous behaviors between human and non-human animals are not accepted by all territory researchers. Elements such as the scope of the territory, the geographical properties of territory, and the variability in possessiveness and marking behaviors have become key points of the human-animal dissimilarity argument (Brown, 1987; Edney, 1974).

For example, while both humans and non-human animals will possess space at individual and group levels, non-human animals do not appear to exhibit behaviors indicating that territory extends to a national or state level. Similarly, non-human animals' territory is connected and maintained based on proximity to one or more core areas within the larger home range. In humans, the home, office, or vacation villa can be separated by thousands of miles but still maintained in the absence of constant occupancy. Humans also exhibit possessive behaviors over more than just space, with specific objects, ideas, or other people also being 'owned' (Brown, Lawrence, & Robinson, 2005; Gold, 1982; Pierce et al., 2003).

One of the behavioral mechanisms for regulating privacy proposed by Altman (1975) is territoriality. The perceived ownership of physical space or objects related to a location allows individuals or groups to exhibit some level of control in specific environments which enables privacy via regulated access to that space. Because of the important role territory plays in Altman's model, an in-depth description and conceptual framework has been proposed concerning both types of territories that exist and the likelihood of various territorial behaviors occurring in each type of territory.

Primary territories are described as physical places that have a very high level of perceived or actual ownership. Examples include a person's home or a group's privately owned meeting house. In primary territories, individuals or groups feel strong ownership over the space and are likely to perform various behaviors related to that ownership. Primary territories often have more elaborate and effective mechanisms for regulating public access to the space when compared to other types of territories. For example, expensive locks, alarm systems, and guards are common when controlling access to private property but are generally not found in publicly accessible places such as parks or public roadways.

Another territorial behavior that happens more often in primary territories is acts of personalization. Personalization can include several different categories ranging from simple, unobtrusive markers (e.g., a family picture on the wall, Halloween pumpkins with the family name carved in them) to more elaborate or permanent changes (e.g., painting the walls, carving your name into a desk). These personalizations serve two distinct purposes related to social interaction and control over privacy. First, personalization signals to others that the space is claimed and that access to it is indeed controlled by someone. Second, personalization serves as an expressive mechanism for the owner(s) of the territory. In this case, personalization allows the owner(s) to show potential visitors and/or intruders information about his or her beliefs, attitudes, and interests. In primary territories, personalizations are generally more numerous and elaborate compared to other territories because the individual or group has more ownership of the space than would be found in other types of territories. This increased ownership makes the holder want to demonstrate ownership, controlled access, and of course, his or her individual personality.

The final behavior commonly associated with territoriality, especially primary space, is the aggressive defense of space in response to intrusion. Based on the important role controlled access plays in privacy regulation in Altman's model, it makes sense that breakdowns in controlled access would result in aggressive responses intending to restore control and desired privacy. Aggressive defense is seldom physical in nature because that would violate larger social norms and standards. However, non-physical aggressive responses such as verbal challenges, social exclusion, non-verbal cues (e.g., glares, frowns), and the involvement of powerful others (e.g., parents, police officers) are common reactions to unwelcome intrusions.

In addition to primary territories that individuals or groups lay large ownership to, the Altman model describes two other types, or levels, of territory. Secondary territories such as a shared commons area in a residence hall or an office cubicle still provide some sense of ownership to the individual or group using the space even though other individuals or groups may possess formal legal ownership over the space. Secondary territories still include some amount of controlled access such as the ability to hold office hours, shut the door, or require identification for use of the commons room. Individuals or groups will also personalize secondary space but often times using removable, non-permanent markers such as picture frames, posters, or banners. Defense of secondary space is also less severe and occurs less often than defense of primary space. In secondary space, individuals use less hostile defense behaviors (e.g., glaring), and in some cases defense would be inappropriate because the intruder has just as much right to access as the defender. For example, a custodian entering an office uninvited is not

confronted with hostility by the 'owner' of the office because he or she has rights to access that transcend the 'owner's' right to controlled access and defense.

Public territories are physical environments that individuals or groups can only lay claim to on a very temporary basis because the space is shared by the larger public. For example, an individual can claim a spot on the beach during his or her visit or a group can reserve space at a pavilion in the local park for a company gathering. When the individual or group is done using the space they will leave it and have no concern for maintaining ownership. The transient nature of ownership in public spaces leads to a very low likelihood of controlled access, personalization, and aggressive defense. Any occurrence of these behaviors in a public space is often quite mild especially in comparison to primary territories. An individual could show up early to the beach to get access to the best spot, the group could put up banners to show others that the pavilion is claimed for that particular day, and both could ask someone to please leave the space alone but this is a far cry from door locks, painted exteriors, and pressing charges for trespassing.

Research in the area of territoriality prior to the creation of this framework was rather eclectic in its definitions and overall treatment of the issue, but follow-up research has become far more coherent with the majority of projects accepting most, if not all, of Altman's (1975) outline. This large level adoption was likely facilitated by empirical work that validated the previous theoretical assertions made in the creation of this framework (Taylor & Stough, 1978). Since the creation of this model, researchers have related territorial behavior to a number of territory types and situations. For example, public territory defense behaviors have been demonstrated at video arcades (Werner,

Brown, & Damron, 1981), water fountains (Ruback & Snow, 1993), pay phones (Ruback, Pape, & Doriot, 1989), storefronts (Childress, 1994) and parking lots (Ruback & Juieng, 1997). The use of personalization behaviors in primary territories has also highlighted the importance of holiday decorations on social cohesiveness (Brown & Werner, 1985; Ruback & Kohli, 2005), exclusive areas in the home on marital satisfaction (Rosenblatt & Budd, 1975), other territorial markers on residential burglary (Brown & Altman, 1983), and bumper stickers on vehicles (Szlemko, Benfield, Bell, Deffenbacher, & Troup, 2008).

Historically, one of the most prevalent research locations and topics for territory researchers has been the expression of territorial behaviors by college students at various campus locations. In one project, researchers investigated the defense of established territory on social in-group/out-group interactions in a college cafeteria by having confederates invade a table reserved for various campus groups. Territory owners usually either communicated in an unfriendly manner with individuals sitting at their table or ignored the intruder but made audible rude comments about them (Calsyn, 1976). Defense of space research conducted in college libraries, the student union, and classrooms have found similar outcomes (Becker, 1973; Becker & Mayo, 1971; Haber, 1980; Sommer & Becker, 1969).

Specifically related to college residence halls, researchers have tried demonstrating the importance of territoriality in room attachment, resident-visitor interactions, and college success. For example, a series of projects by Julian Edney and colleagues demonstrated not only the importance of territorial behaviors (i.e., personalization), but also other outcomes such as perceived environmental influence or affective responses to the environment that occur as a result of those behaviors. In one

project, participants completed a series of tasks in pairs in one of the participant's residence hall room (Edney, 1975). After these tasks, both the "resident" and the "visitor" completed questionnaires related to the room, their feelings, and perceptions of the environment. Results indicated that the visitor group scored lower on perceived control, pleasantness of space, perceived privacy, and being 'at home' compared to the resident participant group. Territory residents also felt that that room had a lower carrying capacity even though it was also perceived to be larger.

In a separate but related project, Edney and Uhlig (1977) had participants complete a room personalization task for 30 minutes and then asked them to complete a series of questionnaires either in the personalized room or in an identical, non-personalized room. Results indicated that participants in the personalized room felt that the environment was more pleasant, arousing, and happiness inducing. They also reported having more ownership over the space, a smaller perceived carrying capacity for the room, and being more influenced by the environment when compared to participants in the non-personalized room. The results of this project were similar to previous work on residence hall personalization that also demonstrated the important role of privacy in territory assessment (Edney & Buda, 1976).

Edney and colleagues' work highlights valuable aspects of territoriality. For example, the use of experimental manipulation allowed for direct testing of perceived resident advantage/control, the impact that territoriality had on environmental perception, and the importance of personalization in territory establishment. However, it could also be criticized for lacking external validity considering that 'ownership' or 'territory' was

artificially created using a 30-minute personalization task. Fortunately, field research using a broader inventory of effects has supported and extended some of those findings.

Mercer and Benjamin (1980) studied over 300 roommate pairs in double-occupancy residence halls in an attempt to quantify previous findings from researchers concerning both personality (e.g., Altman, Taylor, & Wheeler, 1971; Esser, 1973) and environment (e.g., Becker, 1973; Edney, 1976). This project consisted of an intensive research session with participant personality, previous residential experience, and reported behaviors being measured in addition to having participants rope off territory boundaries within the room and complete environmental assessment measures. Results indicated gender differences in size of exclusive territory but not shared space. Additionally, attitudes towards both the room and roommate varied based on size of territory and other territory measures such as personalizations, while other territory predictors were gender specific. For example, female territory seemed to be more influenced by the environment (e.g., layout) and immediate factors (e.g., currently messy), whereas male territory was predicted by personality (e.g., dominance) and past events (e.g., leisure activities taking place in the room). More recent research has also found gender differences regarding territorial behaviors in residence halls, but some results were not consistent with other research (Amole, 2005)

In short, territory research in residence halls indicates that physical layout, personality factors, and person-environment interaction impact student territorial behaviors as well as size of territory. The influence of each of these factors may depend on the gender of the resident, but the outcomes of having established territory seem to be consistent and non-gender-specific. Individuals with a stronger territorial attachment to

their residence hall room report being more comfortable, satisfied, and emotionally satisfied with their current living situation. Additionally, they perceive having more space and are less likely to tolerate crowded social situations within their rooms. Finally, research also indicates that some territory behaviors relate to long-term student retention and higher satisfaction with the larger university experience. However, no one has examined the length of time it takes to establish territory within the residence hall and how that creation process impacts these other positive resident outcomes.

Current Project

Based on previous research and Altman's (1975) conceptualization of the interaction between territory, personal space, and crowding as mechanisms for privacy regulation, the current project was designed as an initial exploration of the territorial process across time among first-year university students in residence halls. While no specific hypotheses were laid out at the onset of this project, three broad research questions were outlined: which territory indicators change over time, what role do personality/experience predictors play in relation to the territory indicators that change, and how do territory indicators relate to changes in student outcomes such as stress or health? Initial predictions based on previous research were included for some research questions to help with the interpretation of findings.

It was predicted that territorial indicators would change over time but without previous projects to inform specific hypotheses, no specific variables were considered either stable or variant. Instead, unconditional models were made for any and all variables that were initially intended to be proxies for territorial establishment. These included, but were not limited to, ratings of room attachment, perceptions of room size,

and feelings of privacy. Because of the open nature of this initial question, it served as the foundation for all later exploration of the other two research questions. Interclass correlations were used to describe what proportion of model variance was initially based on both within-subject (e.g., time) and between-subject (e.g., dominant personality) variables. Only models that improved with the inclusion of time were used in conditional models using territorial predictors (e.g., personality characteristics) or in models examining the relationship between territory and a change in student outcome.

Related to the second research question (what role do personality/experience predictors play in the establishment of territory?), specific participant characteristics were predicted to influence the speed of territorial establishment and the strength of the territorial ownership. Individuals scoring higher on personality characteristics such as dominance, preference for privacy, and territorial behaviors were expected to establish territories more quickly and to report higher levels of perceived ownership compared to individuals scoring lower on those same characteristics. Those scoring higher on dominance should report using more personalizations and being more likely to aggressively defend territory compared to lower dominance individuals. Higher privacy preference scores were expected to relate to increased likelihood of controlling access to territory.

With previous research on privacy, crowding, and perceived control demonstrating effects on physical and mental well being and Altman's (1975) conceptual model of territory including those elements, it seemed reasonable to conclude that territory establishment would have positive impacts on overall student health and well being. Specifically, participants exhibiting behaviors that facilitate the establishment of

territory such as successful privacy regulation should also report lower levels of stress and loneliness along with higher levels of happiness and life satisfaction. Individuals with strongly established territories should also report higher satisfaction with the larger university setting as well as with their residence hall. Satisfaction with the participant's roommate was also predicted to be related to stronger territoriality, but the direction of the relationship was not hypothesized.

Privacy and territorial creation were also hypothesized to relate to campus involvement as well as participation in other social activities. Participants reporting higher success in privacy regulation, lower perceptions of crowding, and an established territory should feel more individual control in the environment and more attachment to the larger university climate which should be manifest by increased social interaction and subsequent involvement in outside activities. Satisfaction with the university, residence hall, and roommate served as proxies for attachment to the larger university climate and social network. Finally, it was predicted that individuals who successfully regulated privacy and establish a strong territorial attachment would perform better academically than individuals who were less successful at privacy regulation and individuals who took longer to establish or who established weaker territorial attachment.

CHAPTER TWO

STUDY 1

METHOD

Using a five-wave longitudinal design, the establishment of territory was assessed within one type of residence hall floorplan. Pre-occupancy measures included prior experience and stable traits that have been shown to impact territory establishment or the need for territorial establishment. Subsequent waves focused on specific perceptual and cognitive measures of environmental satisfaction, interaction, and affordances related to positive student outcomes such as academic success, campus involvement, and general well-being.

Participants

One hundred eighty-three undergraduates were recruited for participation from a university database consisting of all incoming students who would be living in the residence hall under investigation. Of that initial 183-student sample pool, 110 students participated in at least one wave of data collection (29 completed only one wave; 71 completed at least three waves; 40 completed all five waves). Because growth modeling allows for participants to miss any given wave of data collection but still participate in later waves, actual participation in any given wave averaged 70 participants (Range = 58-92) and was not as limited as the total completion rates suggest.

All participants were members of the University Honors Program and were first-semester students. All participants were in same-sex roommate pairs, recruited prior to

the start of the fall semester, and none of the participants was acquainted with the roommate prior to being assigned as roommates. As an incentive for participation, participants received one $6 convenience account credit after each of waves 2, 3, 4, and 5 ($24 dollars total for those who participated fully). Additionally, participants who completed all five waves of data collection were entered into a raffle for a single $500 tuition credit that was awarded at the end of the study.

Consistent with the larger university demographics, participants were predominantly of European-American descent (80.9%; 16.3% missing data) and classified as in-state residents (60%; 16.3% missing data). The average participant was about 18 years old (M = 17.9, SD = .33), female (72.7%), and was raised in a 2-child home (M = 2.32, SD = .92). Larger family demographics indicate that participants were generally from middle-class backgrounds and were raised in homes with an average size of 2,692 ft^2 (SD = 1,129 ft^2; Range = 1,156-6500 ft^2).

Materials and Measures

Table 1 summarizes the variables of interest and the specific scales for these variables. During the course of the 16-week semester, participants completed a number of surveys of attitudes, behaviors, personality traits and demographics shown to be related to privacy and territoriality by both previous research and current theory. Additional measures related to satisfaction, campus involvement, well-being, social support, and academic success were also included. Whenever possible, established scales used in previous territory research were used. In some cases, critical assessments were adapted to be more time-period appropriate, and new assessments were created and pilot-tested with a separate sample.

Table 1

Summary of variables of interest and associated scale/item information

Variable of Interest$_{(wave)}$	Scale/Item (Appendix)	# of Items	Reliability (α)
Contact Seeking Behaviors$_{(2,3,4,5)}$	Contact Behaviors Checklist (F)	9	--
Contact Avoiding Behaviors$_{(2,3,4,5)}$	Contact Behaviors Checklist (F)	9	--
Public v. Private Assessment$_{(1,2,3,4,5)}$	Environmental Assessment Items - #18 (G)	1	--
Amount of Personalization Compared to Others$_{(2,3,4,5)}$	Room Personalization Survey - #15 (L)	1	--
Use of Decorations to Claim Space$_{(2,3,4,5)}$	Room Personalization Survey - #16 (L)	1	--
Current Room Inclusion$_{(1,2,3,4,5)}$	Inclusion of Other in Self Scale - Current Room (O)	1	--
Previous Room Inclusion$_{(1,2,3,4,5)}$	Inclusion of Other in Self Scale - Previous Room (O)	1	--
% Your Space$_{(2,3,4,5)}$	Resident Room Questionnaire - #3 (I)	1	--
% Shared Space$_{(2,3,4,5)}$	Resident Room Questionnaire - #2 (I)	1	--
Attachment Compared to Roommate$_{(2,3,4,5)}$	Resident Room Questionnaire - #10 (I)	1	--
Attachment Compared to Others$_{(2,3,4,5)}$	Resident Room Questionnaire - #17 (I)	1	--
'Feels Like Home'$_{(2,3,4,5)}$	Resident Room Questionnaire - #13 (I)	1	--
Room Carrying Capacity$_{(1,2,3,4,5)}$	Resident Room Questionnaire - #8 (I)	1	--
3 Roommate Friend Comfort$_{(1,2,3,4,5)}$	Resident Room Questionnaire - #11 (I)	1	--
5 Roommate Friend Comfort$_{(1,2,3,4,5)}$	Resident Room Questionnaire - #14 (I)	1	--
7 Roommate Friend Comfort$_{(1,2,3,4,5)}$	Resident Room Questionnaire - #18 (I)	1	--
Not Crowded v. Crowded$_{(1,2,3,4,5)}$	Environmental Assessment Items - #28 (G)	1	--
Perceived Academic Achievement$_{(2,3,4,5)}$	Academic Questionnaire - #11 (P)	1	--
Overall Health$_{(1,2,3,4,5)}$	Health Questionnaire - #7 (P)	1	--
Perceived Stress$_{(1,2,3,4,5)}$	Perceived Stress Scale	14	.84 – .86

Table 1 (Continued)

Summary of variables of interest and associated scale/item information

Variable of Interest$_{(wave)}$	Scale/Item (Appendix)	# of Items	Reliability (α)
Loneliness$_{(1,2,3,4,5)}$	UCLA Loneliness Scale	20	.89 – .92
Subjective Happiness$_{(1,2,3,4,5)}$	Subjective Happiness Scale	4	.79 – .94
Life Satisfaction$_{(1,2,3,4,5)}$	Satisfaction with Life	5	.87
Roommate Satisfaction$_{(2,3,4,5)}$	Social Satisfaction Questionnaire – Satisfaction Subscale (N)	5	.87
Resident Hall Satisfaction$_{(2,3,4,5)}$	Resident Satisfaction Questionnaire (M)	18	--
Privacy Preference – Intimacy$_{(1)}$	Privacy Preference Scale – Intimacy Subscale (D)	13	.77
Privacy Preference – Anonymity$_{(1)}$	Privacy Preference Scale – Anonymity Subscale (D)	9	.57
Privacy Preference – Not Neighboring$_{(1)}$	Privacy Preference Scale – Not Neighboring Subscale (D)	9	.68
Privacy Preference – Solitude$_{(1)}$	Privacy Preference Scale – Solitude Subscale (D)	6	.65
Goldberg et al. (2006) Dominance$_{(1)}$	CPI-adapted Dominance Scale (C)	11	.82
Jackson (1971) Dominance$_{(1)}$	Personality Research Form – Dominance Subscale (D)	15	.92
Territorial Behaviors – Controlled Access$_{(1)}$	Territorial Behaviors Scale – Access Subscale (A)	10	.74
Territorial Behaviors – Personalization$_{(1)}$	Territorial Behaviors Scale – Personalization Subscale (A)	8	.72
Territorial Behaviors – Aggressive Defense$_{(1)}$	Territorial Behaviors Scale – Defense Subscale (A)	9	.74

The Territory Behavior Scale-Primary (TBS-P; Appendix A) is a 24-item Likert-type scale made up of three subscales measuring common territorial behaviors. Access Control (10 items, $\alpha = .74$) items explore individual endorsement of behaviors that facilitate privacy by limiting access to primary territories ("When I meet someone I like to wait for a long time before allowing them into my home."). The Personalization subscale (8 items, $\alpha = .72$) examines endorsement of territorial personalization behaviors ("Making my apartment/house show my interests and personality is one of the first things I do when moving in."). The Aggressive Defense subscale (9 items, $\alpha = .74$) is based on behaviors used to remove territorial invasions and recover control over access ("The longer I live in a place, the more I like it and am willing to defend it."). Initial testing of this scale was conducted on an independent sample ($n = 361$) of university undergraduates. Results for the initial factor analysis and reliability testing can be found in Appendix B. Partial validation of this scale was a side objective for this project.

Two separate measures of dominance were used in this project. The first was an 11-item Likert-type measure of personality dominance ($\alpha = .82$) designed to be a suitable replacement for the California Personality Inventory (CPI) dominance subscale (Goldberg et al., 2006; Appendix C). The second measure of dominance was the dominance submission scale of the Personality Research Form (Jackson, 1971; Appendix D). This measure consists of 15 items ($\alpha = .92$) and was used in research conceptually replicated by the current project (Mercer & Benjamin, 1980).

Privacy was another area of interest in which two separate assessments were used. In this case, the Privacy Preference Scale (PPS; Appendix E) was a more stable trait assessment consisting of 42 items in a Likert format and that measures overall

endorsement of privacy behaviors and cognitions along six separate dimensions (α = .56-80; Marshall, 1972, 1974). The second privacy scale was the same scale used by Vinsel, Brown, Altman, and Foss (1980; Appendix F) and contained two subscales devoted to contact avoidance behaviors (9 items) and contact seeking behaviors (9 items) in checklist format. Effectiveness of each behavior was also rated on a 4-point scale. This measure focuses on more variant behaviors that could change during the course of the research.

Participant cognitive and affective responses to the territory were other areas of interest for this project, and a number of measures were used to assess both changes and differences related to territorial space. The first evaluative tool used was a 31-item set of 9-point bipolar adjectives including those used by Mercer and Benjamin (1980; Appendix G). These items came from a larger pool and have been shown to have sufficient variance when used to describe physical environments (Kasmar, 1970). The second measure of affective environmental responses was the 18-item semantic differential scale described in Mehrabian and Russell (1974; Appendix H) and used by Edney and Uhlig (1977). Additional questions related to cognitive and perceptual components were also used that were intended to examine perceived size of territory, carrying capacity of the room, and subjective view of physical size/usefulness (Appendix I). Perceived crowding was a specific area of focus for some of these additional questions.

Additional questionnaires focused on characteristics of the individual and his or her prior experiences that could impact territoriality (Appendix J). Demographics of interest included age, sex, number of siblings, birth order of participant, parental marital status, number of residential moves in lifetime, size of most recent residence, size of

participant room in most recent residence, previous experience sharing a room or having roommates (e.g., summer camps), and location of previous residence (to calculate distance from home). A parental residence survey (Appendix K) contained more specific items concerning the residence from where the participant had just moved. It contained information about square footage of the home, square footage of the participant bedroom, number of years of occupancy in residence, room changes during that occupancy, and some items found on the participant demographics in order to check accuracy of reporting.

Self-report measures of personalization behaviors were also taken (Appendix L) and accuracy of reporting was completed on a randomly selected subsample using digital photographs taken of the entire residence hall room. A raw count of the number of personalizations was used to calculate the range and distribution of personalizations. This personalization measuring technique is similar to the method used by Vinsel et al. (1980). Based on the validation, participant self-reports of personalization behaviors related to actual personalizations with 92.4% agreement.

Satisfaction with the university and residence hall was assessed with the same items used by Vinsel, Brown, Altman, and Foos (1980; Appendix M). This measure included 18 items in a 4-point Likert format and 4 items in a 4-option alternative choice format. No reliability data were reported by the previous researchers, but this measure was a significant predictor of overall student satisfaction and long-term student retention.

The Social Satisfaction Questionnaire (SSQ) is a 12-item measure of roommate relationship quality consisting of two factors (Fleming, Perkins, Lovejoy, & Collins, 1991; Appendix N). Perceived Satisfaction (5 items, $\alpha = .87$) and Shared Activities (5

items, $\alpha = .82$) are both rated using a 5-point Likert format. The two remaining items on the scale are single-item indicators of perceived roommate satisfaction with the participant. The SSQ has been shown to be predictive of roommate break-ups and other conflict (Fleming, Perkins, Lovejoy, & Collins, 1991; Lovejoy, Perkins, & Collins, 1995). An additional measure of participant-roommate satisfaction was taken in the form of the Inclusion of Other in the Self Scale (Aron, Aron, & Smollan, 1992; Appendix O). This measure required participants to indicate which of seven interconnected rings best described their relationship with their roommate.

In order to measure student well-being, four established scales were utilized as well as some more general questionnaires (Appendix P). The four scales represented opposite ends of the well-being spectrum with two measuring negative factors (loneliness and stress) and two measuring positive factors (life satisfaction and subjective happiness). The UCLA Loneliness Scale Version 3 consists of 20 items in a 4-point Likert format with good reliability across several different populations ($\alpha = .89$ - $.92$) and is considered a valid measure of individual loneliness (Russell, 1996). The Perceived Stress Scale (PSS; 14 items, $\alpha = .84$ - $.86$) was used as a global measure of perceived stress and is scored on a 5-point Likert scale (Cohen, Kamarck, & Mermelstein, 1983). Subjective well-being and happiness were measured using the Satisfaction with Life Scale (5 items, $\alpha = .87$) and the Subjective Happiness Scale (4 items, $\alpha = .79$ - $.94$) which both utilize a 7-point Likert format (Diener, Emmons, Larsen, & Griffin, 1985; Lyubomirsky & Lepper, 1999).

Procedure

The Honors residence hall was a new facility that opened for the first time for the Fall 2007 semester. It was a hotel-style facility, meaning each 2-person room had its own

bathroom. Based on the need to track changes in territory establishment, data collection was carried out on five separate occasions in order to track territorial development and stabilization across the length of a 16-week semester. Initial recruitment for the project took place two weeks prior to the beginning of the Fall 2007 semester using a recruitment letter (Appendix Q) mailed to the home addresses of everyone in the sample pool. Eligible participants were selected from the Honors Program database using the following criteria: he or she must be an incoming freshman, assigned to a room within the Honors residence hall, and must have been assigned to a roommate rather than having requested a specific roommate. During initial recruitment, participants were informed about the nature and scope of the project, the four $6 convenience account credits, and the drawing for a $500 tuition credit that would be available upon project completion. Those agreeing to participate logged onto an internet survey site (the link was provided in the recruitment letter) and completed the first round of data collection. Participation in Wave 1 implied consent and all participants were given a cover letter (Appendix R) at both Wave 1 and Wave 2.

The first wave of data collection (n=92) took place immediately following recruitment and preceded the start of the term by one week on average. Participants were mailed a link to an online survey containing the TBS-P, PPS, the 11-item dominance scale, and the participant experience and demographic questionnaires. Baseline measures of loneliness, stress, life satisfaction, and subjective happiness were also collected during Wave 1. A separate portion of data collection involved internet surveys with the parent(s) of the participants in order to gain more insights into both the physical environment the participant was leaving and previous experience the participant had with sharing territory.

The survey involved the online completion of the parental residence survey. The main purpose of Wave One was to collect information on stable personality characteristics prior to participant interaction with the territory being studied.

The second wave of data collection (n= 92) began on the first day of classes for the Fall 2007 semester and was concluded by the final day of that first week. Because of lower than expected participation in Wave One, recruitment was resumed in Wave Two by allowing roommates of Wave One participants to complete the questionnaire and still be eligible for the convenience credit and the final drawing. Wave Two, and all subsequent waves of data collection, took place at the participants' room inside the residence hall. During the second wave, participants completed the Mehrabian and Russell (1974) scale, the Kasmar (1970) items of environmental affect, the privacy behaviors checklist, the person-environment interaction questionnaire, a cognitive/perceptual aspects of territory questionnaire, a territorial behaviors checklist, and all of the measures related to satisfaction (university, residence hall, and roommate), student involvement, well-being, and academic success. Wave Two, and its associated measures, was designed to provide a baseline indicator of territory behavior, environmental affect, and person-environment interaction.

The third data collection wave (n=67) took place on the third week of the Fall 2007 semester, and one complete week after the conclusion of Wave Two. This wave of data collection was an exact duplicate of Wave Two in that all measures and procedures were repeated with all participants. Wave Three allowed for the measurement of changes in affect, satisfaction, well-being, territory behavior, territory size, and person-environment interaction that was occurring in a very short period of time.

The fourth wave of data collection (n= 65) did not occur until four complete weeks after the completion of the third wave of data collection. At this point, it was seven complete weeks into the semester and the eighth week was beginning. Once again, participants completed each measure and task used in Waves Two and Three in order to obtain data related to environmental affect, territory behaviors, territory size, person-environment interaction, satisfaction, involvement, well-being, and academic success. This wave of data collection furthers the ability to track change across time by giving a third time point. In this case, the time point was farther out than the previous two and was intended to give an indication of which measures of territoriality were beginning to stabilize with the establishment of private space.

Wave Five (n=58) took place during the 11th week of the semester after another four-week gap and was identical to the three waves of data collection preceding it. Wave Five was the final wave of data collection and was intended to further indicate which territory and privacy behaviors had stabilized. It was hypothesized to be quite similar to Wave Four's findings and to be a proxy for any additional data that would have been collected on a stable territory.

Upon completion of the final wave of data collection, participants were completely debriefed regarding the measures, purposes, and hypothesized outcomes of the project. Those completing all five waves of data collection (or completing the final four waves because of the second recruitment) were entered into the $500 tuition raffle and a single prize was awarded. Results were shared with participants in the Honors Program.

RESULTS

Consistent with the broad research aims for this project, a series of growth models using theoretically relevant proxy indicators of privacy, territory, and crowding were tested using SAS Proc Mixed. Complete models, including predictor variables as covariates, were created sequentially based on previous model statistics and relevant theory. Part One procedures involved unconditional models for each territorial indicator to see whether it changed over weeks of the semester. Part Two procedures involved conditional models to see whether other predictors (e.g., sex, privacy preference) modified these changes over the weeks. Following description of Part One and Part Two procedures, the Part One and Part Two analyses are presented below for each territorial indicator. Part Three analyses are then presented which involved testing whether student outcomes (e.g., health, satisfaction) were associated with the territorial indicators.

Descriptive Statistics

Descriptive statistics showed that the distributions roughly approximated normality (including skew and kurtosis) on the indicator variables chosen for Part One (see Table 2). Brown (1996) suggests that so long as *ses* for skew or *sek* for kurtosis are less than two times the standard error the data are sufficiently normal to proceed with parametric tests. Tabachinik and Fidell (1996) provide a formula for estimating *ses* ($\sqrt{6/n}$) and *sek* ($\sqrt{24/n}$). All indicator variables were within acceptable limits for parametric testing.

Descriptive statistics also showed that the distributions roughly approximated normality (including skew and kurtosis) on the predictor variables chosen for the conditional models in Part Two (see Table 3) and the student outcome variables used in

Table 2

Descriptive statistics of territory indicator variables across all waves

Variable	Mean (St. Dev.)	Skew (SE)	ses	Kurtosis (SE)	sek
Contact Seeking Behaviors	5.29 (1.86)	.85 (.15)	.234	3.38 (.30)	.467
Contact Avoidance Behaviors	4.63 (1.82)	.47 (.15)	.234	.01 (.30)	.467
Public v. Private Assessment	4.29 (1.80)	.12 (.13)	.234	-.52 (.26)	.467
Amount personalization compared to others	5.23 (2.26)	-.19 (.15)	.234	-.74 (.29)	.467
Use of decorations to claim space	6.05 (2.68)	-.28 (.15)	.234	-.90 (.29)	.467
Residence Hall Room/Self Inclusion	4.50 (1.44)	-.46 (.13)	.234	-.20 (.26)	.467
Previous Residence Room/Self Inclusion	5.03 (1.66)	-.71 (.13)	.234	-.40 (.26)	.467
Roommate/Self Inclusion	4.01 (1.48)	.12 (.15)	.234	-.61 (.29)	.467
% 'Your Space'	31.15 (13.03)	1.40 (.15)	.234	7.06 (.29)	.467
% 'Shared Space'	44.12 (20.35)	.63 (.15)	.234	.35 (.29)	.467
Feels like home	4.05 (.93)	-1.11 (.15)	.234	1.26 (.29)	.467
Attached compared to roommate	3.07 (.67)	.06 (.15)	.234	.05 (.29)	.467
Attached compared to others	2.92 (.69)	-.02 (.15)	.234	.16 (.29)	.467
# of people to feel crowded	5.66 (3.36)	1.70 (.13)	.234	3.44 (.26)	.467
Comfort with roommate + 3 friends	3.89 (1.08)	-.88 (.13)	.234	.18 (.26)	.467
Comfort with roommate + 5 friends	3.20 (1.21)	-.10 (.13)	.234	-.87 (.26)	.467
Comfort with roommate + 7 friends	2.39 (1.29)	.67 (.13)	.234	-.68 (.26)	.467
Not Crowded v. Crowded Assessment	5.29 (1.61)	.19 (.13)	.234	-.44 (.26)	.467

Table 3

Descriptive statistics of predictor variables across all waves (time invariant)

Variable	Mean (St. Dev.)	Skew (SE)	ses	Kurtosis (SE)	sek
Goldberg et al. (2006) Dominance	30.32(6.11)	.10(.25)	.234	-.34(.50)	.467
Jackson (1971) Dominance	42.47(9.87)	.22(.25)	.234	-.48(.50)	.467
PPS – Intimacy	55.91(4.98)	-.29(.25)	.234	-.61(.50)	.467
PPS – Not Neighboring	21.83(4.16)	.15(.25)	.234	-.37(.50)	.467
PPS – Seclusion	26.89(4.28)	-.01(.25)	.234	-.52(.50)	.467
PPS – Solitude	25.03(3.13)	-.38(.25)	.234	-.58(.50)	.467
PPS – Anonymity	24.29(3.93)	.24(.25)	.234	-.34(.50)	.467
PPS – Reserve	21.43(3.65)	-.18(.25)	.234	-.13(.50)	.467
TBS – Controlled Access	34.00 (6.23)	.16(.25)	.234	.42(.50)	.467
TBS – Personalization	32.78(6.14)	-.07(.25)	.234	-.13(.50)	.467
TBS – Aggressive Defense	40.24(4.88)	-.06(.25)	.234	-.38(.50)	.467

Part Three (see Table 4). All predictor variables were within acceptable limits for parametric testing.

Part One: Unconditional Growth Models of Territorial Indicators

Growth modeling is a longitudinal multilevel data analysis technique that allows researchers to examine both intraindividual change (how do people change over time) and interindividual differences in change (how do people differ in how they change over time) (Henry & Slater, 2007). Within a multilevel framework, repeated measurement occasions are nested within persons such that measurement occasions represent level 1 of the hierarchy and individuals represent level 2. As a result, many problems commonly associated with traditional forms of longitudinal analysis (e.g., repeated measures ANOVA) are overcome. For example, in a multilevel growth modeling framework interindividual differences in intraindividual change is appropriately modeled by estimation of random effects of the growth parameters. Additional problems such as missing participant data at any measurement occasion leading to a removal of that entire participant from the analyses are also overcome. With multilevel growth modeling, individual participants can vary in both their number of measurement occasions and the time elapsed between occasions. That is, each individual is allowed to contribute data to whichever time points he or she is observed. Individuals with more measurement occasions simply contribute more data to the final model; individuals with fewer occasions of measurement contribute less information to the model. In the case of attrition, the individual's data will increase precision in the earlier times by adding data points to the larger model and will simply not contribute to the later times. In short, growth modeling allows for the examination of change within individuals and across

Table 4

Descriptive statistics of student outcome variables across all waves

Variable	Mean (St. Dev.)	Skew (SE)	ses	Kurtosis (SE)	sek
Perceived Academic Achievement	3.54(0.61)	.46(.15)	.234	-.46(.30)	.467
Overall Health	8.25(1.32)	-1.25(.13)	.234	4.13(.26)	.467
Perceived Stress Scale	24.80(5.97)	.34(.13)	.234	.14(.26)	.467
UCLA Loneliness	38.86(8.87)	.51(.13)	.234	.22(.26)	.467
Subjective Happiness Scale	21.15(4.21)	-.65(.13)	.234	.18(.26)	.467
Life Satisfaction Scale	27.20(5.42)	-.42(.13)	.234	1.03(.26)	.467
SSQ – General Roommate Satisfaction	14.00(1.74)	-.87(.15)	.234	.60(.29)	.467
Residence Hall/University Satisfaction Scale	58.05(6.56)	-.31(.15)	.234	.11(.30)	.467

individuals while overcoming some of the traditional problems associated with longitudinal research and data collection and allowing for more interesting questions regarding intraindividual variability to be addressed.

Seventeen individual items were chosen from the questionnaire as proxy indicators of successful territorial establishment and were used in a series of unconditional growth models. These indicators were based on previous research concerning the successful regulation of or perception of privacy, perceptions of being closer to or more at home in the environment, and perceptions of a more spacious or less crowded environment. Initial model building for all 17 items involved three models (A, B, and C) consisting of the unconditional means, unconditional linear growth model, and unconditional quadratic growth models. These initial models were used to examine the distribution of the variance within and between persons, study the basic shape of the conditional models (linear v. quadratic), select the best fitting model, and determine which indicators should be used for more complete models (i.e., which indicators suggest a territorial process).

The unconditional means model (Model A) corresponds to the mean value of the indicator variable collapsed across all time points. The unconditional means model is used to calculate the intraclass correlation, a statistic that indicates how much of the total variance is due to between-person differences. This model also provides a baseline for comparing model fit statistics. The unconditional linear growth model (Model B) takes into account the linear passage of time to help demonstrate which of the indicator variables appear to change linearly with time thus showing involvement in a territorial process or progression.

Model C (the unconditional quadratic growth model) expands on Model B by allowing for acceleration or deceleration in the growth model (i.e., a curvilinear growth model). Depending on the indicator, that acceleration or deceleration could be suggesting the end of the process and the formal establishment of territory. The territorial process and its associated timeline were of key interest in this project. As such, the unconditional models are presented separately to better highlight important results that emerged with only the presence of time. Time for both the linear and quadratic model was centered at Wave 1 for all of the unconditional and conditional models to help with interpretation of the fixed effects (by defining the intercept as the predicted score at Wave 1).

Part Two: Conditional Growth Models of Territorial Indicators

To test conditional models, either the growth parameters (i.e., intercept, slope, quadratic term) from the unconditional models are regressed on a time-independent covariate (e.g., a stable trait), or the residual time-specific scores of the outcome variable (after adjusting for growth) are directly regressed on the time specific scores of the predictor depending on whether the predictor is time-independent or dependent. Models for the individual territorial indicator variables are described in detail below. Eleven of the 17 initial territorial indicators showed significantly improved model fit with the inclusion of either the linear (n=6) or the quadratic (n=5) time function, and were further studied using conditional growth models with predictor variables (centered at the grand mean) entered as covariates. These conditional models were used to better describe territorial establishment by pinpointing which personality or experience variables influenced the establishment process for the chosen indicators and served to better understand the second research question (what role do personality/experience predictors

play in the establishment of territory?). The remaining six indicators that did not vary with time were dropped from additional model testing because they did not facilitate the continued examination of a territorial process or timeline.

Information regarding conditional model building decisions and theoretically relevant results are outlined separately for each of the 11 indicators. All of the predictors used in the conditional models were included based on a previously demonstrated connection between the predictor and that indicator in an already established territory.

Because previous research had often looked at sex differences in territoriality and its component behaviors (e.g., Kaya & Weber, 2003; Mercer & Benjamin, 1980; Vinsel et al., 1980), the first conditional model tested for all 11 indicators included participant sex as the covariate (shown in Model D for Tables 5 – 21). For most of the indicators, the addition of the sex covariate did not correspond to a significant change in overall model fixed effects or model fit. However, participant sex did contribute meaningfully to models for the amount of personalization compared to others, previous residence integration, and 'feels like home' indicators (Tables 8, 11, and 16, respectively). Those specific findings are outlined with the other models tested for those three indicators.

The complete model building summaries for each of the original 17 territory indicators are described in the following paragraphs and detailed in the associated Tables 5 – 21. Variance explained for each model is based on the previous 'best fitting' model (e.g., the unconditional linear model was based off of the unconditional means model; the conditional models were based off of whichever unconditional model [linear or quadratic] best fit the data). It was calculated using Singer and Willett's (2003) pseudo-R^2 formula which is essentially based on a proportion of the difference in residual values compared

to the previous value for that residual component. This approach has been criticized for occasionally producing negative values in which case the variance explained is not interpretable (see Snijders & Bosker, 1994, 1999). As such, R^2, as calculated by Snijders and Bosker (1999), is given in text for any significantly improved model. In those cases, two separate R^2 values are given. The first, R^2_1, relates to the amount of variance explained in the individual scores across time points while the second, R^2_2, corresponds to the amount of explained variance in each person's average score.

To aid interpretation of the growth tables, a little more information is necessary to clarify each component of the growth model (and consequently each component of the table). The uppermost portion of the table, marked as "Fixed Effects" displays the group average for both initial status (labeled as "Intercept") and rate of change (labeled as "TIME"). These two numbers represent the average, estimated score at Wave 1 (the intercept) and the average estimated trajectory of change (e.g., the linear slope). In more complete models that include a covariate (Models D – G) additional fixed effect statistics are given that correspond to the average effect that a 1-point increase of the covariate has on either the initial status (found under the "initial status" subheading) or on the slope (found under the "rate of change" subheading). It is important to remember that the fixed effects correspond to a hypothetical 'average' person and give coefficients related to the average, or single best guess, model for that variable. Figures are included to display average trajectories as well as prototypical trajectories when appropriate (i.e., to describe significant covariate effects).

The second section of the table, labeled "Variance Components," displays coefficients for both the level 1 (within-subject) and level 2 (between-subject) variance

components as well as the percent of variance explained by that particular model above and beyond the previously best fitting model. For example, if Model B (the unconditional linear growth model) was the best fitting model then the variance explained value for Models C – G indicates how much more variance is explained by the addition of some component to the unconditional linear model (Model B). A significant value for either the within-subject or between-subject variance coefficient indicates that the remaining variance is still significantly greater than zero. The level 2 variance components are split between both between-subject initial status and between-subject rate of change for most models that contain a time component because the time component allows for variation in slope in addition to the standard variance in initial status found in the unconditional means model.

The final section of the growth model table (labeled as "Deviance Statistic") displays information used to assess whether or not a model improves upon overall fit for the data. The deviance statistic represents the -2 Log Likelihood function and can be used for comparing nested models if maximum likelihood estimation was used. Testing for improvement in fit between nested models is done by treating the difference in deviance statistics as a chi-square value with the degrees of freedom being equal to the difference in the number of parameters modeled (Singer & Willett, 2003). It is in this section of the table that the improvement in model fit is displayed via the deviance statistic and the accompanying chi-square test.

Contact Seeking and Avoidant Behaviors

Based on Altman's (1975) framework and research by Vinsel et al. (1980), the total number of successfully used contact seeking and contact avoiding behaviors is

believed to be higher in established primary territories because these territories promote the successful regulation of privacy. Therefore, it was reasoned that the total number of successful contact seeking and avoidant behaviors would increase as primary territory was established.

For contact seeking behaviors, intraclass correlations ($\rho = .47$) indicated that 47% of the total variance in contact seeking behaviors was due to between-person differences (e.g., some participants reported consistently high contact seeking behavior while others reported consistently low contact seeking behaviors). The remaining 53% of the variance was due to within-person or intra-individual change in contact seeking behaviors during the observation period.

The unconditional models (see Table 5; Models A – C) suggested that the inclusion of time as a linear component (Model B) significantly improved model fit and reduced within-subject variance by 30.1%; a quadratic function (Model C) did not improve fit or explain a substantial portion of remaining within-subject variance ($R^2_1 =.003$; $R^2_2= .004$). It was concluded that the linear model would be used as the baseline for the conditional models (i.e., models including predictor variables). Inconsistent with the initial prediction, the unconditional linear model chosen suggests that, on average, contact seeking behaviors decreased steadily with the passage of time (Figure 1). The random effects model statistics indicated that there were significant amounts of variance in both initial status and rate of change between participants; that is, people differed substantially in where they started and how much they changed.

Table 5

Results of model fitting for Contact Seeking Behaviors, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	5.29(.18)*	5.63(.28)*	5.54(.37)*	5.63(.32)*	5.63(.28)*	5.64(.28)*	5.63(.28)*
SEX				0.00(.65)			
PPS-Intimacy					-0.01(.06)		
PPS-Not Neighboring						0.01(.07)	
PPS-Solitude							0.01(.09)
Rate of change							
TIME		-0.06(.03)*	-0.02(.11)	-0.06(.03)‡	-0.06(.03)*	-0.06(.03)*	-0.06(.03)*
SEX				-0.00(.07)			
PPS-Intimacy					0.00(.01)		
PPS-Not Neighboring						-0.01(.01)	
PPS-Solitude							-0.00(.01)
Quadratic change							
$TIME^2$			-0.00(.01)				
Variance Components							
Level 1							
Within person	1.90(.21)*	1.33(.18)*	1.33(.18)*	1.33(.19)*	1.33(.18)*	1.35(.19)*	1.33(.18)*
Variance Explained		(30.1%)					
Level 2							
Intercept	1.72(.40)*	4.47(1.02)*	4.45(1.01)*	4.46(1.02)*	4.45(1.02)*	4.42(1.01)*	4.48(1.02)*
Variance Explained							
Change		0.03(.01)*	0.03(.01)*	0.03(.01)*	0.03(.01)*	0.03(.01)*	0.03(.01)*
Variance Explained							
Deviance Statistic							
Deviance	961.2	935.4	935.2	935.4	935.1	934.0	935.2
Parameters	3	6	7	8	8	8	8
Chi-Square Change		25.8	0.2	0.0	0.3	1.4	0.2
p-value		.000	.653	1.00	.861	.497	.905

* = $p < .05$; ‡ = $p = .076$

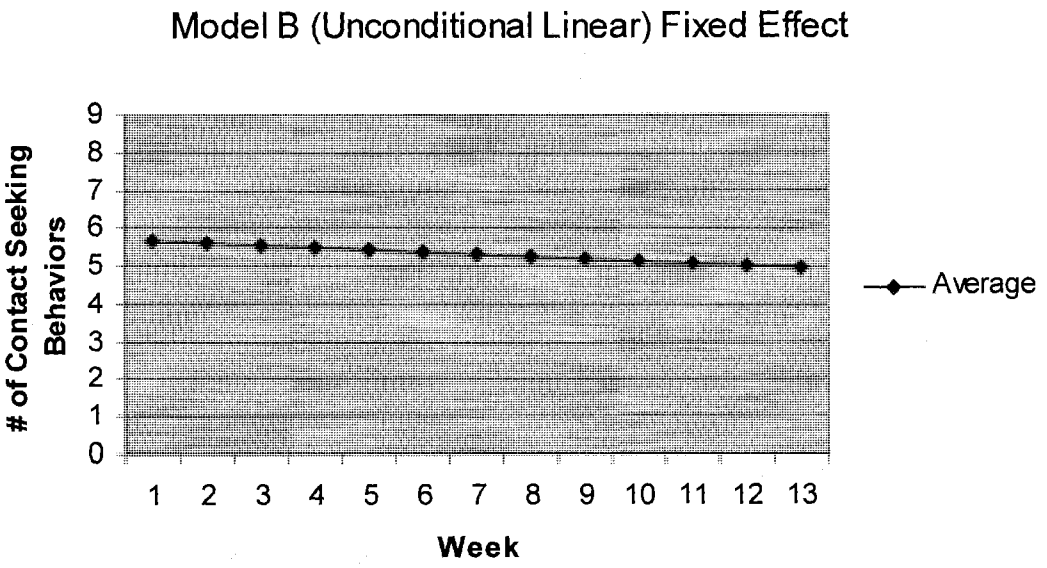


Figure 1. Fixed effects model for Contact Seeking Behaviors territory indicator.

Contact avoidant behaviors (Table 6) performed somewhat similar to contact seeking in that the linear time component (Model B) improved model fit and accounted for 29.0% of within-subject variance. Similarly, there were significant amounts of between-subject variance in both slope and initial status indicating that people varied for those components. Contrary to the contact seeking model, the quadratic function (Model C) did in fact improve on the linear contact avoidance model by explaining an additional 6.1% of the remaining within-subjects variance ($R^2_1 = .011$; $R^2_2 = .001$; see Table 6). For this model, avoidant behaviors generally increased with time but the size of that increase diminished (Figure 2). This relationship was in line with previous research and initial predictions. Random effects model statistics showed significant variance between subjects for both initial status and rate change; the variance for the quadratic term was constrained at zero.

Next, conditional growth models were assessed by several time-independent covariates as predictors of the intercept and growth parameters. In addition to conditional models that included sex as a covariate, models were tested for each of 11 indicators using several time invariant predictors. In the case of both contact seeking and contact avoidant behaviors, the Privacy Preference Scale (PPS) subscales for intimacy, not neighboring, and solitude were modeled separately as covariates. These scales were chosen because of the theoretical link between contact seeking and avoidant behaviors and privacy. Out of the six possible privacy preference subscales, these three seemed most relevant to both the behaviors in question and the research aims. The PPS subscales of seclusion, anonymity, and reserve were not modeled.

Table 6

Results of model fitting for Contact Avoidant Behaviors, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	4.67(.18)*	4.86(.26)*	4.29(.33)*	4.37(.38)*	4.32(.33)*	4.24(.33)*	4.29(.33)*
SEX				-0.31(.77)			
PPS-Intimacy					**0.11(.06)‡**		
PPS-Not Neighboring						-0.06(.08)	
PPS-Solitude							-0.01(.10)
Rate of change							
TIME		-0.03(.03)	0.21(.09)*	0.22(.10)*	0.20(.09)*	0.23(.09)*	0.21(.09)*
SEX				-0.03(.22)			
PPS-Intimacy					**-0.03(.02)‡**		
PPS-Not Neighboring						0.03(.02)	
PPS-Solitude							0.02(.03)
Quadratic change							
$TIME^2$			-0.02(.01)*	-0.02(.01)*	-0.02(.01)*	-0.02(.01)*	-0.02(.01)*
SEX				0.00(.02)			
PPS-Intimacy					**0.00(.00)‡**		
PPS-Not Neighboring						**-0.00(.00)***	
PPS-Solitude							-0.00(.00)
Variance Components							
Level 1							
Within person	1.42(.15)*	1.01(.14)*	0.94(.13)*	0.95(.13)*	0.92(.13)*	0.93(.13)*	0.94(.13)*
Variance Explained		(29.0%)	(6.1%)		(2.1%)	(1.7%)	
Level 2							
Intercept	2.05(.43)*	4.08(.90)*	4.09(.88)*	4.05(.88)*	4.01(.87)*	3.97(.86)*	4.10(.88)*
Variance Explained					(1.8%)	(2.9%)	
Change		0.02(.01)*	0.02(.01)*	0.02(.01)*	0.02(.01)*	0.02(.01)*	0.02(.01)*
Variance Explained					(4.9%)	(21.9%)	
Deviance Statistic							
Deviance	915.5	898.2	890.4	889.7	885.0	879.7	889.6
Parameters	3	6	7	9	9	9	9
Chi-Square Change		17.3	7.8	0.7	5.4	10.7	0.8
p-value		.001	.005	.403	.067	.005	.670

* = $p < .05$; ‡ = $p < .095$

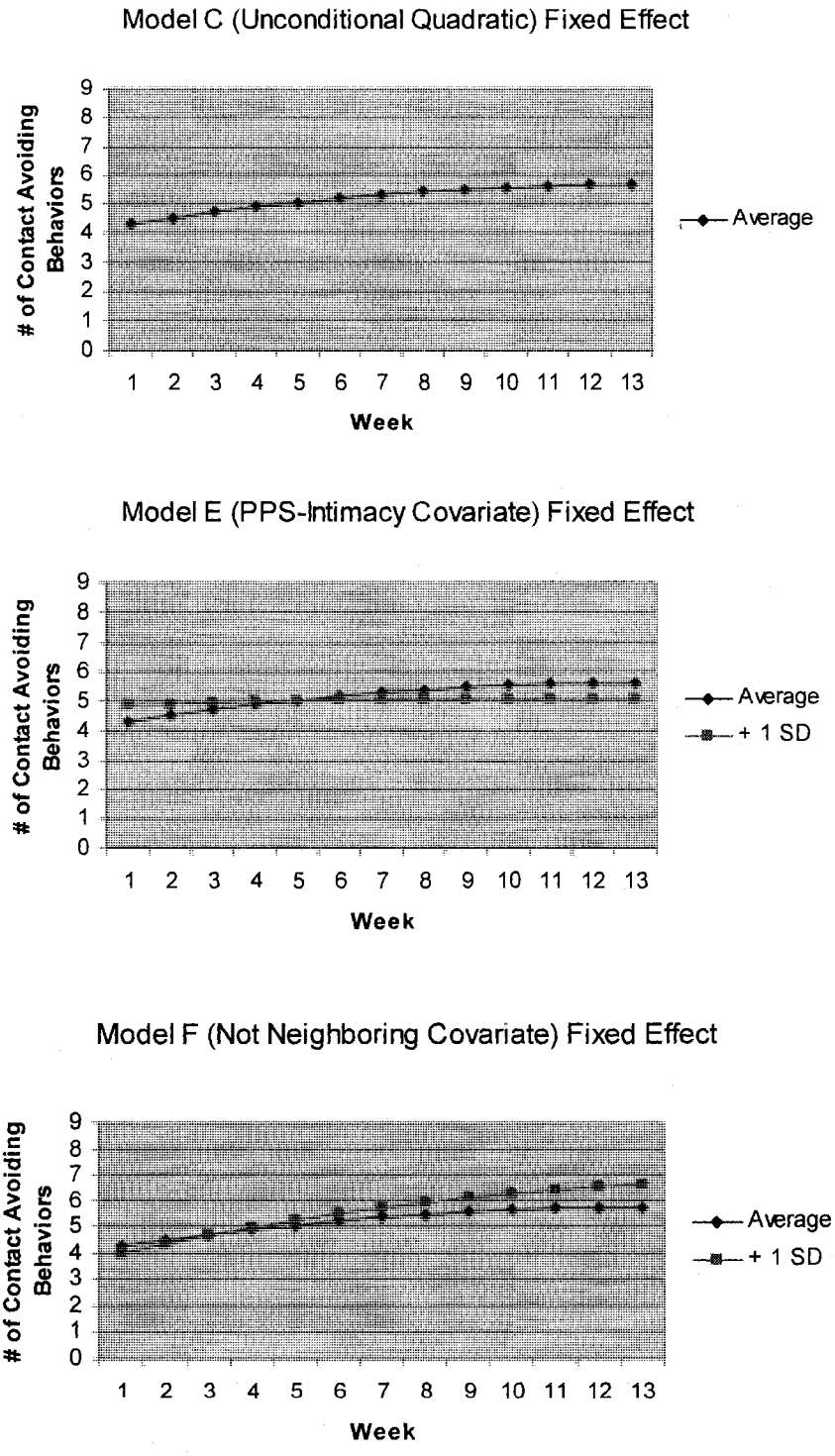


Figure 2. Fixed effects models for Contact Avoidant Behaviors territory indicator.

For contact seeking behaviors, none of the conditional models showed improvement over the unconditional linear model (see Table 5; Models E-G). Overall model fit and model variance was not significantly affected by the addition of these privacy preference covariates. For contact avoidant behaviors, the solitude subscale failed to improve on model fit or explain additional variance (see Table 6; Model G). However, the intimacy subscale of the PPS appeared to have a marginal (p = .067) interaction effect on the average rate of both linear and quadratic change (see Table 6; Model E). Unfortunately, very little variance was explained by the addition of the PPS intimacy covariate (R^2_1 = .019; R^2_2= .019), suggesting that the conditional model does not substantively add to the previously tested unconditional model. The not neighboring covariate also improved model fit (R^2_1 = .027; R^2_2= .030) and had a significant interaction with the quadratic rate of change (see Table 6; Model F). Specifically, the not neighboring covariate had an initial positive effect on contact avoidant behaviors but that effect deteriorated over time.

Public v. Private Environmental Assessment

One pairing of environmental assessment adjectives taken from Kasmar (1970) asked participants directly where they felt their room fell on the public versus private space continuum. Once again, since Altman's (1975) framework suggests that territoriality is used to achieve and maintain privacy, it was predicted that participant responses to this item would shift more toward the 'private' end of the response continuum with the establishment of territory.

Unconditional model testing of the public v. private indicator (Table 7) supported the initial prediction. Both the unconditional linear (Model B) and the unconditional

Table 7

Results of model fitting for Public v. Private Assessment Adjectives, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	4.19(.14)*	3.81(.16)*	3.39(.17)*	3.50(.20)*	3.39(.17)*	3.39(.17)*	3.39(.17)*
SEX				-0.43(.39)			
Goldberg et al. (2006)					-0.01(.03)		
Jackson (1971)						-0.00(.02)	
TBS-Access							-0.02(.03)
Rate of change							
TIME		0.09(.02)*	0.41(.07)*	0.40(.07)*	0.41(.07)*	0.41(.06)*	0.41(.06)*
SEX				0.04(.16)			
Goldberg et al. (2006)					0.00(.01)		
Jackson (1971)						-0.01(.01)	
TBS-Access							**0.02(.01)***
Quadratic change							
$TIME^2$			-0.03(.01)*	-0.03(.01)*	-0.03(.01)*	-0.03(.01)*	-0.03(.01)*
SEX				-0.00(.01)			
Goldberg et al. (2006)					0.00(.00)		
Jackson (1971)						0.00(.00)	
TBS-Access							**-0.00(.00)***
Variance Components							
Level 1							
Within person	2.05(.19)*	1.92(.17)*	1.74(.16)*	1.74(.16)*	1.74(.16)*	1.72(.16)*	1.71(.15)*
Variance Explained		(6.6%)	(9.3%)			(1.2%)	(2.0%)
Level 2							
Intercept	1.07(.25)*	0.96(.34)*	0.93(.31)*	0.89(.31)*	0.93(.31)*	0.90(.31)*	0.93(.31)*
Variance Explained						(3.5%)	(0.1%)
Change		0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00
Variance Explained						(0.0%)	(0.0%)
Deviance Statistic							
Deviance	1246.3	1226.2	1200.8	1199.4	1200.5	1195.9	1194.1
Parameters	3	6	7	9	9	9	9
Chi-Square Change		20.1	25.4	1.4	0.3	4.9	6.7
p-value		.000	.000	.497	.861	.086	.035

* = $p < .05$

quadratic (Model C) time models explained significant amounts of variance (6.6% and 9.3% of within-subjects variance, respectively; $R^2_1 = .070$ and $R^2_2 = .026$ for the quadratic model) and demonstrated a shift toward the 'private' end of the response continuum. The unconditional quadratic model, in which responses become more positive with time but the size of the change decreases (see Figure 3), was selected for further conditional model testing and showed significant amounts of between-subject variance in initial status but not rate of change. The variance for the quadratic term was not estimated.

Conditional models were tested for the public v. private environmental assessment indicator that included the dominance predictors and the TBS controlled access subscale. These three predictors were chosen for this indicator for one of two reasons. First, previous research (e.g., Deutsch, Esser, & Sossin, 1978; Mercer & Benjamin, 1980; Sundstrom & Altman, 1974) has shown that the trait of dominance is related to more established and exclusive territories (i.e., more established and *private* territories). Second, Altman's (1975) model posits that territorial control over access to a space is one of the primary mechanisms for regulating privacy (defined as having control over social interactions).

Results of the two conditional models that included the dominance scales were mixed. The Goldberg et al. (2006) dominance scale did not explain between-subject model variance or improve model fit. The Jackson (1971) version of the dominance scale marginally improved model fit ($p = .086$) but explained small amounts of variance (3.5% in intercept; $R^2_1 = .020$ and $R^2_2 = .035$). The fixed effects for the Jackson (1971) dominance model indicated that its inclusion does not alter initial status or rate of change for the average participant (see Table 7; Model F).

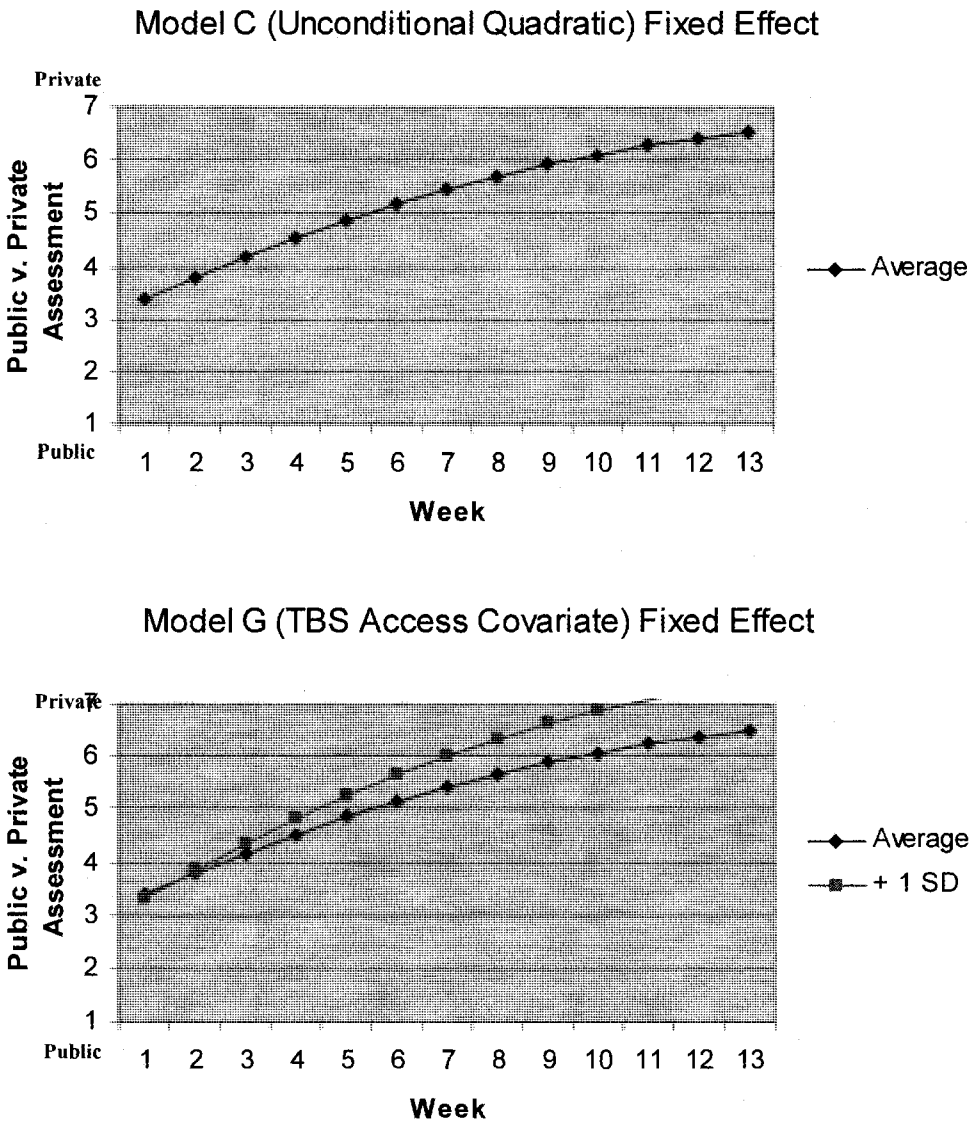


Figure 3. Fixed effects models for Public v. Private assessment territory indicator.

The TBS controlled access conditional model also showed a significant improvement in overall model fit ($R^2_1 = .014$ and $R^2_2 = .011$) and the fixed effects indicated some significant change in slope corresponding with change in TBS controlled access scores. Specifically, the average slope increased by .02 units for every 1-point increase in TBS controlled access scores indicating that those higher on controlled access generally tended to move toward the private end of the continuum faster than those with lower scores, although this effect diminished over time (see Table 7; Model G). TBS controlled access scores did not seem to significantly relate to initial status.

The Perception of Personalizations

Two indicators of territorial establishment involved participant perceptions of personalizations as a way of investigating changes in perceptions of a well-documented (see Brown, 1987 for review) territorial behavior. One of the indicators pertains to participants' perception of their individual level of personalization compared to others in the residence hall. It was reasoned that those perceiving themselves as having more personalization compared to others likely viewed their space as more their own since research has shown that decorating a room can induce a territorial response (Edney & Uhlig, 1977). The second indicator asked participants how important they felt decorations were in claiming their space. More direct than the first indicator, this one was predicted to also increase for those who were establishing a territorial bond.

Model testing for perceived amount of personalization compared to others showed that a linear model was the best fit for the data (see Table 8). The unconditional linear model (Model B) explained 24.1% of within-subjects variance compared to the unconditional means model and indicated a significantly positive change in perception of

Table 8

Results of model fitting for Amount of Personalization Compared to Others, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	5.23(.25)*	4.88(.26)*	4.88(.32)*	5.29(.28)*	4.88(.26)*	4.91(.26)*	4.77(.21)*
SEX				**-1.73(.57)***			
TBS-Access					-0.04(.04)		
PPS-Anonymity						-0.04(.07)	
TBS-Personalization							**0.22(.03)***
Rate of change							
TIME		0.06(.02)*	0.06(.08)	0.04(.02)‡	0.06(.02)*	0.06(.02)*	0.06(.02)*
SEX				0.09(.05)			
TBS-Access					0.00(00)		
PPS-Anonymity						-0.00(.01)	
TBS-Personalization							-0.00(.00)
Quadratic change							
$TIME^2$			-0.00(.01)				
Variance Components							
Level 1							
Within person	1.09(.12)*	0.83(.11)*	0.83(.11)*	0.83(.11)*	0.83(.11)*	0.83(.11)*	0.83(.11)*
Variance Explained		(24.1%)		(0.3%)			(0.3%)
Level 2							
Intercept	4.07(.74)*	4.08(.83)*	4.08(.83)*	3.48(.74)*	3.99(.82)*	4.05(.83)*	2.34(.55)*
Variance Explained				(14.7%)			(42.6%)
Change		0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*
Variance Explained				(9.1%)			(1.3%)
Deviance Statistic							
Deviance	924.1	905.6	905.6	896.6	904.1	904.0	871.5
Parameters	3	6	7	8	8	8	8
Chi-Square Change		18.5	0.0	9.0	1.5	1.6	34.1
p-value		.000	1.00	.011	.472	.449	.000

* = $p < .05$

personalization amount scores with the passage of time along with significant amounts of remaining variance in initial status and rate of change across participants. The inclusion of a quadratic time function (Model C) did not significantly improve overall model fit and was not used for conditional models.

The amount of personalization compared to others indicator was one of the three that were significantly influenced by the sex covariate. This conditional model showed that males had a significantly lower average starting point compared to females (Figure 4). Males tended to increase at a sharper rate than females, although the difference was only marginally ($p = .098$) significant. The inclusion of the sex covariate helped to explain 14.7% of between-subject variance in initial status and 9.1% of between-subject variance in linear change over time ($R^2_1 = .122$ and $R^2_2 = .146$).

For the other conditional models, this indicator was modeled separately with the TBS controlled access and personalizations subscales as covariates. The PPS anonymous subscale was also tested as a separate conditional model. The decision to include these covariates was based on research suggesting that personalizations serve two primary purposes—to signal occupancy as a means of controlling access and to express individual preferences to others (Brown & Altman, 1981; 1983). In this specific context it was believed that TBS controlled access would be positively related because of the desire to control access and PPS anonymity would be negatively related because of a preference to remain anonymous. The TBS personalization subscale was designed to measure individual tendency to personalize and therefore has an intuitive connection to the indicator of interest.

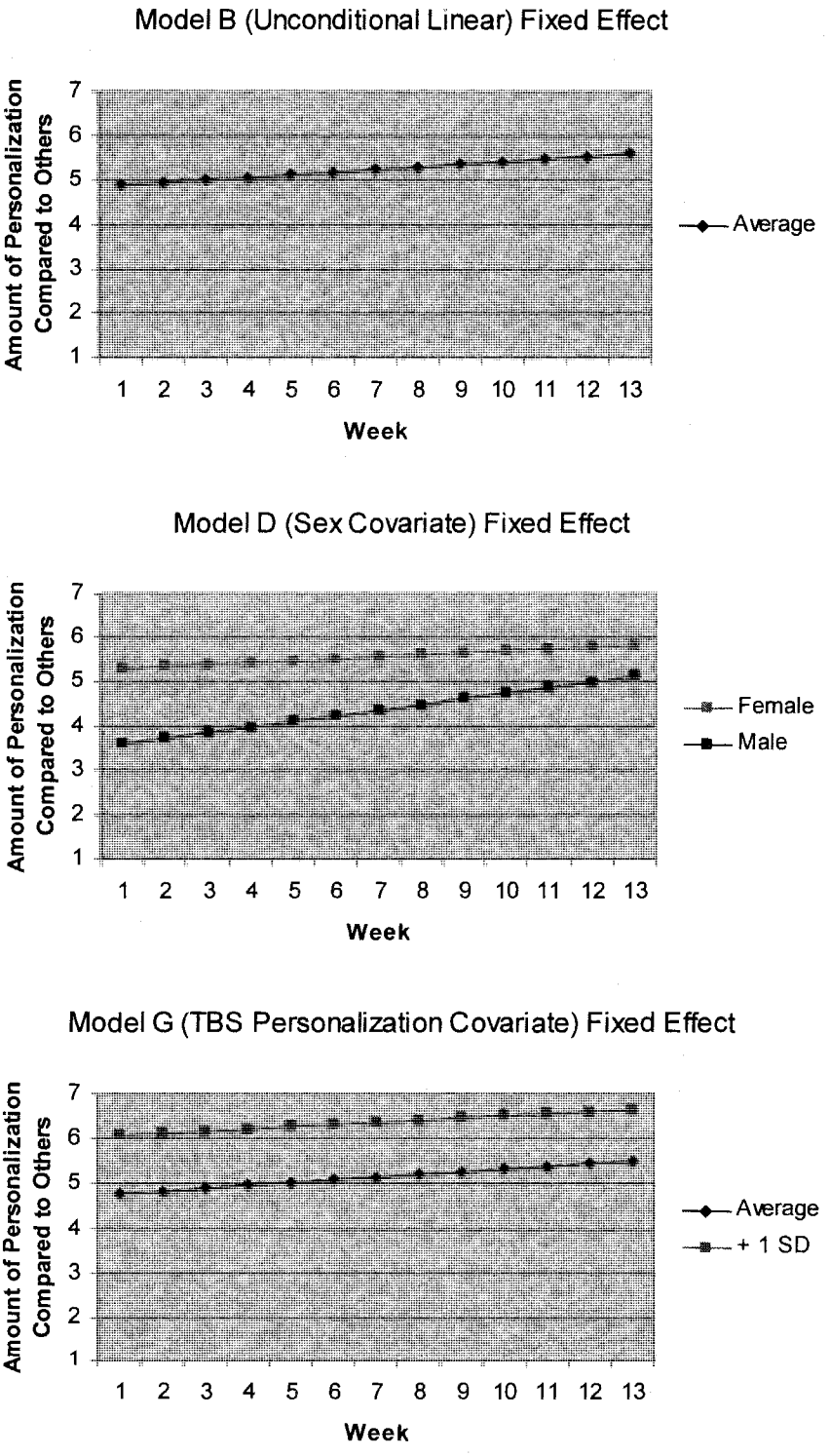


Figure 4. Fixed effects models for Amount of Personalization Compared to Others territory indicator.

Neither of the conditional models that included the TBS controlled access or the PPS anonymity subscales fit the data better than the unconditional linear time model. These covariates appeared to have no effect on initial status or rate of change for the personalization indicator and did not support the reasoning behind their inclusion in the model (see Table 8; Models E and F).

The TBS personalization subscale did contribute to the model fit for the personalization indicator as expected. Participant initial status increased by an average of .2 points for every 1-point increase in TBS personalization score (see Table 8; Model G). This covariate explained 42.6% of variance in initial status and 1.3% of variance in rate of change ($R^2_1 = .264$ and $R^2_2 = .325$) even though it did not have a significant fixed effect on rate of change. The random effects statistics suggest that even with the inclusion of the personalization subscale, significant amounts of between-subject variance existed for both intercept and slope.

The second indicator in this category, participant feelings toward the importance of personalization in claiming space, did not change with time. Both the unconditional linear and quadratic model failed to improve upon overall model fit (see Table 9). Together with an intraclass correlation suggesting a large portion of the total variance lies between-subjects ($\rho = .71$), it appears that perceived importance of personalization is separate from the temporal component of the territorial process and more dependent on stable, or trait, factors and was therefore excluded from additional model testing.

Measures of Self and Room Integration

Models were also tested on two items designed to gauge the extent to which the participants felt that they are integrated with their room using a modified inclusion of

Table 9

Results of model fitting for Perceived Importance of Personalization for Claiming Space, time centered at Time 1

	Model A	Model B	Model C
Fixed Effects			
Initial Status			
Intercept	5.92(.25)*	5.83(.28)*	5.91(.38)*
Rate of change			
TIME		0.02(.03)	-0.02(.12)
Quadratic change			
$TIME^2$			0.00(.01)
Variance Components			
Level 1			
Within person	2.10(.22)*	1.87(.24)*	1.87(.24)*
Variance Explained			
Level 2			
Intercept	5.21(.89)*	5.19(1.13)*	5.21(1.14)*
Variance Explained			
Change		0.01(.01)	0.01(.01)
Variance Explained			
Deviance Statistic			
Deviance	1202.1	1198.9	1198.8
Parameters	3	6	7
Chi-Square Change		3.2	0.1
p-value		.362	.999

* = $p < .05$

other in self (IOS) scale. One item assessed their integration with their residence hall room and the other assessed integration with their previous room. It was predicted that territorial establishment would be marked by increased integration with the current room and a decreased integration with the previous residence.

Integration with the current residence (Table 10) was best modeled using the unconditional quadratic model (Model C) with 9.0% more of the within-subject variance being explained by that function ($R^2_1 = .048$ and $R^2_2 = .003$) over the linear model. As predicted, the average participant's room integration increased over time but eventually decelerated (Figure 5). Results also indicated that significant amounts of between-subject variability existed for initial status but not for rate of change. Model C was used for additional model testing involving predictor variables.

Results for the previous residence integration indicator (Table 11) were less clear cut. For this measure, the model was significantly improved by the addition of the linear time component, and time explained 10.7% of within-subjects variance ($R^2_1 = .082$ and $R^2_2 = .049$), but the fixed effect for time indicated that, on average, rate of change did not vary with the passage of time. However, this does not mean that there is a lack of interindividual differences in intraindividual change; it only suggests that the average of those intraindividual rates of change is not different from zero. Based on the random effects, deviance statistics, and the potential for substantively interesting comparisons between this indicator and the current residence integration item, the researcher decided to proceed with conditional models using the linear time function.

Unconditional model testing had indicated that integration with the current residence was best treated with a quadratic time function while integration with the

Table 10

Results of model fitting for Current Residence Integration, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	4.38(.13)*	4.26(.14)*	3.97(.15)*	3.83(.17)*	3.97(.14)*	3.97(.15)*	3.94(.14)*
SEX				0.52(.33)			
TBS-Access					**0.06(.02)***		
TBS-Personalization						-0.01(.02)	
TBS-Defense							**0.06(.03)***
Rate of change							
TIME		0.03(.01)‡	0.25(.05)*	0.27(.05)*	0.25(.05)*	0.24(.05)*	0.26(.05)*
SEX				-0.09(.12)			
TBS-Access					**-0.01(.01)‡**		
TBS-Personalization						**0.01(.01)‡**	
TBS-Defense							-0.00(.01)
Quadratic change							
$TIME^2$			-0.02(.00)*	-0.02(.00)*	-0.02(.00)*	-0.02(.00)*	-0.02(.00)*
SEX				0.01(.01)			
TBS-Access					**0.00(.00)‡**		
TBS-Personalization						-0.00(.00)	
TBS-Defense							0.00(.00)
Variance Components							
Level 1							
Within person	1.05(.10)*	1.01(.11)*	0.92(.10)*	0.92(.10)*	0.91(.10)*	0.91(.10)*	0.92(.10)*
Variance Explained			(9.0%)		(1.5%)	(0.7%)	(-0.0%)
Level 2							
Intercept	1.07(.22)*	0.92(.26)*	0.91(.24)*	0.89(.24)*	0.85(.23)*	0.91(.25)*	0.83(.23)*
Variance Explained					(7.0%)	(0.2%)	(9.5%)
Change		0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)
Variance Explained					(-5.7%)	(47.7%)	(1.3%)
Deviance Statistic							
Deviance	1062.0	1056.4	1034.1	1031.6	1026.9	1027.4	1028.8
Parameters	3	6	7	9	9	9	9
Chi-Square Change		5.6	27.9	2.5	7.2	6.7	5.3
p-value		.133	.000	.287	.027	.035	.071

* = $p < .05$; ‡ = $p < .085$

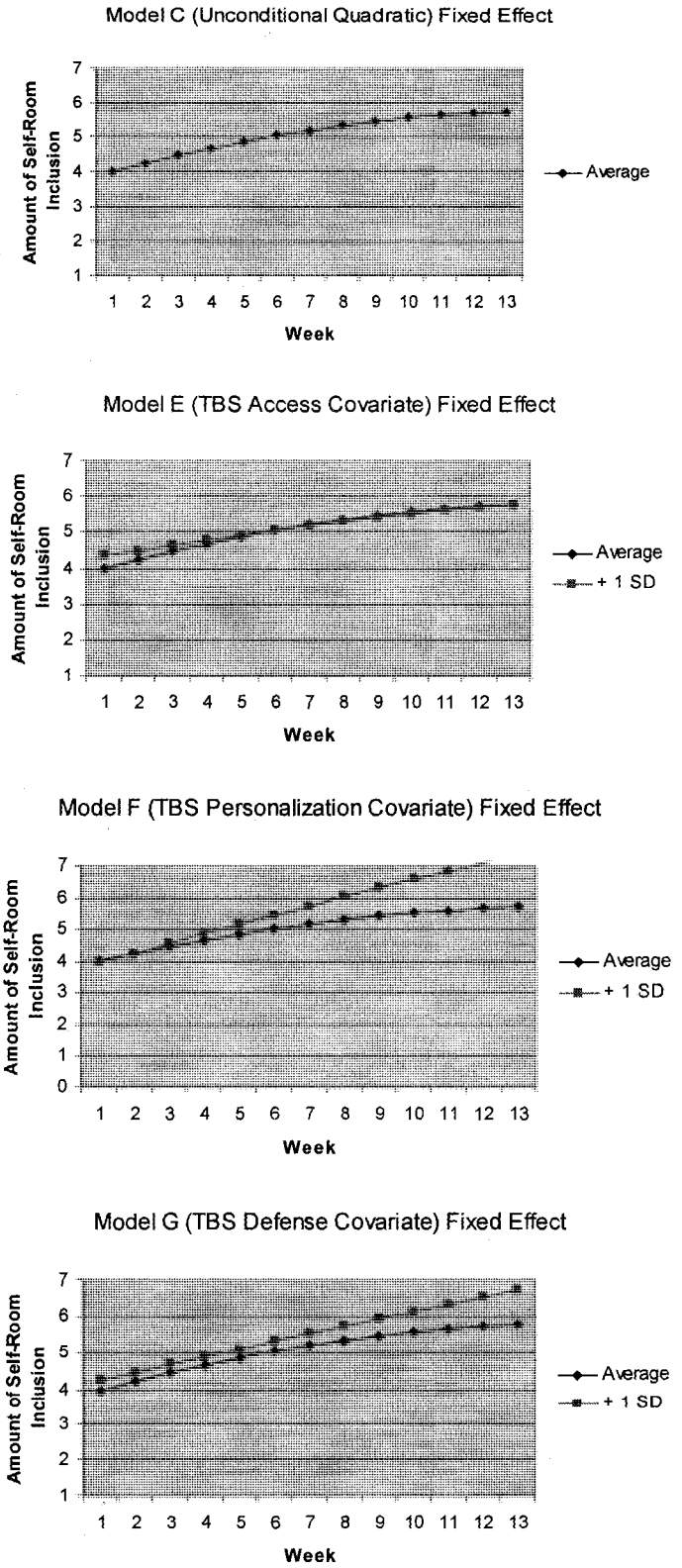


Figure 5. Fixed effects models for Inclusion of Self with Current Room territory indicator.

Table 11

Results of model fitting for Previous Residence Integration, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	5.02(.15)*	5.14(.16)*	5.11(.17)*	5.35(.18)*	5.15(.15)*	5.14(.15)*	5.13(.16)*
SEX				**-0.79(.35)***			
TBS-Access					0.04(.02)		
TBS-Personalization						0.04(.03)	
TBS-Defense							0.04(.03)
Rate of change							
TIME		-0.03(.02)	-0.00(.05)	-0.02(.02)	-0.03(.02)	-0.03(.02)‡	-0.03(.02)
SEX				-0.04(.04)			
TBS-Access					-0.00(.00)		
TBS-Personalization						0.00(.00)	
TBS-Defense							-0.00(.00)
Quadratic change							
$TIME^2$			-0.00(.00)				
Variance Components							
Level 1							
Within person	1.11(.10)*	0.99(.11)*	0.99(.11)*	1.00(.11)*	0.99(.11)*	0.99(.11)*	0.99(.11)*
Variance Explained		(10.7%)		(-0.5%)			
Level 2							
Intercept	1.56(.29)*	1.45(.33)*	1.44(.32)*	1.33(.31)*	1.40(.32)*	1.39(.32)*	1.41(.32)*
Variance Explained				(8.1%)			
Change		0.01(.00)	0.01(.00)	0.00(.00)	0.01(.00)	0.00(.00)	0.00(.00)
Variance Explained				(16.2%)			
Deviance Statistic							
Deviance	1094.2	1085.8	1085.5	1078.0	1083.3	1082.7	1084.1
Parameters	3	6	7	8	8	8	8
Chi-Square Change		8.4	0.3	7.8	2.5	3.1	1.7
p-value		.038	.584	.020	.287	.212	.427

* = $p < .05$; ‡ = $p = .07$

previous residence was modeled with the linear time function. Both of these indicators were conditionally modeled using each of the three TBS subscales (controlled access, personalization, and defense) in order to assess the extent to which individual tendencies toward territorial behaviors impacted individual integration with current and previous residences.

For the integration with the current residence indicator, all three of the conditional models had a significant fixed effect for the covariate. The addition of the TBS controlled access subscale accounted for 7.0% more variance in initial status ($R^2_1 = .042$ and $R^2_2 = .069$) over the unconditional quadratic time model, and indicated that higher scores on controlled access relate to a higher initial status for current room integration but a slower rate of change (see Table 10; Model E).

The conditional model that included the personalization subscale also improved model fit, and accounted for large amounts of additional between-subject variance in rate of change (47.7%) although that percentage accounted for very little of the total variance ($R^2_1 = .005$ and $R^2_2 = .003$). For this conditional model, personalization had a marginally significant ($p = .078$) interaction with the linear rate of change (see Table 10; Model F).

Results similar to the TBS controlled access conditional model were found when adding in the TBS defense subscale as a covariate. The average participant's initial status was higher for those reporting being more likely to defend their territories compared to those scoring lower on the TBS defense subscale. The conditional model including this covariate explained an additional 9.5% of variance in initial status ($R^2_1 = .047$ and $R^2_2 = .094$) over the unconditional quadratic model (see Table 10; Models C and G).

The second room integration indicator focused on the previous residence of participants and was conditionally modeled with each of the TBS subscales (Figure 6). In opposition to the current residence models, this set of conditional models indicated that controlled access, personalization, and defense had no significant impact on model fit orvariance explained. In sum, previous room integration models including TBS covariates were not significantly better than the linear model without covariates.

A conditional model including sex as a covariate (Model D) was a significant improvement for this indicator. Model statistics suggested that the average male had a significantly lower intercept than the average female; sex had no impact on the average change trajectory. The inclusion of the sex covariate explained 8.1% of variance in initial status and 16.2% of variance in slope ($R^2_1 = .046$ and $R^2_2 = .081$).

Percentage of Owned and Shared Space

The roommate situation sets up the potential for both owned space (primary territory) and shared space (secondary territory) within the residence hall room and it was predicted that changes in that dynamic occur as the result of territorial establishment. With an increase in territorial ownership it was expected that the percentage of owned (primary) space would increase while the percentage of shared (secondary) space would decrease. Two sets of models were tested—one for primary space and one for secondary space.

Results for the unconditional models involving percentage of owned space (Table 12) did not support predictions, with neither the unconditional linear nor the unconditional quadratic models improving on the initial means model. Conditional models were not explored.

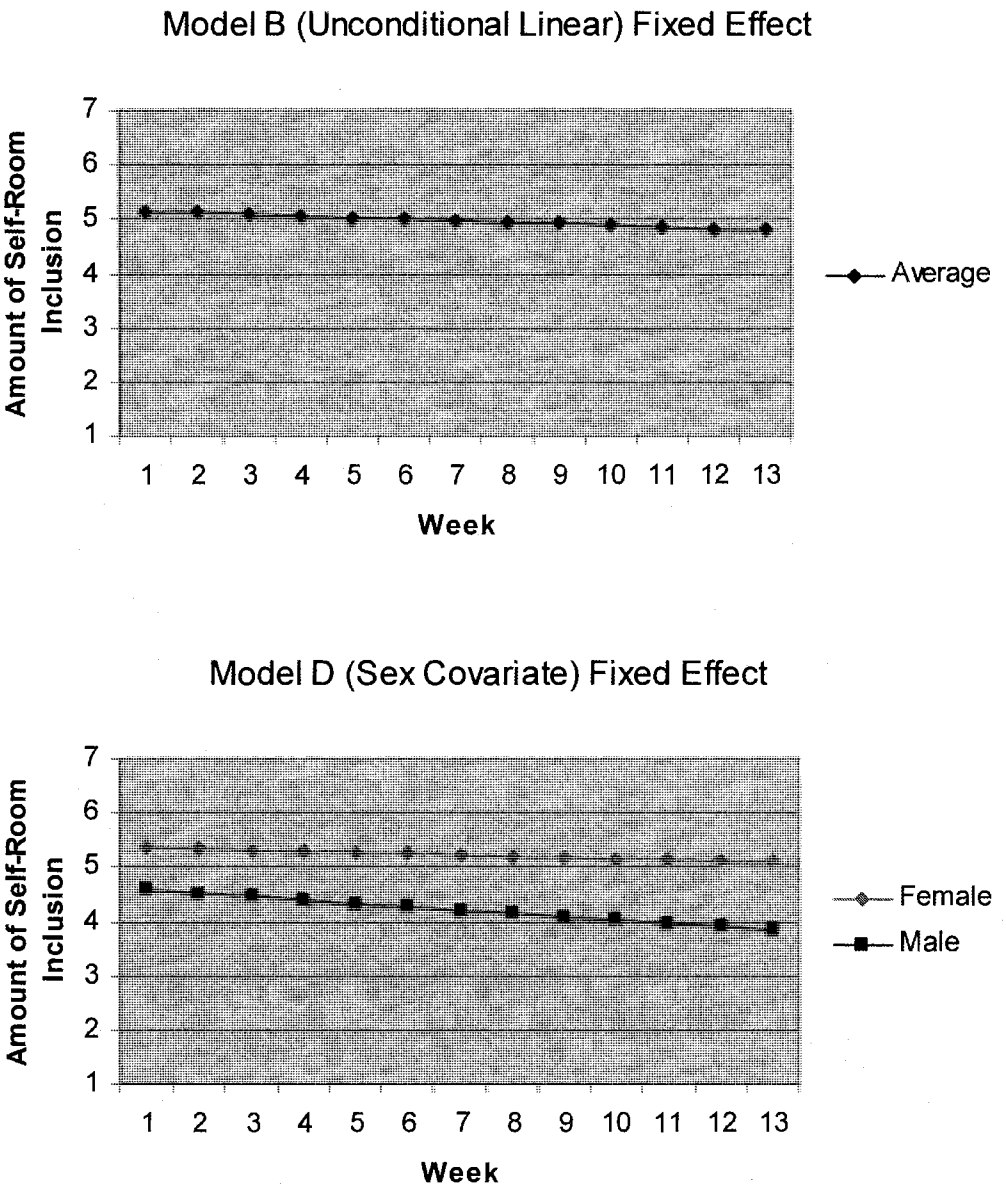


Figure 6. Fixed effects models for Inclusion of Self with Previous Room territory indicator.

Table 12

Results of model fitting for Percentage of Owned Space, time centered at Time 1

	Model A	Model B	Model C
Fixed Effects			
Initial Status			
Intercept	30.81(1.29)*	31.11(1.47)*	30.29(1.85)*
Rate of change			
TIME		-0.05(.11)	0.30(.51)
Quadratic Change			
$TIME^2$			-0.03(.04)
Variance Components			
Level 1			
Within person Variance Explained	38.94(4.02)*	35.44(4.44)*	35.42(4.44)*
Level 2			
Intercept Variance Explained	137.23(22.60)*	160.42(30.17)*	160.25(30.13)*
Change Variance Explained		0.19(.16)	0.19(.16)
Deviance Statistic			
Deviance	2045.9	2043.1	2042.6
Parameters	3	6	7
Chi-Square Change		2.8	3.3
p-value		.424	.509

* = $p < .05$

Similar to the percentage of owned space indicator, percentage of shared space (Table 13) did not vary as a function of time and models including time did not substantially improve model fit nor explain significant amounts of variance compared to the unconditional means model. As a result of being seemingly independent of time, this indicator was excluded from further model testing involving predictor variables. Random effects for both unconditional models suggested that rate of change did not vary across participants so it was concluded that data for this indicator were largely stable for the entire sample.

Direct Attachment Questions

Two items chosen to be indicators took a more direct approach at assessing territoriality by asking participants how attached they felt to their rooms compared to both their roommate and others in their residence hall. A third indicator item measured the extent to which the participant's room 'feels like home.' It was predicted that all three of these indicators would increase as time progressed and territorial bond strengthened.

Change in room attachment compared to their roommate did not follow a linear or quadratic growth model (see Table 14). Model fit was not significantly improved upon by the addition of either time function and as a result this indicator was not used for any additional model testing. Similarly, participant room attachment compared to others in the residence hall did not change with time and very little variance was explained by either the linear or quadratic time functions (see Table 15).

Results for whether or not the participant's room felt like home (Table 16) were more promising than the attachment items but the overall model was not entirely conclusive. The addition of a linear time component significantly improved overall model

Table 13

Results of model fitting for Percentage of Shared Space, time centered at Time 1

	Model A	Model B	Model C
Fixed Effects			
Initial Status			
Intercept	44.74(1.86)*	45.53(2.26)*	42.95(3.28)*
Rate of change			
TIME		-0.15(.23)	0.99(1.07)
Quadratic change			
$TIME^2$			-0.08(.08)
Variance Components			
Level 1			
Within person	175.02(18.25)*	163.53(22.52)*	161.48(22.23)*
Variance Explained			
Level 2			
Intercept	252.15(48.93)*	282.61(76.76)*	286.53(76.90)*
Variance Explained			
Change		0.64(.93)	0.66(.92)
Variance Explained			
Deviance Statistic			
Deviance	2389.9	2388.9	2387.7
Parameters	3	6	7
Chi-Square Change		1.0	2.2
p-value		.801	.699

* = $p < .05$

Table 14

Results of model fitting for Attachment Compared to Roommate, time centered at Time 1

	Model A	Model B	Model C
Fixed Effects			
Initial Status			
Intercept	3.04(.06)*	3.08(.07)*	3.00(.11)*
Rate of change			
TIME		-0.01(.01)	0.03(.04)
Quadratic change			
$TIME^2$			-0.00(.00)
Variance Components			
Level 1			
Within person	0.20(.02)*	0.17(.02)*	0.17(.02)*
Variance Explained			
Level 2			
Intercept	0.27(.05)*	0.32(.08)*	0.32(.08)*
Variance Explained			
Change		0.00(.00)	0.00(.00)
Variance Explained			
Deviance Statistic			
Deviance	485.3	482.0	480.9
Parameters	3	6	7
Chi-Square Change		3.3	4.4
p-value		.348	.355

* = $p < .05$

Table 15

Results of model fitting for Attachment Compared to Others in Hall, time centered at Time 1

	Model A	Model B	Model C
Fixed Effects			
Initial Status			
Intercept	2.91(.06)*	2.92(.06)*	2.97(.11)*
Rate of change			
TIME		-0.01(.01)	-0.02(.04)
Quadratic change			
$TIME^2$			0.00(.00)
Variance Components			
Level 1			
Within person	0.20(.02)*	0.19(.02)*	0.19(.02)*
Variance Explained			
Level 2			
Intercept	0.30(.06)*	0.28(.06)*	0.20(.07)*
Variance Explained			
Change		0.00(.00)	0.00(.00)
Variance Explained			
Deviance Statistic			
Deviance	493.9	489.4	489.3
Parameters	3	6	7
Chi-Square Change		4.5	4.6
p-value		.212	.331

* = $p < .05$

Table 16

Results of model fitting for 'Feels Like Home', time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	4.04(.09)*	4.02(.11)*	4.10(.15)*	4.02(.12)*	4.02(.11)*	4.01(.11)*	4.02(.11)*
SEX				-0.04(.26)			
TBS-Access					0.00(.02)		
TBS-Personalization						0.01(.02)	
TBS-Defense							-0.00(.02)
Rate of change							
TIME		0.00(.01)	-0.03(.05)	-0.01(.01)	0.00(.01)	0.00(.01)	0.00(.01)
SEX				**0.07(.03)***			
TBS-Access					0.00(.00)		
TBS-Personalization						-0.00(.00)	
TBS-Defense							0.00(.00)
Quadratic change							
$TIME^2$			0.00(.00)				
Variance Components							
Level 1							
Within person	0.36(.04)*	0.27(.03)*	0.27(.03)*	0.27(.03)*	0.27(.03)*	0.27(.03)*	0.27(.03)*
Variance Explained		(26.2%)		(-0.6%)			
Level 2							
Intercept	0.51(.10)*	0.60(.14)*	0.60(.15)*	0.58(.15)*	0.60(.15)*	0.60(.15)*	0.60(.15)*
Variance Explained				(3.1%)			
Change		0.01(.00)*	0.01(.00)*	0.00(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*
Variance Explained				(20.3%)			
Deviance Statistic							
Deviance	586.0	572.7	572.1	566.7	572.6	572.5	572.7
Parameters	3	6	7	8	8	8	8
Chi-Square Change		13.3	0.6	6.0	0.1	0.2	0.0
p-value		.004	.439	.050	.951	.905	1.0

* = $p < .05$

fit and helped to explain 26.2% of within-subject variance. Based on the fixed effects, time, on average, did not significantly alter scores for this indicator even though there were a lot of interindividual differences in intraindividual change. Given the importance of better understanding the factors contributing to feeling 'at home' and the overall model improvement with the linear time function, this indicator was tested with conditional models. The between-subject variance was significant for both initial status and slope suggesting that differences were present but not yet accounted for in the model.

The average male in this sample did not differ from the average female on initial status for the 'feels like home' indicator, but did have a different slope (Figure 7). In fact, the fixed effects for this conditional model indicated that female scores for this item did not change significantly over time while male scores increased steadily. This time x sex interaction helps explain the null effect for time in the unconditional models and highlights some substantive differences in territorial establishment. For this indicator, the inclusion of sex in the model accounted for an additional 3.1% of variance in initial status and 20.3% of variance in slope between-subjects ($R^2_1 = .021$ and $R^2_2 = .032$).

Additional conditional models using the three TBS subscales as covariates were also tested. These were chosen for reasons similar to the room integration indicators—to assess the extent to which a territorial behavior tendency impacts person-environment bond. Results for all three conditional models (Models E –G) were non-significant, with none of the covariates improving model fit or explaining more variance. In short, the 'feels like home' indicator did not perform well within the framework of this project. Not only did it fail to vary with time but predictor variables known to influence a personal sense of ownership did not meaningfully relate to it, either. While results for participant

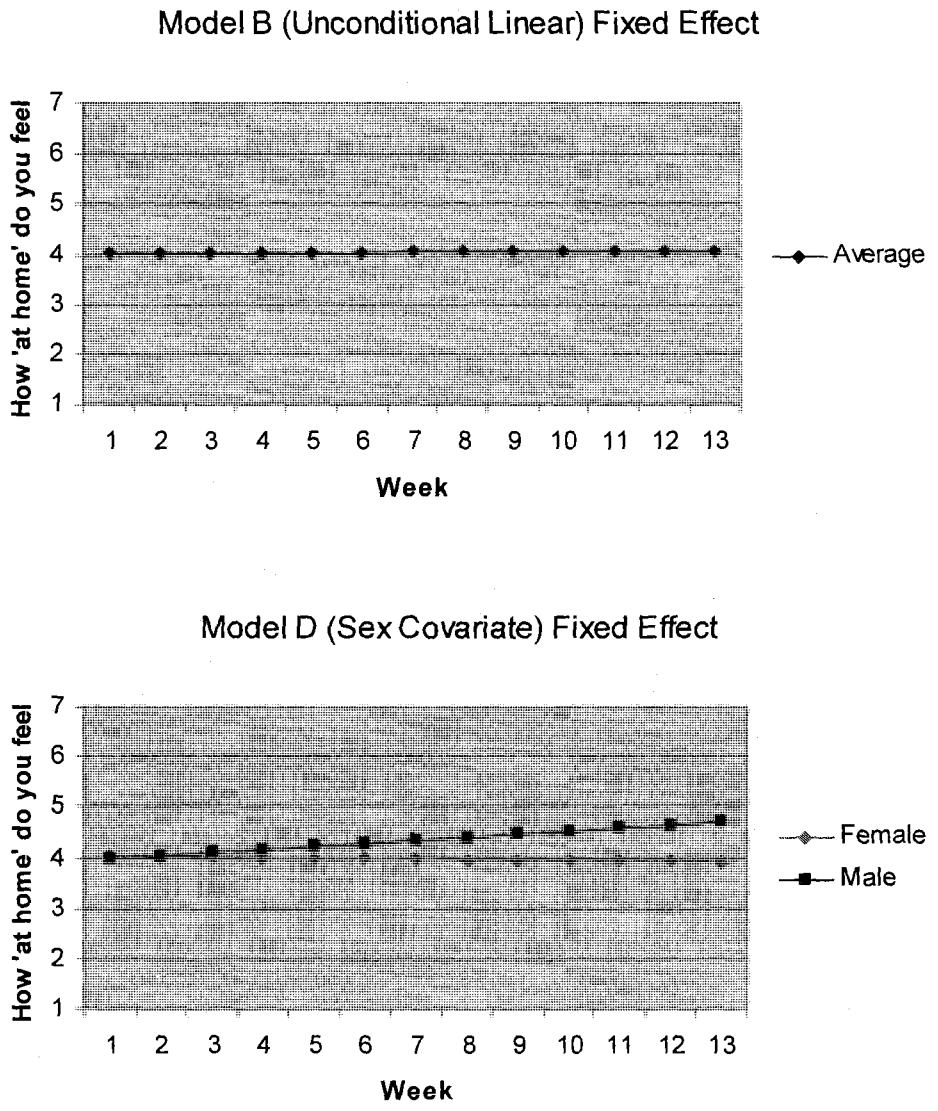


Figure 7. Fixed effects models for 'Feels Like Home' territory indicator.

sex did show differences, even those seem to suggest 'no change' for women but some increase for men.

Perceptions of Crowding

The final set of territorial indicators tested with unconditional models involved individual perceptions of crowding. A vital component of Altman's (1975) model is territoriality as a mechanism to avoid or reduce feelings of crowding. Because of the connection between territoriality and crowding, four separate questions were included to measure participant perceptions of crowding and their room's perceived carrying capacity. It was predicted that perceptions of crowding would decrease with time and that perceived carrying capacity would increase with time. A final indicator item came from Kasmar's (1970) environmental assessment adjectives. It required participants to rate their room along the Not Crowded v. Crowded continuum and was conceptually analogous to the previous public v. private indicator.

Unconditional models were tested for an indicator dealing with the number of people that can fit in the residence hall room before it feels crowded (i.e., perceived carrying capacity). Model results (Table 17) showed that the quadratic time function fit the data best with 37.2% of within-subjects variance ($R^2_1 = .478$ and $R^2_2 = .556$) being accounted for with the inclusion of time. As predicted, the perceived carrying capacity of the room increased with time, but there was a deceleration over time. Both initial status and slope had significant portions of unexplained variance between-subjects.

Conditional models for the carrying capacity indicator, and the other crowding indicators, included the TBS controlled access subscale and the PPS solitude and anonymity subscales. The TBS subscale was chosen because of the negative relationship

Table 17

Results of model fitting for Room Carrying Capacity, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	5.57(.31)*	4.72(.24)*	4.13(.27)*	4.26(.32)*	4.12(.27)*	4.13(.27)*	4.13(.27)*
SEX				-0.45(.60)			
TBS-Access					0.07(.04)		
PPS-Solitude						-0.01(.08)	
PPS-Anonymity							-0.05(.07)
Rate of change							
TIME		0.19(.04)*	0.61(.10)*	0.54(.11)*	0.61(.09)*	0.61(.10)*	0.61(.10)*
SEX				0.31(.23)			
TBS-Access					**-0.05(.01)***		
PPS-Solitude						-0.04(.03)	
PPS-Anonymity							**0.05(.02)***
Quadratic change							
$TIME^2$			-0.03(.01)*	-0.03(.01)*	-0.03(.01)*	-0.03(.01)*	-0.03(.01)*
SEX				-0.03(.23)			
TBS-Access					**0.00(.00)***		
PPS-Solitude						0.00(.00)	
PPS-Anonymity							**-0.00(.00)***
Variance Components							
Level 1							
Within person	4.94(.45)*	3.47(.39)*	3.10(.35)*	3.08(.35)*	2.91(.33)*	3.05(.34)*	3.05(.34)*
Variance Explained		(28.1%)	(9.9%)		(6.6%)		(2.2%)
Level 2							
Intercept	6.50(1.21)*	2.75(.85)*	2.81(.77)*	2.83(.77)*	3.04(.65)*	2.78(.80)*	2.78(.79)*
Variance Explained					(-10.0%)		(-1.0)
Change		0.05(.02)*	0.06(.02)*	0.05(.02)*	0.05(.02)*	0.06(.02)*	0.06(.02)*
Variance Explained					(12.2%)		(-6.3)
Deviance Statistic							
Deviance	1570.4	1494.2	1473.2	1470.2	1453.6	1470.2	1468.1
Parameters	3	6	7	9	9	9	9
Chi-Square Change		76.2	21.0	3.0	19.6	3.0	5.1
p-value		.000	.000	.223	.000	.223	.078

* = $p < .05$

outlined by Altman (1975) between the successful regulation of interaction (via controlled access) and perceptions of crowding. The inclusion of privacy preference measures was based on similar reasoning, and the individual subscales (solitude and anonymity) were picked based on the intuitive link between either enjoying solitude or preferring anonymity in groups and the perception of crowding.

Both the TBS controlled access and the PPS anonymity scales were useful model covariates for the carrying capacity indicator. Controlled access (Figure 8) improved model fit and explained an additional 12.2% of variance in slope ($R^2_1 = .003$ and $R^2_2 = .066$). Controlled access had a reducing influence on the average participant slope, with a .05 reduction for every 1-point increase in controlled access (see Table 17; Model E). In sum, the average participant with a high score on the TBS subscale had the same initial carrying capacity but that perceived carrying capacity did not increase as dramatically over time compared to those with a lower TBS controlled access score.

The inclusion of PPS anonymity also improved model fit and helped to model the average change for the carrying capacity indicator. PPS did not alter initial status but did influence the average rate of change for participants, with higher PPS anonymity scores corresponding to a steeper slope. Interestingly, the PPS covariate helped to explain very little additional variance, suggesting that it may not be as valuable as the fixed effects indicated (see Table 17; Model G). The PPS solitude subscale did not improve model fit or demonstrate any significant influence on model fixed effects over the unconditional quadratic model (see Table 17; Model F).

Three separate indicators asked participants to rate their comfort levels if their roommate had three, five, and seven visitors, respectively. In each set of models (Tables

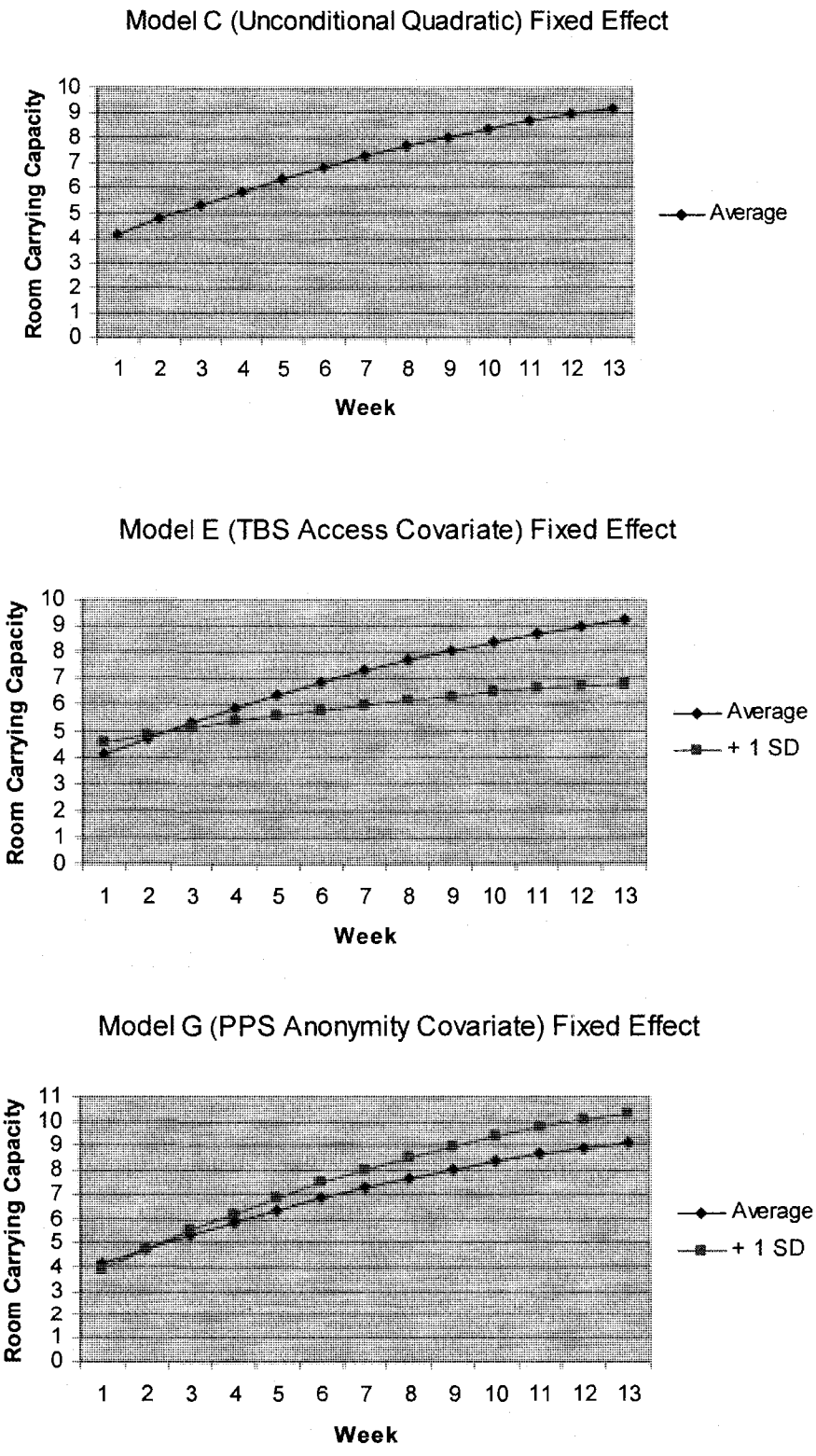


Figure 8. Fixed effects models for Room Carrying Capacity territory indicator.

18 – 20), the linear time function (Model B) contributed significantly to model fit; the quadratic function also contributed to the five-visitor scenario. In all three cases, large portions of within-person variance were explained by time (12.5%, 23.0%, and 24.6%, respectively), and significant amounts of between-subject variance in slope and initial status remained. As predicted, participant comfort with roommate visitors increased with the progression of time; these indicators were included in conditional model testing using the TBS controlled access and PPS solitude and anonymity subscales (see Tables 18 – 20; Models E – G).

For each one of these three indicators (comfort with 3, 5, and 7 roommate friends, respectively), the TBS controlled access covariate helped to explain significant portions of variance in initial status (6.5%, 4.3%, and 4.8%, respectively; R^2_1 = .024, .029, and .026, respectively; R^2_2= .063, .042, and .048, respectively) and had at least a marginal effect on model fixed effects (see Table 18 – 20; Model E).

For the 3-friend indicator, the access subscale had a marginal effect (p = .082) on initial status, with higher scores corresponding to a decrease in initial status, but had no significant effect on slope (Figure 9). The opposite was true for the 5-friend indicator in which the access covariate was marginally (p = .058) related to a reduction in slopes for every 1-point increase (Figure 10). The final indicator in this set had a significant decrease in average rate of change for higher TBS access scores (Figure 11).

PPS solitude scores did not contribute to overall model fit for any of the comfort with roommate friend indicators (see Table 18 - 20; Model F). While model fixed effects statistics showed marginally significant changes in initial status for the 3- and 7-friend

Table 18

Results of model fitting for Comfort with 3 Roommate Visitors, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	3.86(.08)*	3.70(.09)*	3.65(.11)*	3.69(.11)*	3.70(.09)*	3.70(.09)*	3.72(.09)*
SEX				0.03(.21)			
TBS-Access					**-0.03(.01)** ‡		
PPS-Solitude						**-0.05(.03)**‡	
PPS-Anonymity							**-0.04(.02)**‡
Rate of change							
TIME		0.04(.01)*	0.07(.04)‡	0.04(.02)*	0.04(.01)*	0.04(.01)*	0.04(.01)*
SEX				0.00(.03)			
TBS-Access					-0.00(.00)		
PPS-Solitude						0.01(.00)	
PPS-Anonymity							0.00(.00)
Quadratic change							
$TIME^2$			-0.00(.00)				
Variance Components							
Level 1							
Within person	0.79(.07)*	0.69(.07)*	0.69(.07)*	0.69(.07)*	0.69(.07)*	0.69(.07)*	0.69(.07)*
Variance Explained		(12.5%)			(0.4%)		
Level 2							
Intercept	0.40(.10)*	0.34(.13)*	0.34(.13)*	0.34(.13)*	0.31(.13)*	0.30(.13)*	0.30(.13)*
Variance Explained					(6.5%)		
Change		0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)	0.00(.00)
Variance Explained					(1.0%)		
Deviance Statistic							
Deviance	944.6	929.5	928.6	929.5	924.3	926.1	926.0
Parameters	3	6	7	8	8	8	8
Chi-Square Change		15.1	0.9	0.0	5.2	3.4	3.5
p-value		.002	.343	1.0	.074	.183	.174

* = $p < .05$; ‡ = $p < .085$

Table 19

Results of model fitting for Comfort with 5 Roommate Visitors, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	3.11(.10)*	2.90(.10)*	2.73(.12)*	2.77(.13)*	2.73(.11)*	2.73(.11)*	2.75(.11)*
SEX				-0.16(.26)			
TBS-Access					-0.02(.02)		
PPS-Solitude						-0.05(.04)	
PPS-Anonymity							**-0.06(.03)***
Rate of change							
TIME		0.05(.01)*	0.17(.04)*	0.16(.05)*	0.17(.04)*	0.17(.04)*	0.17(.04)*
SEX				0.06(.09)			
TBS-Access					**-0.01(.01)‡**		
PPS-Solitude						0.01(.01)	
PPS-Anonymity							**0.02(.01)‡**
Quadratic change							
$TIME^2$			-0.01(.00)*	-0.01(.00)*	-0.01(.00)*	-0.01(.00)*	-0.01(.00)*
SEX				-0.00(.01)			
TBS-Access					0.00(.00)		
PPS-Solitude						-0.00(.00)	
PPS-Anonymity							**-0.00(.00)***
Variance Components							
Level 1							
Within person	0.77(.07)*	0.62(.07)*	0.59(.06)*	0.59(.06)*	0.58(.06)*	0.59(.06)*	0.58(.06)*
Variance Explained		(17.7%)	(5.3%)		(1.7%)		(1.6%)
Level 2							
Intercept	0.71(.15)*	0.54(.15)*	0.56(.15)*	0.56(.15)*	0.54(.14)*	0.53(.15)*	0.54(.15)*
Variance Explained					(4.3%)		(2.9%)
Change		0.00(.00)*	0.01(.00)*	0.01(.00)*	0.00(.00)*	0.01(.00)*	0.01(.00)*
Variance Explained					(12.2%)		(3.6%)
Deviance Statistic							
Deviance	971.5	941.7	930.8	930.2	919.1	928.5	924.3
Parameters	3	6	7	9	9	9	9
Chi-Square Change		29.8	10.9	0.6	11.7	2.3	6.5
p-value		.000	.001	.741	.003	.317	.039

* = $p < .05$; ‡ = $p < .07$

Table 20

Results of model fitting for Comfort with 7 Roommate Visitors, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	2.32(.11)*	2.07(.11)*	2.00(.12)*	2.14(.12)*	2.07(.11)*	2.07(.10)*	2.08(.11)*
SEX				-0.26(.24)			
TBS-Access					-0.03(.02)		
PPS-Solitude						**-0.06(.03)‡**	
PPS-Anonymity							-0.04(.03)
Rate of change							
TIME		0.06(.01)*	0.11(.04)*	0.05(.02)*	0.06(.01)*	0.06(.01)*	0.06(.01)*
SEX				0.05(.04)			
TBS-Access					**-0.01(.00)***		
PPS-Solitude						0.00(.00)	
PPS-Anonymity							0.00(.00)
Quadratic change							
$TIME^2$			-0.00(.00)				
Variance Components							
Level 1							
Within person	0.79(.07)*	0.59(.06)*	0.59(.06)*	0.59(.06)*	0.59(.06)*	0.59(.06)*	0.59(.06)*
Variance Explained		(24.6%)			(0.4%)		
Level 2							
Intercept	0.82(.16)*	0.61(.15)*	0.61(.15)*	0.61(.15)*	0.58(.15)*	0.57(.15)*	0.59(.15)*
Variance Explained					(4.8%)		
Change		0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*
Variance Explained					(15.4%)		
Deviance Statistic							
Deviance	988.2	946.4	944.5	944.0	936.5	943.1	944.4
Parameters	3	6	7	8	8	8	8
Chi-Square Change		41.8	1.9	2.4	9.9	3.3	2.0
p-value		.000	.168	.301	.007	.192	.368

* = $p < .05$; ‡ = $p < .085$

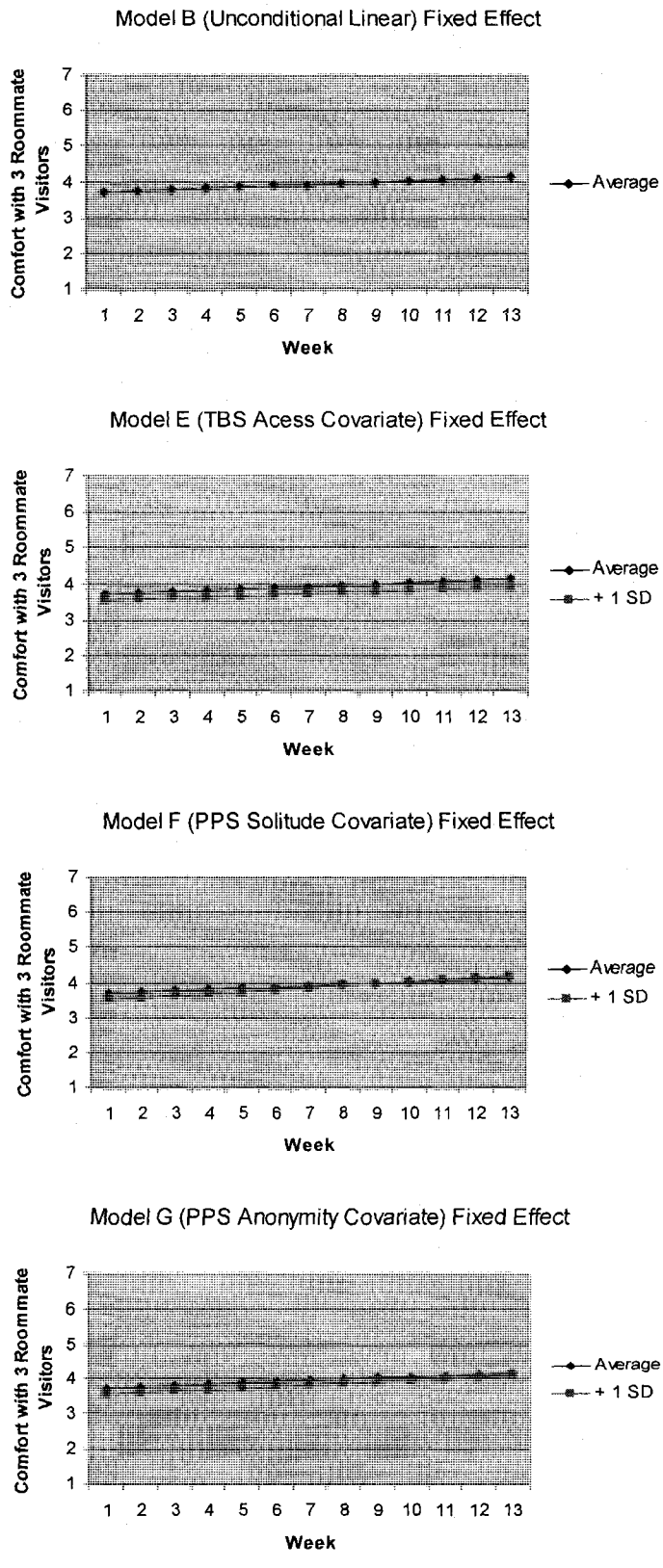


Figure 9. Fixed effects models for Comfort with 3 Roommate Visitors territory indicator.

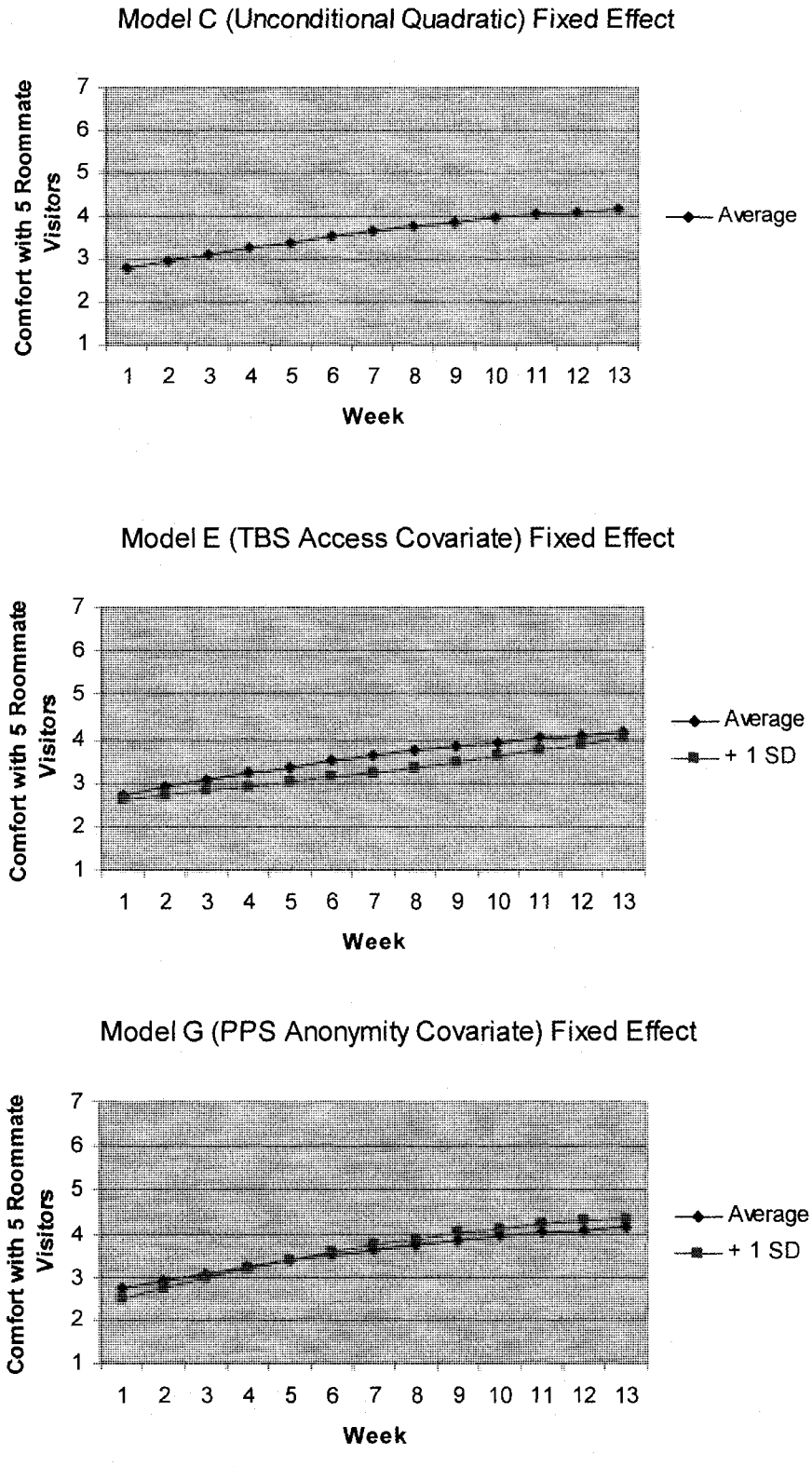


Figure 10. Fixed effects models for Comfort with 5 Roommate Visitors territory indicator.

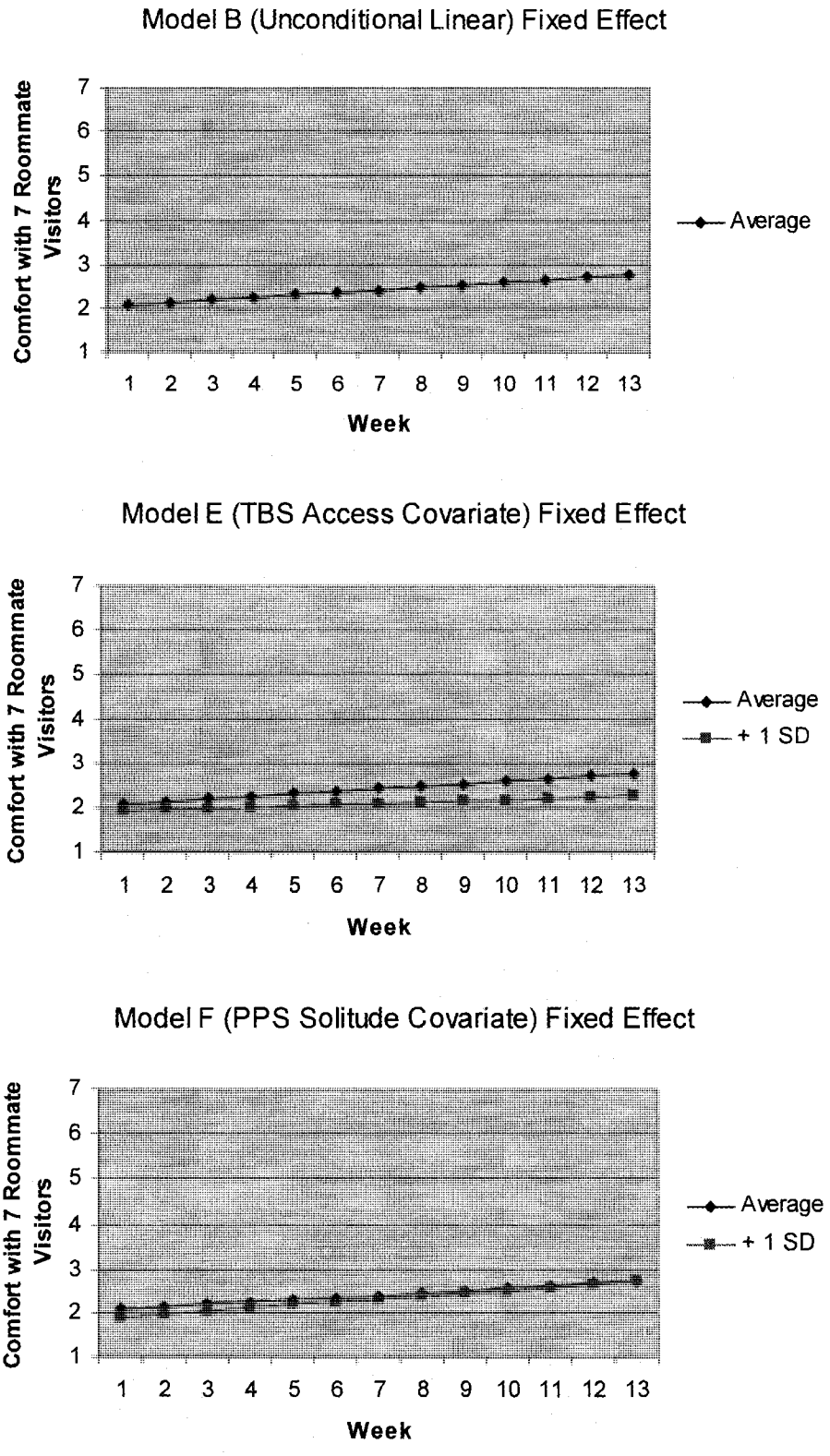


Figure 11. Fixed effects models for Comfort with 7 Roommate Visitors territory indicator.

indicators, those differing intercepts did not explain sufficient amounts of model variance to improve overall model fit statistics.

The anonymity covariate models improved upon unconditional models for the comfort with 5-friend indicator but not the 3- and 7-friend equivalents. In the significant model, the covariate explained an additional 2.9% of variance in initial status ($R^2_1 = .022$ and $R^2_2 = .029$). The model fixed effects for the 5-friend indicator suggested that higher scores for PPS anonymity related to a reduction in average initial status; rate of change was also marginally ($p = .061$) increased by higher scores for the PPS anonymity subscale on the 5-friend indicator (see Tables 18 -20; Model G).

The not crowded v. crowded environmental assessment indicator (Table 21) did not vary with time and was not included in conditional models that included predictor variables. Neither the linear nor the quadratic time functions explained significant amounts of model variance even though intraclass correlations ($\rho = .39$) suggested a large portion (61%) of within-subject variance.

Part Three: Growth Models of Student Outcomes

Analytic Procedure

Similar to Parts One and Two, the third component of Study 1 involved the testing of several unconditional and conditional growth models to assess change over time. However, rather than focusing on the theoretical component of territoriality and its timeline, Part Three dealt entirely with the applied issues of student satisfaction, health, and well-being. In this set of analyses, the outcomes of interest were perceived academic performance, overall student health, stress, loneliness, happiness, life satisfaction, roommate satisfaction, and resident hall/university satisfaction. For each of those eight

Table 21

Results of model fitting for Not Crowded v. Crowded Assessment Adjectives, time centered at Time 1

	Model A	Model B	Model C
Fixed Effects			
Initial Status			
Intercept	5.34(.12)*	5.37(.13)*	5.23(.15)*
Rate of change			
TIME		-0.01(.02)	0.10(.06)
Quadratic change			
$TIME^2$			-0.01(.00)
Variance Components			
Level 1			
Within person	1.59(.14)*	1.60(.14)*	1.59(.14)*
Variance Explained			
Level 2			
Intercept	1.00(.22)*	0.96(.22)*	0.71(.27)*
Variance Explained			
Change		0.00(.00)	0.00(.00)
Variance Explained			
Deviance Statistic			
Deviance	1288.8	1286.5	1283.4
Parameters	3	6	7
Chi-Square Change		2.3	5.4
p-value		.513	.249

* = $p < .05$

student outcomes a set of three unconditional models were tested to assess change over time and the best fitting shape (linear or quadratic) for the model, as detailed below for Tables 22 – 29, Models A – C. The best fitting unconditional model for each outcome was then tested with the addition of some of the territorial covariates from Parts One and Two. Each set of covariates was chosen based on previous research and relevant theory linking the territorial covariate to the student outcome. Once again, the variance explained statistics are proportional calculations based on Singer and Willett (2003), but Snijders and Bosker's (1999) R^2 is reported for all significantly improved models.

Academic and Health Outcomes

The first two student outcomes were the most general in nature and targeted perceived academic achievement compared to their peers and their perceived overall level of health. These two were chosen to represent the more common outcomes used when dealing with student populations. Perceived academic achievement relative to peers was used instead of more objective indicators (current GPA, test scores) because the current Honors sample showed very little variability in those items. Perceived overall health was used for similar reasons in that objective measures (# of illnesses, # doctor visits) did not vary substantially.

Perceived academic achievement compared to others was best modeled using a linear time function with the average achievement score increasing as the semester progressed (Table 22, Figure 12). The linear time function also helped to explain 29.0% of within-subject variance while the quadratic did not explain additional within-subject variance. Significant amounts of variance remained for all within-subject and between-subject effects after the inclusion of the linear component. Conditional models were then

Table 22

Results of model fitting for Perceived Academic Achievement, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F
Fixed Effects						
Initial Status						
Intercept	3.54(.05)*	3.40(.07)*	3.40(.11)*	3.40(.07)*	3.41(.07)*	3.41(.07)*
Rate of change						
TIME		0.02(.01)*	0.03(.04)	0.02(.01)*	0.02(.01)*	0.02(.01)
Quadratic Change						
$TIME^2$			0.00(.00)			
Time Varying Covariates						
Contact Seeking				0.01(.02)		
Contact Avoiding					0.02(.02)	
Public v. Private						-0.02(.02)
Variance Components						
Level 1						
Within person	0.28(.03)*	0.20(.03)*	0.20(.03)*	0.20(.03)*	0.20(.03)*	0.19(.03)*
Variance Explained		(29.0%)				
Level 2						
Intercept	0.10(.03)*	0.19(.08)*	0.19(.08)*	0.19(.08)*	0.19(.08)*	0.19(.08)*
Variance Explained						
Change		0.00(.00)*	0.00(.00)*	0.00(.00)*	0.00(.00)*	0.00(.00)*
Variance Explained						
Deviance Statistic						
Deviance	462.4	441.7	441.7	441.4	440.4	441.0
Parameters	3	6	7	7	7	8
Chi-Square Change		20.7	0.0	0.3	1.3	2.9
p-value		.000	1.00	.584	.254	.235

* = $p < .05$

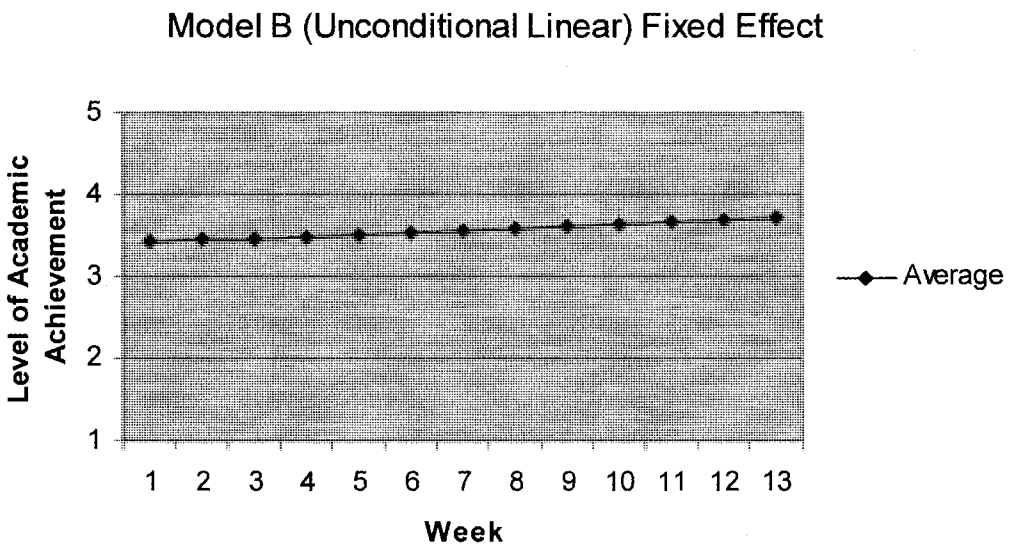


Figure 12. Fixed effects model for Perceived Academic Achievement student outcome.

tested using the linear model as the best fitting comparison and the territorial indicators of contact seeking behaviors, contact avoiding behaviors, and perception of public v. private space as covariates (see Table 22; Models D – F). These three were chosen based on the theoretical link between successful privacy regulation and successful study habits within the residence hall setting, and it was believed that increased ability to regulate social interaction (i.e., achieve privacy) would relate to higher perceived academic achievement.

Conditional models that included the contact seeking, contact avoiding behaviors, and the public v. private assessment did not significantly improve upon the unconditional linear model for academic achievement and did not explain significant portions of variance. For all three models, the fixed effects for the covariates were not significantly different from zero (see Table 22; Models D – F).

Overall student health also changed with time and was best modeled using a quadratic function (Table 23). Inclusion of the quadratic function explained 5.1% more within-subject variance than the linear function ($R^2_1 = .009$ and $R^2_2 = .028$) and the fixed effects indicated a significant decrease in health with the passage of time but that decrease became less pronounced, too (Figure 13). The random effects suggested significant amounts of variance were still present both within-subjects and in between-subject initial status (see Table 23; Model C). The quadratic model was employed for all conditional model testing using the territory indicators of public v. private space, inclusion of self in current room, and 'feels like home.'

All three covariates tested were chosen because of the assumed link between a stronger territorial connection and improved health, but only one of the conditional models supported this assumption (see Table 23; Models D – F). Models that included

Table 23

Results of model fitting for Overall Health, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F
Fixed Effects						
Initial Status						
Intercept	8.22(.12)*	8.37(.14)*	8.51(.14)*	8.50(.15)*	8.52(.15)*	8.53(.15)*
Rate of change						
TIME		-0.03(.01)*	-0.13(.03)*	-0.11(.04)	-0.13(.04)*	-0.13(.03)*
Quadratic change						
$TIME^2$			0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*
Time Varying Covariates						
Public v. Private				-0.04(.03)		
Self-Room Inclusion					0.01(.04)	
'Feels like home'						**-0.30(.14)***
'Feels like home' X TIME						**0.10(.04)***
'Feels like home' X $TIME^2$						**-0.01(.00)***
Variance Components						
Level 1						
Within person	0.58(.05)*	0.45(.05)*	0.42(.05)*	0.42(.05)*	0.42(.05)*	0.40(.04)*
Variance Explained		(23.6%)	(5.1%)			(4.9%)
Level 2						
Intercept	1.03(.19)*	1.37(.26)*	1.41(.26)*	1.42(.26)*	1.41(.26)*	1.52(.29)*
Variance Explained						
Change		0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*	0.01(.00)*
Variance Explained						
Deviance Statistic						
Deviance	961.1	940.7	932.3	931.0	932.3	925.9
Parameters	3	6	7	8	8	9
Chi-Square Change		20.4	8.4	1.2	0.0	6.4
p-value		.019	.004	.273	1.00	.041

* = $p < .05$

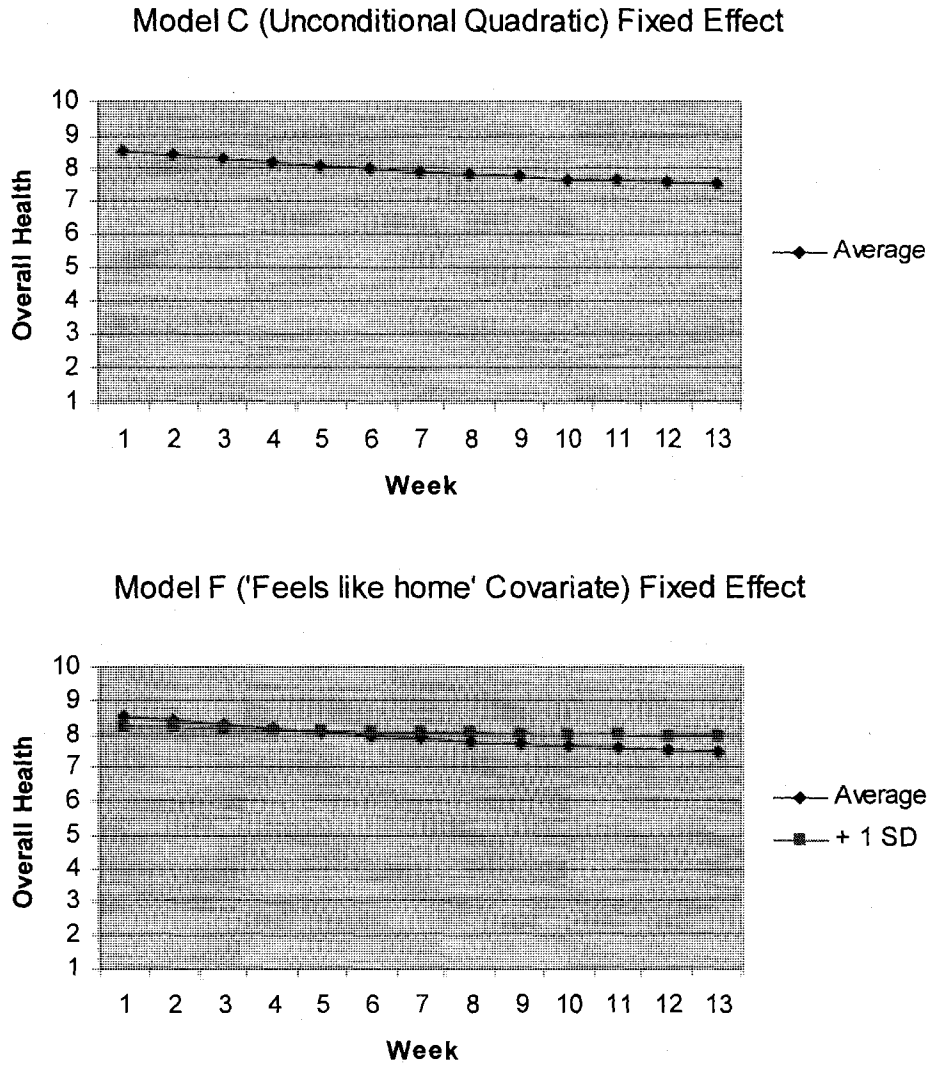


Figure 13. Fixed effects models for Overall Health student outcome.

the public v. private and current room inclusion covariates did not improve model fit nor explain additional variance. The 'feels like home' covariate did improve model fit and had both a significant main effect and a time x covariate interaction. Higher scores for this indicator related to lower overall health ratings at Time 1, but the size of that decrement became smaller in later time points (Figure 13). A quadratic time x covariate interaction was also found to be significant which means that the lessening of the negative effect over time found for the time x covariate interaction also becomes less pronounced with time. In the course of this study, the negative effect of the 'feels like home' covariate reversed itself and was related to a positive effect on health.

Student Stress and Loneliness

Two student outcomes of perceived stress and perceived loneliness were also modeled for change during the first semester. These negative components of the college student experience have been related to problems in first-year student adjustment and overall persistence so were of direct interest in Part Three (Bean & Eaton, 2001; Nora et al., 1996). This project predicted that some of that stress and loneliness occurs as result of both lack of privacy and perceptions of crowding so territorial indicators related to those domains were tested for both of these outcomes in conditional models. This prediction was based on research indicating that a strong sense of privacy relates to lower stress and a heightened ability to control and maintain social interactions (Haggard & Werner, 1990; Newell, 1998; Vinsel et al., 1980). The perception of crowding has often been related to a higher stress response (D'Atri, 1975; Epstein, 1982; Gomez-Jacinto & Hombrados-Mendieta, 2002; Lepore, Evans, & Palsane, 1991).

The unconditional models for perceived stress (Table 24 and Figure 14) indicated that the linear time function explained significant amounts of within-person model variance (33.9% of variance) and significantly improved model fit, but the fixed effects indicated that, on average, time did not explain changes in perceived stress (Model B). The quadratic time function did not improve model fit over the linear time component so further conditional model testing was carried out using the linear model because of the model improvement. The territorial covariates of contact seeking behaviors, public v. private space assessment, room carrying capacity, and not crowded v. crowded space assessment were tested in separate conditional models of perceived stress (see Table 24; Models D – G).

Both the contact seeking behaviors and the public v. private space assessment indicators appeared to have no significant effect on perceived stress (see Table 24, Models D and E). Fixed effects for both covariate models showed no significant effect of the covariate upon ratings of perceived stress. Model fit statistics were also not improved upon with the addition of either covariate.

Two additional conditional models that included crowding covariates were tested on the linear perceived stress outcome. The room carrying capacity indicator did not help to account for significant amounts of variance in perceived stress. The final conditional model included the environmental assessment item related to the space being along the crowded–not crowded continuum. This territorial indicator was shown in Part One not to vary with time but because multiple measurements were taken for this variable across time, it too was treated as a time variant covariate for this model. Results showed that this covariate did not explain additional variance and that overall model fit was not improved

Table 24

Results of model fitting for Perceived Stress, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F	Model G
Fixed Effects							
Initial Status							
Intercept	24.84(.58)*	24.37(.70)*	24.73(.94)*	24.42(.70)*	24.17(.71)*	24.40(.70)*	24.50(.72)*
Rate of change							
TIME		0.09(.09)	-0.07(.29)	0.09(.09)	0.09(.09)	0.09(.09)	0.07(.09)
Quadratic change							
$TIME^2$			0.01(.02)				
Time Varying Covariates							
Contact Seeking				-0.09(.19)			
Public v. Private					0.32(.19)		
Carrying Capacity						0.04(.13)	
Not Crowded/Crowded							-0.07(.33)
Variance Components							
Level 1							
Within person	15.85(1.70)*	10.48(1.43)*	10.44(1.43)*	10.54(1.44)*	10.38(1.42)*	10.41(1.44)*	10.40(1.42)*
Variance Explained		(33.9%)					
Level 2							
Intercept	24.16(3.48)*	31.44(6.81)*	31.52(6.81)*	31.18(6.79)*	31.69(6.85)*	31.56(6.89)*	30.62(6.69)*
Variance Explained							
Change		0.28(.09)*	0.29(.09)*	0.28(.09)*	0.28(.09)*	0.29(.09)*	0.26(.09)*
Variance Explained							
Deviance Statistic							
Deviance	1632.9	1614.6	1614.3	1614.4	1612.0	1614.5	1610.3
Parameters	3	6	7	7	7	7	8
Chi-Square Change		18.3	0.3	0.2	2.6	0.1	4.3
p-value		.000	.584	.655	.107	.752	.117

* = $p < .05$; ‡ = $p < .085$

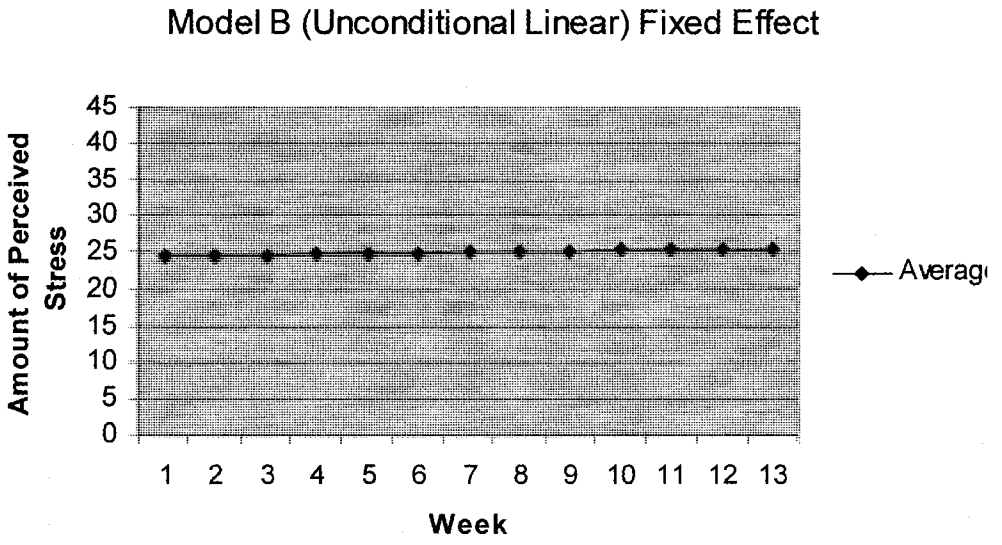


Figure 14. Fixed effects model for Perceived Stress student outcome.

(see Table 24; Model G). Territorial indicators did not seem to have an impact on levels of perceived stress.

Loneliness was the second negative student outcome of interest in Part Three of this project and models for this outcome can be found in Table 25. The unconditional linear model significantly improved model fit and explained 23.9% more within-subjects variance than the unconditional means model, and the quadratic model did not improve upon the linear model (see Table 25; Models A – C). As a result, conditional models that utilized the territoriality covariates of amount of personalization compared to others, 'feels like home,' and room carrying capacity were tested using the linear time function.

Research by Vinsel et al. (1980) suggested that personalizations signaled student retention or withdrawal by indicating whether they felt attached to the university (by having lots of university focused personalizations) or were still focused on home (by having more home based personalizations). Because of that research, it was predicted that both the amount of personalizations and 'feels at home' indicator were negatively related to student loneliness. The carrying capacity indicator was included in model testing under the assumption that more comfort with more people in the room would correspond to lower loneliness.

The inclusion of the amount of room personalization covariate explained an additional 3.2% of within-subject variance in loneliness ($R^2_1 = .046$ and $R^2_2 = .053$) and decreased the average participant's loneliness score by .84 for every 1-point increase in amount of personalization (see Table 25; Model D and Figure 15). This significant main effect for the covariate indicated that the effect of amount of personalization on loneliness scores was consistent across time points. Similar results were found for the

Table 25

Results of model fitting for Loneliness, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F
Fixed Effects						
Initial Status						
Intercept	39.00(.82)*	40.15(.82)*	40.66(.89)*	39.97(.80)*	40.29(.79)*	39.60(.80)*
Rate of change						
TIME		-0.26(.09)*	-0.59(.24)*	-0.21(.09)*	-0.26(.09)*	-0.17(.09)*
Quadratic change						
$TIME^2$			0.03(.02)			
Time Varying Covariates						
Personalization				**-0.84(.25)***		
'Feels like home'					**-2.21(.50)***	
Carrying Capacity						**-0.52(.15)***
Variance Components						
Level 1						
Within person	27.96(2.54)*	21.28(2.31)*	21.02(2.28)*	20.61(2.22)*	20.65(2.24)*	21.83(2.37)*
Variance Explained		(23.9%)		(3.2%)	(3.0%)	(-2.6%)
Level 2						
Intercept	52.09(9.19)*	47.26(8.89)*	47.41(9.51)*	44.70(9.02)*	42.07(8.67)*	40.91(8.74)*
Variance Explained						
Change		0.25(.10)*	0.25(.10)*	0.28(.11)*	0.26(.10)*	0.19(.09)*
Variance Explained						
Deviance Statistic						
Deviance	2254.6	2225.7	2223.5	2215.1	2207.8	2213.6
Parameters	3	6	7	7	7	7
Chi-Square Change		28.9	2.2	10.6	17.9	12.1
p-value		.000	.138	.001	.000	.001

* = $p < .05$

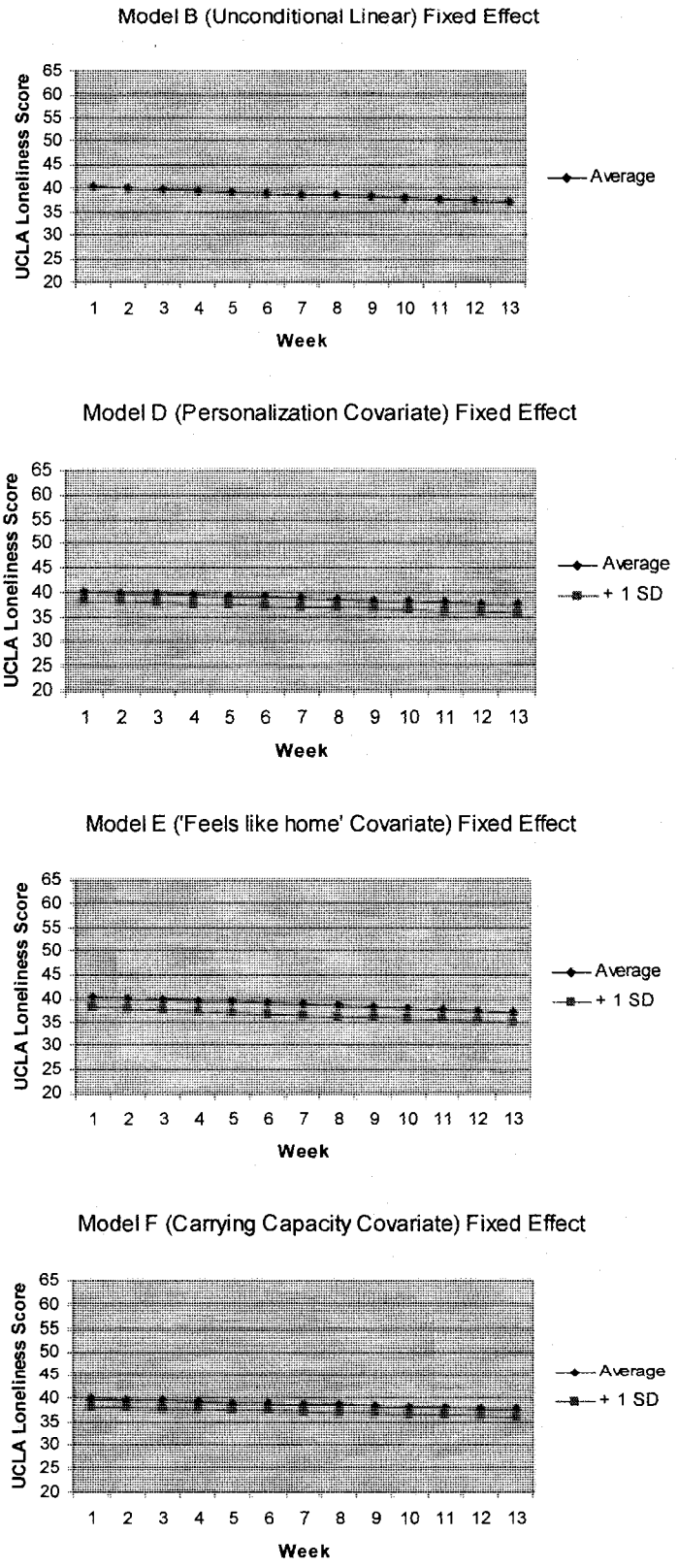


Figure 15. Fixed effects models for Loneliness student outcome.

'feels like home' covariate—3.0% of within-subject variance in loneliness was explained (R^2_1 = .084 and R^2_2= .108) and the covariate had a consistent effect of lowering loneliness scores 2.21 points for every 1-point increase in the covariate at any given time point (see Table 25; Model E). Also as predicted, the room carrying capacity covariate had a consistent reducing effect on participant loneliness scores. Specifically, loneliness scores were .52 lower for every 1-person increase on the carrying capacity covariate at any given time (see Table 25; Model F; R^2_1 = .085 and R^2_2= .134). To summarize, all three covariates improved upon the unconditional loneliness model and indicated that more personalizations, stronger feelings of being at home, and perceiving a higher carrying capacity for the room related to consistently lower feelings of loneliness.

Individual Student Happiness and Satisfaction

Half of the student outcomes in this project involved positive aspects of student living and focused on student happiness, life satisfaction, roommate satisfaction, and resident hall/university satisfaction. For this section, the individual level outcomes of student happiness and life satisfaction are presented. While stress and loneliness relate to withdrawal from the university, satisfaction and happiness have been shown to be protective factors and predictors of long-term student persistence (Astin, 1977a; Lovejoy et al., 1995; Nora et al., 1996; Vinsel et al., 1980).

The subjective happiness outcome (Table 26) was best modeled using the linear time function, but the fixed effects indicated that the average participant score did not change with time. Model fit statistics suggested an improved fit and the linear component explained 20.4% of within-subjects variance so all conditional models were tested using the linear time function (see Table 26; Model A – C).

Table 26

Results of model fitting for Subjective Happiness, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F
Fixed Effects						
Initial Status						
Intercept	20.98(.41)*	21.18(.42)*	21.28(.44)*	21.19(.42)*	21.03(.43)*	21.15(.41)*
Rate of change						
TIME		-0.05(.03)	-0.12(.09)	-0.04(.03)	-0.02(.03)	-0.05(.03)
Quadratic change						
$TIME^2$			0.01(.01)			
Time Varying Covariates						
Public v. Private				**-0.13(.08)‡**		
Self-Room Inclusion					**-0.22(.12)‡**	
Self-Room Inclusion X TIME					**0.07(.02)***	
'Feels like home'						**0.61(.19)***
Variance Components						
Level 1						
Within person	3.43(.31)*	2.73(.29)*	2.72(.29)*	2.72(.29)*	2.67(.28)*	2.72(.29)*
Variance Explained		(20.4%)		(0.2%)	(0.5%)	(0.4%)
Level 2						
Intercept	14.46(2.30)*	14.72(2.46)*	14.74(2.46)*	14.49(2.43)*	14.95(2.50)*	13.58(2.31)*
Variance Explained						
Change		0.03(.01)*	0.03(.01)*	0.03(.01)*	0.03(.01)*	0.03(.01)*
Variance Explained						
Deviance Statistic						
Deviance	1629.6	1615.3	1614.6	1612.5	1606.7	1605.7
Parameters	3	6	7	7	8	7
Chi-Square Change		14.3	0.7	2.8	8.6	9.6
p-value		.003	.403	.094	.014	.002

* = $p < .05$; ‡ = $p < .095$

The first conditional model tested included the public v. private space assessment as a covariate, which was predicted to have a positive effect on happiness scores. This was based on research relating both control and privacy attainment to psychological and emotional well-being (Haggard & Werner, 1990; Seligman, 1991; Tangney et al., 2004). Results indicated that the public v. private space covariate marginally improved model fit ($p = .094$) and explained significant amounts of variance, but did not support the prediction for the model (Model D). The marginally significant main effect of the covariate on happiness was negative and consistent across time. Higher ratings on the public v. private continuum related to a .13 decrease in happiness per unit of increase.

Two other conditional models were tested for the subjective happiness outcome. Both of those models included covariates focused more specifically on student attachment to the room and 'feeling at home' because previous research by Edney and colleagues suggested that territorial attachment related to more pleasant feelings and increased resident happiness (e.g., Edney, 1975; Edney & Buda, 1976; Edney & Uhlig, 1977).

The first room attachment conditional model had the inclusion of self in the residence hall room indicator as the covariate and supported the previous research. This conditional model had a significant main effect for the covariate as well as a significant time x covariate interaction ($R^2_1 = .010$ and $R^2_2 = .015$). Higher inclusion of self with the room was related to lower levels of happiness at Time 1 and that decrease in happiness due to the covariate becomes smaller at later time points (Figure 16). For example, at Time 1, a 1-point increase in inclusion of the self with the residence hall room lowered

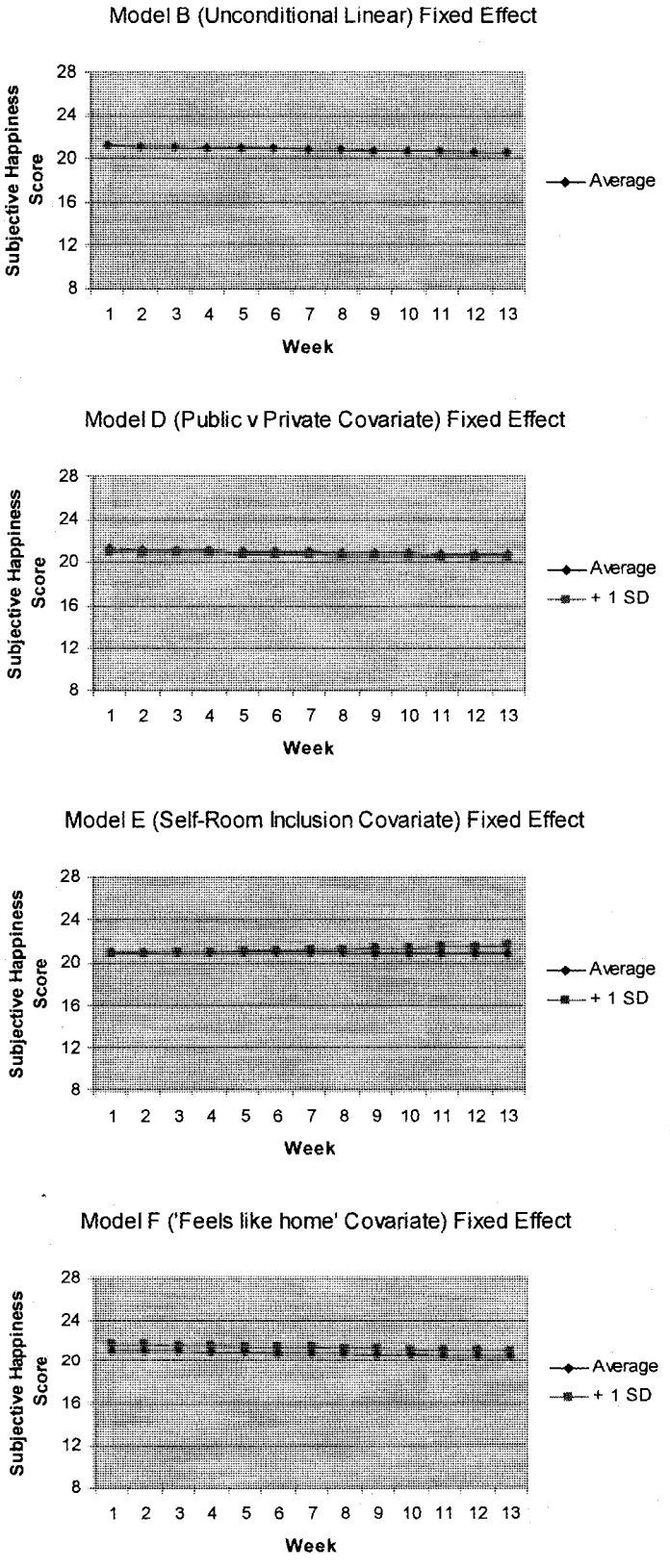


Figure 16. Fixed effects models for Subjective Happiness student outcome.

happiness rating by .22 points. That same 1-point increase in the covariate above the average at time 3 related to a meager .01 point decrease in happiness ratings.

The 'feels like home' territory indicator was entered as a covariate for happiness scores and explained an additional 0.4% of within-subject variance (R^2_1 = .066 and R^2_2= .077). Model statistics showed a significant main effect for the 'feels like home' covariate indicating it has a consistent effect across time (see Table 26; Model F). Specifically, happiness scores were, on average, .61 points higher for every 1-point increase in scores for the 'feels like home' variable across time points.

Life satisfaction was another student outcome of interest, and the unconditional linear time model improved upon the unconditional means model (Table 27, Figure 17). The linear time function explained 18.6% of within-subject variance and fit statistics suggested significant improvement over the means models. Model fixed effects indicated a significant change in scores over time (see Table 27; Model B). Conditional models using the linear function were carried out using the same three covariates used in the happiness conditional models.

The public v. private covariate model (see Table 27; Model D) improved upon the unconditional linear model (R^2_1 = .010 and R^2_2= .015). However, the fixed effects showed that the effect of higher private space assessment scores on life satisfaction was not significantly different from zero. Interestingly, the significant time x covariate interaction indicated that the non-significant effect of the covariate at Time 1 would get larger (i.e., more negative) with time, suggesting an eventually significant impact. Similar results were found for the inclusion of self with room covariate model. The addition of the covariate significantly improved model fit statistics and explained additional variance

Table 27

Results of model fitting for Life Satisfaction, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F
Fixed Effects						
Initial Status						
Intercept	26.75(.52)*	26.47(.56)*	26.32(.58)*	26.49(.56)*	26.72(.55)*	26.43(.54)*
Rate of change						
TIME		0.07(.04)*	0.16(.12)	0.11(.04)*	0.06(.04)	0.07(.04)
Quadratic change						
$TIME^2$			-0.01(.01)			
Time Varying Covariates						
Public v. Private				-0.02(.13)		
Public v. Private X TIME				**-0.07(.02)***		
Self-Room Inclusion					**0.43(.14)***	
'Feels like home'						**0.76(.26)***
Variance Components						
Level 1						
Within person	5.86(.53)*	4.77(.53)*	4.76(.53)*	4.86(.55)*	4.79(.53)*	4.66(.52)*
Variance Explained		(18.6%)		(-1.9%)	(-0.4%)	(2.4%)
Level 2						
Intercept	23.21(3.77)*	25.52(4.38)*	25.52(4.38)*	25.14(4.34)*	23.84(4.15)*	23.61(4.12)*
Variance Explained						
Change		0.05(.02)*	0.05(.02)*	0.03(.02)	0.05(.02)*	0.06(.03)*
Variance Explained						
Deviance Statistic						
Deviance	1806.3	1795.5	1794.8	1781.6	1786.3	1787.1
Parameters	3	6	7	8	7	7
Chi-Square Change		10.8	0.7	13.9	9.2	8.4
p-value		.013	.403	.001	.002	.004

* = $p < .05$

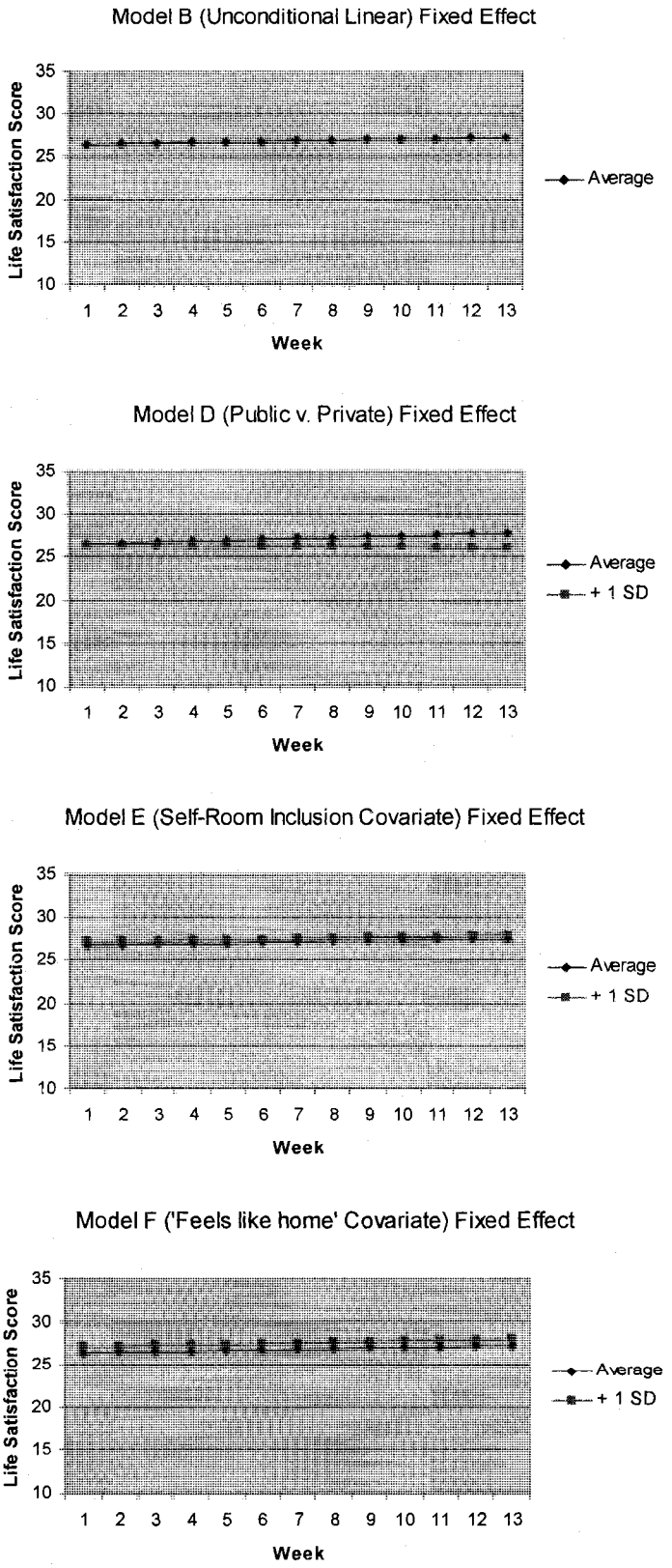


Figure 17. Fixed effects models for Life Satisfaction student outcome.

(R^2_1 = .055 and R^2_2= .066). A main effect of the covariate for this model showed a significant increase in life satisfaction scores corresponding to higher inclusion scores (see Table 27; Model E). The size of the increase in life satisfaction scores was consistent across all time points.

The final conditional model that included the 'feels like home' indicator showed slightly more powerful results in explaining satisfaction scores (R^2_1 = .066 and R^2_2= .074). Results for the conditional model showed a main effect corresponding to a consistent increase in life satisfaction scores with elevated ratings on the 'feels like home' covariate. Specifically, a 1-point increase in 'feels like home' scores corresponded to satisfaction scores that were 0.76 points higher than the average rating (see Table 27; Model F). Altogether, the three conditional models for life satisfaction suggested that privacy and territoriality may improve student satisfaction but not to a very large extent.

Student Roommate and Resident Hall Satisfaction

The final two outcomes of interest went beyond the individual student and assessed satisfaction with both the participant's roommate and the residence hall/university. Having positive roommate interactions and a positive view of the residence hall has been shown to improve student retention (e.g., Berger, 1997; Vinsel et al., 1980) and therefore relevant to this project.

Roommate satisfaction (Table 28) was best modeled with a linear time function that helped to explain 33.7% of within-subject variance. Conditional models were created using the linear time function and contact seeking behaviors, contact avoiding behaviors, public v. private space assessment, and 'feels like home' as covariates.

Table 28

Results of model fitting for Roommate Satisfaction, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F
Fixed Effects						
Initial Status						
Intercept	14.03(.15)*	14.43(.18)*	14.39(.26)*	14.38(.18)*	14.42(.18)*	14.50(.18)*
Rate of change						
TIME		-0.07(.03)*	-0.05(.09)	-0.07(.03)*	-0.07(.03)*	-0.07(.03)*
Quadratic change						
$TIME^2$			-0.00(.01)			
Time Varying Covariates						
Contact Seeking				**0.18(.08)***		
Contact Seeking X TIME				**-0.03(.01)***		
Contact Avoiding					-0.05(.06)	
Public v. Private						**-0.09(.06)‡**
Variance Components						
Level 1						
Within person	1.54(.16)*	1.02(.14)*	1.02(.14)*	1.00(.13)*	1.02(.14)*	1.02(.14)*
Variance Explained		(33.7%)		(1.6%)		(0.1%)
Level 2						
Intercept	1.48(.31)*	1.50(.44)*	1.51(.44)*	1.42(.41)*	1.49(.43)*	1.41(.43)*
Variance Explained						
Change		0.02(.01)*	0.02(.01)*	0.02(.01)*	0.02(.01)*	0.02(.01)*
Variance Explained						
Deviance Statistic						
Deviance	989.2	957.0	956.9	950.5	956.2	954.2
Parameters	3	6	7	8	7	7
Chi-Square Change		32.2	0.1	6.5	0.8	2.8
p-value		.000	.752	.039	.371	.094

* = $p < .05$; ‡ = $p < .095$

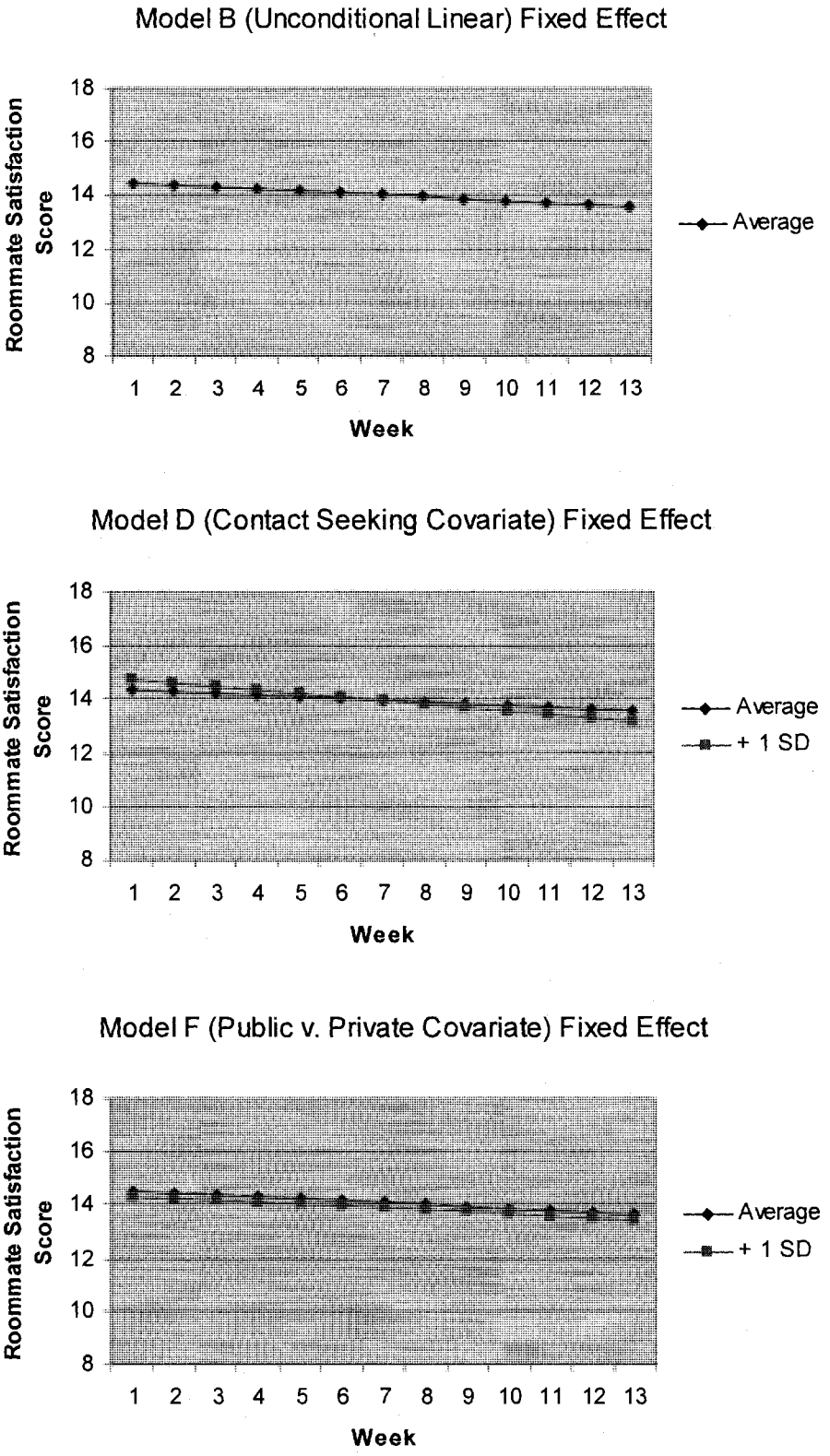


Figure 18. Fixed effects models for Roommate Satisfaction student outcome.

By including contact seeking behaviors as a covariate in a conditional model, significant amounts of additional variance were explained (R^2_1 = .041 and R^2_2= .058). Fixed effect statistics indicated that the contact seeking covariate had a positive main effect on roommate satisfaction scores beginning at Time 1 but that the size of the effect diminished at later time points because of a time x contact seeking interaction (see Table 28; Model D and Figure 18). Results for the contact avoiding covariate model suggested no effect of contact avoiding behaviors on roommate satisfaction (see Table 28; Model E)

Roommate satisfaction was also conditionally modeled with the public v. private covariate, and results showed a decrease in average roommate satisfaction for every 1-point increase in public v. private space assessment (see Table 28; Model F). Participants who viewed their room as more private also viewed their roommate less favorably. This effect of the covariate was consistent for all time periods and the inclusion of this covariate improved model fit (R^2_1 = .039 and R^2_2= .006).

The final student outcome was taken from Vinsel et al. (1980) and dealt directly with student satisfaction with the larger residence hall and university. The conditional models for this outcome included the three broadest covariates that coincided with Altman's (1975) theoretical model—privacy, territoriality, and crowding. Specifically, the public v. private space assessment, the 'feels like home,' and the room carrying capacity indicators were used as covariates in conditional models of the residence hall/university satisfaction outcome (Table 29).

In testing the first three unconditional models, model fit statistics suggested that residence hall/university satisfaction was best modeled with the linear time function. That unconditional linear model explained 18.6% of within-subject variance, but the fixed

Table 29

Results of model fitting for Residence Hall/University Satisfaction, time centered at Time 1

	Model A	Model B	Model C	Model D	Model E	Model F
Fixed Effects						
Initial Status						
Intercept	57.80(.62)*	58.06(.66)*	57.83(.87)*	58.34(.64)*	57.89(.57)*	58.17(.65)*
Rate of change						
TIME		-0.05(.07)	0.05(.26)	-0.05(.06)	-0.04(.06)	-0.07(.07)
Quadratic change						
$TIME^2$			-0.01(.02)			
Time Varying Covariates						
Public v. Private				**-0.44(.17)***		
'Feels like home'					**2.41(.34)***	
Carrying Capacity						**0.23(.11)***
Variance Components						
Level 1						
Within person	10.62(1.15)*	8.64(1.12)*	8.63(1.12)*	8.93(1.18)*	8.33(1.10)*	9.04(1.21)*
Variance Explained		(18.6%)		(-3.4%)	(3.6%)	(-4.6%)
Level 2						
Intercept	30.01(5.07)*	29.14(5.96)*	29.15(5.96)*	25.51(5.64)*	19.19(4.54)*	26.47(5.77)*
Variance Explained						
Change		0.10(.05)*	0.10(.05)*	0.09(.05)*	0.08(.05)*	0.08(.05)*
Variance Explained						
Deviance Statistic						
Deviance	1583.1	1574.8	1574.6	1568.8	1531.1	1570.5
Parameters	3	6	7	7	7	7
Chi Square Change		8.3	0.2	6.0	43.7	4.3
p value		.040	.655	.014	.000	.038

* = $p < .05$

effects indicated that time did not, on average, relate to a change in residence hall/university satisfaction (Figure 19). Nonetheless, the unconditional linear model was used for the testing of conditional models that included a territorial indicator covariate.

The main effect of public v. private covariate related to an average decrease of .44 points in satisfaction for every 1-point move toward the private end of the continuum (R^2_1 = .089 and R^2_2= .124). The amount of decrease in satisfaction scores related to elevated privacy ratings was consistent for all time points. Results for this model do not support initial predictions that stated increased privacy would boost satisfaction ratings (see Table 29; Model D).

The 'feels like home' indicator was included as a covariate for resident hall satisfaction models because it was believed to be the broadest single measure of territoriality. Results indicated that the more the average participant felt at home, the more satisfied with the residence hall and university that participant also felt. Specifically, satisfaction scores were 2.41 points higher for every 1-point increase in 'feels like home' scores (R^2_1 = .272 and R^2_2= .340; see Table 29; Model E). This effect of the 'feels at home' covariate on residence hall/university satisfaction was consistent across time and in the predicted direction (Figure 19).

Residence hall and university satisfaction was also modeled significantly better with the inclusion of the perceived room carrying capacity covariate, and initial predictions of higher perceived carrying capacity being related to higher satisfaction were supported (see Table 29; Model F). This covariate explained substantial amounts of additional variance (R^2_1 = .061 and R^2_2= .091) and had a consistent positive effect on residence hall and university satisfaction scores. In summary, all three proxies for

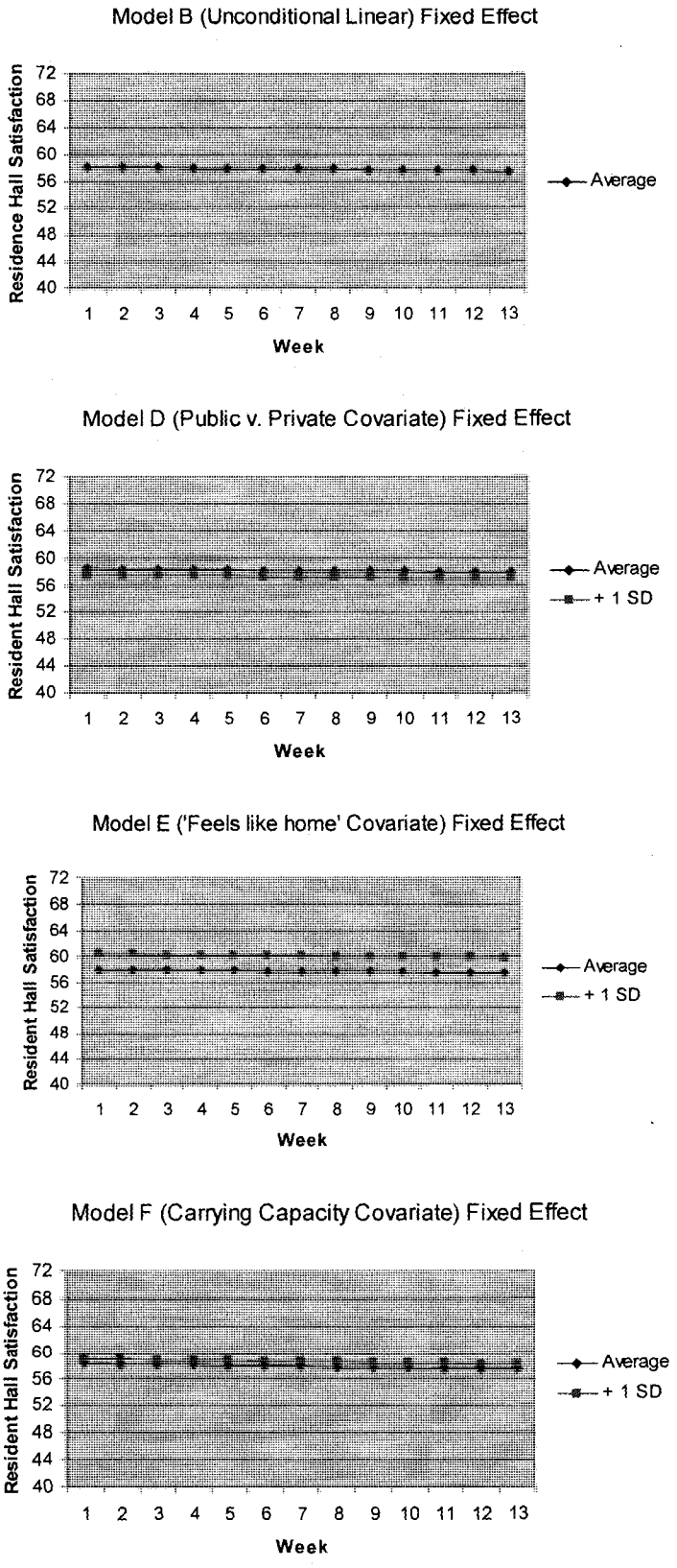


Figure 19. Fixed effects models for Resident Hall Satisfaction student outcome.

Altman's theoretical model improved model fit for residence hall satisfaction and had a consistent positive effect on satisfaction scores.

DISCUSSION

Study 1 was designed to explore two specific questions regarding the process of establishing a sense of psychological ownership, or territoriality, over time. Specifically, a longitudinal design was used to assess (1) which territory indicators would change with time, and (2) what role personality and experience predictors might play in that process of change.

The first question asked which territory indicators would change with time and was initially answered quite nicely with the data available. Of the 17 territory indicators chosen for analysis in this project, 11 of them were shown to change significantly over time or at least be modeled significantly better by the inclusion of a time component. These indicators covered a wide range of territoriality behaviors and related constructs including the privacy components of contact seeking/avoidant behaviors, the territory component of self-room inclusion, and the crowding component of perceived room carrying capacity.

Some of these indicators demonstrated very large changes while others were less pronounced. For example, unconditional models showed that public v. private environmental assessment and perceived room carrying capacity scores doubled, or nearly doubled, over the course of the 13-week study (see Figures 3 and 8) while the previous residence self-room inclusion and 'feels like home' indicators showed only the slightest amount of change (see Figures 6 and 7). This variability in effect ranging from 'no change' to 'nearly doubles' suggests that some territorial indicators and constructs are

possibly independent of the long-term process while others are very much dependent on the passage of time and the development of a sense of ownership, or territoriality.

Another possible explanation for the variability found in the unconditional growth models of territorial indicators is simply a lack of sensitivity in measurement for some indicators but not others. This is indeed a possibility but does not entirely explain the range of models found. For example, the unconditional model for previous residence self-room inclusion shows an almost flat trajectory with scores only decreasing slightly over the course of the semester (see Figure 6). However, the unconditional model for the current residence self-room inclusion shows a much steeper trajectory (see Figure 5) and was measured using an identical item consisting of an adapted IOS scale. Similar variability in change scores was found for the public v. private and not crowded v. crowded environmental assessment indicators that were also measured using the same basic question (both are nested within the Kasmar [1970] set of environmental descriptor adjectives).

In short, large amounts of model variability were present even when measured with equally sensitive tools suggesting that some indicators were more influenced by time than others. Nothing in the results suggested a purely random cause for the variability. That is to say, flat trajectories for some items but not others made theoretical sense. For example, it is reasonable that student inclusion with the new room would increase dramatically while inclusion with their previous room (which they have not permanently surrendered) remained fairly stable. This further supports the conclusion that some indicators are separate from the long-term process and do not change with time, whereas others are highly dependent on a territorial process that occurs over some period of time.

The second question explored in Study 1 was related to a better understanding of the indicator variables that suggest a territorial process. By examining what role personality and experience predictors played in that process of change, the current project uncovered some interesting outcomes in the context of previous research and also lent strong support for emerging measures of territoriality.

Overall results for the conditional growth models were varied because of the exploratory nature of the project. Several covariates that were included because of empirical or theoretical reasons did not contribute to the overall model fit for several of the indicators, suggesting that those covariates may not be involved in the territorial creation process. For example, the personality characteristic of dominance has been shown to be related to size of territory and the control of more desirable territories (e.g., Esser, 1973; Mercer & Benjamin, 1980), but in the current project did not significantly impact model statistics when added as a covariate. A similar lack of significant model contribution was found for participant sex even though several projects had found sex differences (Edney & Buda, 1976; Kaya & Weber, 2003; Mercer & Benjamin, 1980). Perhaps the influence of these predictors on territorial behaviors only manifests itself once the territory is established or only has an effect regarding the strength of a specific behavior such as aggressive defense or the preference for one territorial location over another. Both possibilities would explain the previously observed effects and the lack of influence found in the current project's growth models. It is equally possible that those factors are related to the territorial process but not for the indicators chosen; future research involving either territorial process or those specific predictors will have to examine some of those potential explanations.

Other covariates contributed to territorial indicator models fairly often. The TBS controlled access subscale was a valuable covariate in six of the conditional models, suggesting that individual tendency to control access influenced more than half the indicators shown to be changing with the establishment of territory. This directly supports models that emphasize the control component of privacy and related privacy-enabling behaviors (i.e., territoriality). The other TBS subscales of personalization and aggressive defense each contributed to at least one set of conditional growth models involving territorial indicators. All three were found to influence participants' integration with their current room.

Three of the four PPS subscales modeled contributed to at least one conditional model. The anonymity subscale seemed to be important for crowding related variables while intimacy influenced both initial status and rate of change for contact avoidant behaviors. Taken together, the overall results for this part of Study 1 indicated that the TBS scales and selective PPS subscales (e.g., anonymity and intimacy) are important components in determining territory establishment and should be included in future projects on territory establishment. Other measures such as dominance and the PPS subscales of solitude and not neighboring may not be as useful and could be excluded from projects with a limited number of questions. Obviously, other covariates were not tested in this project and need to be examined within a territory establishment timeline.

The final component of this study was the modeling of several student outcome variables in order to assess how the territory indicators relate to changes in those outcomes. This portion found several significant results, with six of the eight outcomes being better modeled with the addition of at least one indicator. As suggested by the

previous literature, student satisfaction, loneliness, and well-being were all impacted in some way by a person's progression in the territorial process. In most cases, the territorial covariate had a significant effect on the outcome variable that was consistent across time and in the hypothesized direction. This potentially speaks to the importance of territorial indicators in student retention and persistence issues by suggesting they act differently than other predictors of retention and persistence. These factors may not seem to affect any change in trajectory that the outcome takes because of the parallel slopes but it is important to recognize that individual scores (but not trajectories) can be improved with increases in the territorial indicators. Since these covariates were time varying, it could be possible to 'bump up' individual scores on the student outcomes via promotion of the territorial process and the specific indicators modeled. These models suggest that the 'bump up' could occur with equal success at any given time point rather than only in the very beginning as some of the persistence literature suggests.

It is also important to point out here that several findings were statistically significant but their corresponding graph suggests that the differences observed may not be very meaningful. For example, Figure 17 displays four significant models for the life satisfaction student outcome. Each graph shows a line that is significantly different from zero and three of them include an example line of how different someone's outcome score would be if he or she scored one standard deviation above the mean on a covariate that significantly improves model fit. However, the significant differences in those graphs correspond to very small real world differences that account for maybe $1/30^{th}$ of the total range for the scale. In short, the differences observed in Part One of this study (what

indicators relate to a territorial process?) were far more striking, and the effect territoriality has on the student outcomes for this project were fairly small.

With a more solid understanding of important territorial indicators and predictors, future projects may be better able to quantify the relationship between student outcomes and territorial establishment. Research in territoriality and privacy has shown repeatedly the influence these factors have on stress, health, and well-being; the current project supported that research but the effect size was small in most cases. Perhaps more powerful territorial indicators or predictors such as the TBS subscales would show a stronger impact on student outcomes. These results could also be an artifact of the population sampled in Study 1. Honors students could be simply better at adjusting to college than the average student, making them less susceptible to the negative outcomes tested in this project. Additionally, their program encourages community more than the average residence hall experience and their course schedules create a stronger cohort for them to relate with. These factors have been shown to be protective factors in first-year retention (e.g., Astin, 1977a; Berger, 1997; Nora et al., 1996) and could have made the student outcomes less variable than would be found in a more general student population. This was one of the principal reasons for conducting Study 2—to have a comparison group from the general student population.

CHAPTER THREE

STUDY 2

METHOD

As a supplement to Study 1, this project was designed to briefly explore any differences in privacy, territory, or positive student outcomes that could be present among students living in suite-style (two or three resident rooms connected by a shared bathroom) or corridor-style residence halls (all rooms on a floor sharing one large bathroom) compared to those in hotel-type rooms. A simple pre-post method using several of the same measures from Study 1 allowed for simple tracking of changes during a similar timeframe such as the first two weeks or first four weeks of the semester.

Participants

Four hundred sixteen Introduction to Psychology students were recruited for participation as partial fulfillment of in-class research points. Of the initial 416-person sample pool, 239 (146 females; 93 males) completed the first wave of data collection. One hundred thirty-nine individuals (96 females; 43 males) participated in the second wave *and* provided meaningful identifiers that allowed their two sets of data to be paired. Of the 139 usable participants in Wave Two, only 94 completed the entire second questionnaire (i.e., 45 participants started Wave Two *and* provided an identifier but did not finish the entire wave). The first and second wave samples were not significantly different from one another on any of the recorded demographic characteristics; all reported demographics, therefore, are for the Wave One sample (n=239).

Consistent with the larger university demographics, participants were predominantly of European-American descent (87%) and classified as in-state residents (82.8%). The average participant was 19 years old ($M = 18.56$, $SD = 1.26$), and was raised in a 3-child home ($M = 2.74$, $SD = 1.02$).

Materials and Measures

During the course of data collection, participants completed a number of surveys of attitudes, behaviors, personality traits and demographics shown to be related to privacy, territoriality, and positive student outcomes by both previous research and current theory. All measures used in this study were identical to those used in Study 1. Whenever possible, established scales from previous territory research were used. In some cases, critical assessments were adapted to be more time-period appropriate, and new assessments were created and pilot-tested with a separate sample. For a detailed description of these measures, refer to the materials and measures section of Study 1, Table 1, and Appendices A – P.

Procedure

Data collection was carried out on two separate occasions in order to track short-term changes in territoriality, privacy, and well-being during the first four weeks of the semester. In order to facilitate the collection of early semester baseline data and to reduce the likelihood of large attrition rates, participation in this project was an extra credit element in two sections of Introduction to Psychology. Recruitment and baseline data collection began on the first day of classes during the Fall 2007 semester and was continued through the first week of the course.

The first wave of data collection (n=239) began on the first day of classes during the Fall 2007 semester and was a maximum of 4 days after the earliest move-in allowed by the residence halls on campus. Participants were e-mailed a link to the survey and the link was also posted on the course website. The survey site itself contained an informed consent form and survey materials containing the TBS-P, PPS, the 11-item dominance scale, the 15-item dominance scale, the Kasmar (1970) items of environmental affect, the privacy behaviors checklist, the person-environment interaction questionnaire, and the participant prior experience and demographics sheet. Perceptual and cognitive measures were also taken along with measures of satisfaction and well-being. The main purpose of Wave One was to collect information on stable personality characteristics, prior privacy and territory experience, and baselines of territory behavior, environmental affect, person-environment interaction, satisfaction, and well-being in relation to the current residence. All change was assessed using this wave of data collection as the baseline.

The second data collection wave (n=139) took place on either the second (n=94 started; n = 66 finished) week of the semester (A-B group) or the third (n=45 started; n = 28 finished) week of the semester (A-C group) and at least one complete week after the completion of Wave One. This wave of data collection was a partial duplicate of Wave One in that all measures with the exception of the demographics, prior experience, and personality assessments were repeated with all participants. This wave of data collection was completed using an online survey instrument. The link was e-mailed to all students who had agreed to participate and was also available on the course web page. Participants were instructed to complete the survey in their residence whenever possible. Wave Two allowed for the measurement of changes in affect, satisfaction, well-being, territory

behavior, territory size, and person-environment interaction that was occurring in a very short period of time.

Upon completion of the final wave of data collection, participants were completely debriefed regarding the measures, purposes, and hypothesized outcomes of the project. Extra credit was given to participants in equal halves as the project progressed from pre to post measures, but participants were reminded to check to ensure they received proper credit. Results were shared with the Introductory Psychology class during some of the remaining weeks of the semester with portions of it being related back to course material.

RESULTS

Territorial Indicators

Within-subject *t*-tests were carried out on both the Week 1-Week 2 (A-B) sample and the Week 1-Week 3 (A-C) sample. Significant differences from Time 1 (always Week 1 of the Fall 2007 semester) to Time 2 (either Week 2 or Week 3 of the Fall 2007 semester) were considered an indication of change over time, especially when occurring in both samples. Tables 30 and 31 (Week 1-Week 2 and Week 1-Week 3 samples, respectively) display the paired samples *t*-test results for all 17 territory indicators that were also initially tested in Study 1, Part 1.

As is evident from Tables 30 and 31, very little support for the Study 1, Part 1 findings was found with the Study 2 sample. Out of both samples, only three of the *t*-tests found a significant difference in means. All three of those differences (both room inclusion indicators and the carrying capacity indicator) were in the correct direction based on the Study 1 findings. Specifically, current room inclusion and room carrying

Table 30

Results for paired-samples t-tests of territorial indicators (Week 1 to Week 2 sample)

Indicator Variable	Mean (St. Dev.)	Mean (St. Dev.) Differences	*t*-score	d.f.	*p*-value
Contact Seeking Behaviors	3.95(3.70) 4.14(3.85)	-0.19(2.90)	-0.64	93	.524
Contact Avoiding Behaviors	3.61(3.52) 3.81(3.69)	-0.20(2.84)	-0.69	93	.492
Public v. Private Assessment	3.03(1.99) 3.17(2.00)	-0.14(1.48)	-0.76	63	.450
Amount of Personalization	6.11(2.18) 6.47(2.38)	-0.36(1.91)	-1.51	63	.136
Importance of Personalization	6.55(2.57) 6.42(2.39)	0.13(1.76)	0.57	63	.572
Current Residence Integration	**4.36(1.29) 4.86(1.30)**	**-0.50(1.14)**	**-3.51***	**63**	**.001**
Previous Residence Integration	5.09(1.90) 4.89(1.98)	0.20(1.32)	1.23	63	.224
Percentage of Owned Space	33.60(17.25) 36.27(18.62)	-2.67(21.04)	-0.69	29	.493
Percentage of Shared Space	55.93(25.76) 59.00(23.50)	-3.07(16.59)	-0.96	26	.344
Attachment Compared to Others	3.23(1.17) 3.28(0.90)	-0.05(0.92)	-0.41	63	.684
'Feels Like Home'	3.39(1.24) 3.42(1.26)	-0.03(0.85)	-0.29	63	.771
Room Carrying Capacity	**5.27(2.16) 6.00(2.46)**	**-0.73(1.81)**	**-2.92***	**51**	**.005**
Comfort with 3 Roommate Visitors	4.17(0.97) 4.03(1.14)	0.14(1.13)	1.00	63	.321
Comfort with 5 Roommate Visitors	3.27(1.23) 3.45(1.05)	-0.19(0.99)	-1.52	63	.135
Comfort with 7 Roommate Visitors	2.64(1.33) 2.78(1.19)	-0.14(1.15)	-0.98	63	.333
Not Crowded v. Crowded Assessment	5.38(1.91) 5.33(1.89)	0.05(1.53)	0.25	63	.807

* $p < .05$

Table 31

Results for paired-samples t-tests of territorial indicators (Week 1 to Week 3 sample)

Indicator Variable	Mean (St. Dev.)	Mean (St. Dev.) Differences	*t*-score	d.f.	*p*-value
Contact Seeking Behaviors	3.91(3.35) 3.40(3.47)	0.51(3.14)	1.09	44	.280
Contact Avoiding Behaviors	3.87(3.27) 3.31(3.52)	0.56(3.43)	1.09	44	.283
Public v. Private Assessment	3.07(2.18) 3.21(2.04)	-0.14(2.03)	-0.37	27	.713
Amount of Personalization	5.57(2.52) 5.86(2.31)	-0.29(2.42)	-0.63	27	.537
Importance of Personalization	6.79(2.44) 7.32(1.95)	-0.54(2.82)	-1.01	27	.324
Current Residence Integration	4.89(1.52) 4.46(1.53)	0.43(1.60)	1.42	27	.167
Previous Residence Integration	**4.86(1.96)** **4.25(1.86)**	**0.61(1.13)**	**2.84***	**27**	**.009**
Percentage of Owned Space	45.68(32.50) 40.42(30.39)	5.26(17.28)	1.33	18	.201
Percentage of Shared Space	46.90(34.85) 44.90(32.36)	2.00(31.05)	0.29	19	.776
Attachment Compared to Others	3.64(1.10) 3.57(0.96)	0.07(1.12)	0.34	27	.738
'Feels Like Home'	3.32(1.16) 3.61(1.17)	-0.29(0.94)	-1.61	27	.118
Room Carrying Capacity	5.12(2.09) 5.24(2.03)	-0.12(1.51)	-0.40	24	.694
Comfort with 3 Roommate Visitors	4.18(1.02) 4.21(1.00)	-0.04(1.04)	-0.18	27	.857
Comfort with 5 Roommate Visitors	3.43(1.40) 3.39(1.32)	0.04(0.88)	0.21	27	.832
Comfort with 7 Roommate Visitors	2.46(1.32) 2.68(1.34)	-0.21(1.20)	-0.95	27	.352
Not Crowded v. Crowded Assessment	4.79(2.18) 4.71(2.12)	0.07(2.04)	0.19	27	.854

* $p < .05$

capacity increased from Week 1 ($M = 4.36$, $SD = 1.29$; $M = 5.27$, $SD = 2.16$, respectively) to Week 2 ($M = 4.86$, $SD = 1.30$ and $M = 6.00$, $SD = 2.46$, respectively), $t(63) = -3.51$, $p = .001$ and $t(51) = -2.92$, $p = .005$, respectively. Previous room inclusion at Week 1 ($M = 4.86$, $SD = 1.96$) was higher than it was at Week 3 ($M = 4.25$, $SD = 1.86$), $t(27) = 2.84$, $p = .009$.

All other paired tests of indicator variables showed no significant differences from Week 1 to either Week 2 or Week 3. Some of these null results also supported the Study 1 findings for the six indicators that were shown not to vary with time, but the majority of the null results were not congruent with Study 1 findings.

Student Outcomes

Within-subject *t*-tests were carried out on both the Week 1-Week 2 (A-B) sample and the Week 1-Week 3 (A-C) sample. Significant differences from Time 1 (always Week 1 of the Fall 2007 semester) to Time 2 (either Week 2 or Week 3 of the Fall 2007 semester) were considered an indication of change over time, especially when occurring in both samples. Similar findings existed for the second set of paired samples tests run on the student outcome variables that corresponded to Study 1, Part 3. Tables 32 and 33 display the results for these tests.

Only three of the analyses indicated a significant change from Week 1 to either Week 2 or Week 3 in a student outcome variable. Perceived stress decreased significantly from Week 1 ($M = 39.28$, $SD = 6.81$) to Week 2 ($M = 37.55$, $SD = 7.40$), $t(93) = 3.00$, $p = .003$. This is different from Study 1 results which indicated that the average participant's stress level did not change significantly. Residence hall satisfaction at Week 2 ($M = 55.89$, $SD = 7.22$) was also significantly higher than at Week 1 ($M = 54.78$, $SD =$

Table 32

Results for paired-samples t-tests of student outcomes (Week 1 to Week 2 sample)

Outcome Variable	Mean (St. Dev.)	Mean (St. Dev.) Differences	*t*-score	d.f.	*p*-value
Overall Health	7.87(1.74) 7.97(1.78)	-0.10(1.25)	-0.75	93	.458
Perceived Stress	**39.28(6.81)** **37.55(7.40)**	**1.72(5.57)**	**3.00***	**93**	**.003**
UCLA Loneliness	41.86(9.64) 41.45(10.13)	0.41(7.32)	0.55	93	.584
Subjective Happiness	20.83(5.00) 20.86(4.83)	-0.03(2.82)	-0.11	93	.913
Life Satisfaction	25.50(5.96) 25.45(6.29)	0.05(5.73)	0.09	93	.929
Roommate Satisfaction	13.02(1.78) 13.22(1.72)	-0.20(2.18)	-0.75	63	.458
Resident Hall Satisfaction	**54.78(6.77)** **55.89(7.22)**	**-1.11(3.78)**	**-2.35***	**63**	**.022**

*$p < .05$

Table 33

Results for paired-samples t-tests of student outcomes (Week 1 to Week 3 sample)

Outcome Variable	Mean (St. Dev.)	Mean (St. Dev.) Differences	*t*-score	d.f.	*p*-value
Overall Health	**8.40(1.54)**	**0.40(1.53)**	**1.76** ‡	**44**	**.086**
	8.00(1.62)				
Perceived Stress	38.84(6.91)	-1.02(7.46)	-0.92	44	.363
	39.87(6.82)				
UCLA Loneliness	41.73(9.46)	-0.31(7.49)	-0.28	44	.782
	42.04(8.97)				
Subjective Happiness	21.71(3.84)	0.36(3.26)	0.73	44	.469
	21.36(3.73)				
Life Satisfaction	27.33(5.04)	0.22(4.36)	0.34	44	.734
	27.11(4.95)				
Roommate Satisfaction	13.61(1.81)	0.36(2.33)	0.82	27	.424
	13.25(2.15)				
Resident Hall Satisfaction	54.18(5.91)	0.14(5.34)	0.14	27	.888
	54.04(6.32)				

*$p < .05$; ‡$p < .09$

6.77), $t(63) = -2.35$, $p = .022$. Once again this finding was not consistent with Study 1's findings that resident hall satisfaction did not change for the average participant.

The final statistically significant difference in outcomes occurred between Week 1 ($M = 8.40$, $SD = 1.54$) and Week 3 ($M = 8.00$, $SD = 1.62$) for the overall health outcome variable, $t(44) = 1.76$, $p = .086$. This marginally significant decrease in health ratings was consistent with the growth models from Study 1. All other analyses did not reject the null hypothesis and were largely inconsistent with Study 1's findings.

DISCUSSION

Study 2 was designed to be a comparison group for the more intricate Study 1. The design allowed for a larger, more diverse, and more representative sample of college students. The data were collected to enable the replication of any time-related changes of indicators or outcomes found in Study 1 as well as exploring the stability of the parameters for initial status and slope in the Honors sample.

Paired samples *t*-tests on all indicator and outcome variables for both the Week 1-Week 2 and Week 1-Week 3 samples found only six significant differences. Only some of those differences were in the same direction as the Study 1 findings and previous research or theory. Some of the null results also supported Study 1 findings because some of the indicators were shown in Study 1 not to change with time (meaning that a change in mean would not be expected). However, far more indicators and outcomes were expected to change (i.e., have significant Time 1 to Time 2 differences), but did not.

Whereas the project was designed to have a larger, more representative sample, student participation was lower than expected (57.5% of the sample pool) and attrition rates were quite high (41.9% total from Time 1 to Time 2). Another large proportion of

the sample failed to complete the second wave after starting (29.8% in Week 2; 37.8% in Week 3). In sum, Study 2's dataset was much smaller than initially intended and the outcomes or lack thereof could be due to the high attrition rate.

There are several other potential explanations for the different outcomes of the two studies. The first set of findings might be specific to the Honors sample. That sample consisted of very bright students who had very strong academic outcomes. All of the Honors students were paired with a roommate that they did not know prior to arriving at the residence hall. There were also specifically planned activities for the Honors students designed to create a sense of community. Furthermore, the residence hall had no students who had previously lived in it, and it was the only hotel-style residence hall on the campus. Another possible explanation is that Study 2's findings were restricted to two waves of data at the beginning of the semester, and a longer timeframe is needed to detect territory establishment and to find meaningful predictors of it.

To test this last possibility of a restricted timeframe, paired samples *t*-tests were conducted between Waves 2 and 3 of the Study 1 data. Results largely mirrored Study 2's findings with very few territory indicators (n=3) or student outcomes (n=3) changing significantly during the first three weeks of the semester in the Honors sample (see Tables 34 and 35). This follow-up analysis helps to rectify the incongruence between Study 1 and Study 2, and suggests that the Honors sample may not be that different from the larger student population. When restricting our examination of change to a short period of time, both samples did not appear to change significantly. When given a longer timeframe, as is the case with the Study 1 sample, changes in territorial attachment and student outcomes are more detectable.

Table 34

Study 1 results for paired-samples t-tests of territorial indicators (Week 1 to Week 3)

Indicator Variable	Mean Differences (St. Error)	*t*-score	d.f.	*p*-value
Contact Seeking Behaviors	-0.20(0.20)	-0.99	58	.325
Contact Avoiding Behaviors	-0.22(0.19)	-1.15	58	.256
Public v. Private Assessment	0.00(0.23)	0.00	64	1.00
Amount of Personalization	-0.10(0.18)	-0.54	62	.591
Importance of Personalization	0.06(0.29)	0.22	63	.829
Current Residence Integration	-0.03(0.12)	-0.27	62	.792
Previous Residence Integration	0.30(0.17)	1.71	60	.092
Percentage of Owned Space	-0.41(0.99)	-0.42	63	.677
Percentage of Shared Space	1.06(2.07)	0.51	63	.610
Attachment Compared to Roommate	-0.05(0.08)	-0.57	63	.568
Attachment Compared to Others	-0.02(0.09)	-0.17	63	.863
'Feels Like Home'	-0.24(0.21)	-1.12	63	.266
Room Carrying Capacity	**-1.06(0.33)**	**-3.21**	**62**	**.002**
Comfort with 3 Roommate Visitors	**-0.40(0.10)**	**-3.86**	**63**	**.000**
Comfort with 5 Roommate Visitors	-0.23(0.14)	-1.65	63	.104
Comfort with 7 Roommate Visitors	-0.06(0.15)	-0.43	63	.670
Not Crowded v. Crowded Assessment	**0.47(0.20)**	**2.35**	**63**	**.022**

Table 35

Study 1 results for paired-samples t-tests of student outcomes (Week 1 to Week 3 sample)

Outcome Variable	Mean Differences (St. Error)	*t*-score	d.f.	*p*-value
Academic Achievement	-0.09(0.09)	-1.09	52	.279
Overall Health	**0.21(0.11)**	**1.99**	**63**	**.051**
Perceived Stress	0.92(0.59)	1.55	60	.127
UCLA Loneliness	**1.69(0.76)**	**2.21**	**61**	**.031**
Subjective Happiness	-0.25(0.27)	-0.94	62	.352
Life Satisfaction	**-0.65(0.32)**	**-2.02**	**63**	**.048**
Roommate Satisfaction	0.19(0.19)	1.01	61	.314
Resident Hall Satisfaction	-0.43(0.58)	-0.75	59	.457

CHAPTER FOUR

GENERAL DISCUSSION

Study 1 helped to make a considerable initial jump in the field's current understanding of territoriality. Prior to this project no published research had examined the timeline and process involved in the establishment of the perceived ownership of space. While considerable work had focused on describing the behaviors and thoughts occurring in established territories, research on change and development was neglected or these aspects were simply taken for granted. This project specified several indicators that appear to be part of the longer territorial establishment process and also specified some predictor variables that impact the development of those indicators in the territory process. While in no way all-inclusive, this project highlighted the need for considerable work involving territorial process and implies a need to delineate between 'maintenance' behaviors and thoughts and 'establishment' behaviors and thoughts. This project also serves as a useful starting point for better classifying the role of personality and experience factors in territory establishment and in detailing the role of privacy and territoriality in student success, distress, and long-term retention.

Unconditional growth models of over a dozen previously researched territory indicators showed that some factors did not fluctuate with time. This suggests that previous research showing the presence of and/or heightened levels of these indicators in established territories may be measuring a different territorial process altogether. For instance, it is possible that territoriality is achieved in two ways—one very quickly with

stable characteristics and the other more gradually with changing characteristics. The design and aims of the current project emphasized the second establishment process by focusing on indicators that changed gradually over time in a theoretically meaningful direction. The previous projects that had used indicators shown to be time invariant in this project could have been tapping the other, more immediate and stable territorial process. Perhaps the first process allows for immediate maintenance of the territory (facilitating controlled access and defense) while the second helps to build the attachment component of territoriality (likely amplifying the importance of controlled access and the strength of the defensive response).

This duel process possibility would help to explain why Edney and Uhlig (1977) were able to elicit differences with a very short (30-minute) personalization task but did not see some of the differences found in projects occurring in more established or less artificial territories (e.g., Mercer & Benjamin, 1980). In the current project, almost all participants reported personalizing the space within one day of occupancy, which was in line with the timeline of Edney and Uhlig's (1977) personalization task. Perhaps personalization is one of the immediate and stable maintenance components of territorial establishment; that is precisely the purpose of personalization outlined by Altman (1975). Additionally, research has shown that the mere presence of territorial markers on cars, houses, or tables in the student center were enough to elicit aggressive defense behaviors by owners and/or space avoidance behaviors by intruders (Becker, 1973; Brown & Altman, 1983; Calsyn, 1976; Sommer & Becker, 1969; Szlemko et al., 2008).

The two-process framework also could explain several of the important findings from Study 1 of this project. The immediate act of personalization may have yielded an

initial increase in territorial attachment compared to non-personalizing visitors (as shown by Edney and colleagues) but cannot explain the gradual changes found in public vs. private environmental assessment, self-room inclusion, room carrying capacity, and several others. While some territorial behaviors may be present upon formal 'ownership' of space, it seems that several of the environmentally focused cognitions develop slowly. Anecdotally, actual amount of personalization assessed via self-report of total number of items did not change substantially after the initial personalization, but the perceived amount of personalization compared to others was one of the 11 indicators that did increase gradually as the territory was established. In this example, the maintenance behavior remains constant but perceptions of individual maintenance behavior relative to others increase slowly. It is possible that the slower occurring attachment component invokes this skewed positive bias in perceived behavior relative to others.

At this point, the duel process model of territorial establishment is all conjecture, with selectively chosen support from both previous research and the current project. Future research, especially if carried out in a situation that allowed for extended study of a person's initial and continued attainment of space, should be mindful of this possibility and intentionally focus on both immediate change and gradual development. It is suspected that several of the common behaviors occur quite quickly as part of a social script for ownership or territoriality. Carrying out those behaviors repeatedly likely strengthens reported bonds very quickly and helps to gradually develop a stronger and more implicitly important sense of space ownership. That stronger sense of ownership then translates into perceptual changes regarding the value, affordances, and emotional appeal of the space.

Separate from the potential for both immediate and gradual territorial establishment processes, this project began initial work on the role of individual differences in the territorial process. Results for this project demonstrated that some personality components related to established territories may not be influential in establishment. This opens up important areas of needed inquiry in the field. For example, how do some factors influence the end product without playing a role in the creation of that product? That is to say, research needs to reassess important personality predictors such as dominance in the larger context of both territorial establishment and maintenance in order to explain how it could relate to one but not the other. Additionally, with the TBS scale being a fairly consistent contributor to territorial establishment models, the field needs to explore the potential for measuring other stable forms of territory-specific preferences, motivations, and tendencies. It is interesting to note that very few attempts have been made to provide pencil-and-paper indicators of territoriality.

The connection between territoriality and student retention issues was also tested in this project and results were mixed. There is good reason to believe that first-year retention is heavily tied to the residence hall and 'feeling at home.' Research in both student persistence and territoriality supports that conclusion and this project was no different. Territory indicators significantly contributed to models of student outcomes. However, the practical impact of territorial establishment on student outcome was questionable in this project. Results were often statistically significant but of small magnitude, but this could have been related to the unique sample used in Study 1, with all participants having largely positive outcomes at the end of one semester.

The importance of better clarifying the relationship between territorial establishment and student well-being should not be downplayed. If a strongly or quickly established territory is found to be related to higher student persistence, and a better understanding of that establishment process is developed, it would be possible for universities to encourage or facilitate behaviors and thoughts that promote territoriality. This is of far more practical benefit to university administrations than research showing that majority status promotes retention since several current persistence/retention factors such as majority status are fairly static.

As with most exploratory endeavors, this project resulted in more questions than answers. The initial assumption of a territorial process was supported and scattered pieces of information related to its components, predictors, and timeline were gathered. The realization of the existence of that process now requires an almost complete shift in research focus and opens the potential for problems within the previous literature on established territory. At the least, it highlights how complex the territorial dynamic is and how incomplete the current literature is. Substantial investigation of both process and individual difference components will be necessary to move the field from the description of behaviors to the explanation and prediction of outcomes. Such a shift will undoubtedly be accompanied by alterations in current territory models; perhaps the inclusion of both immediate but stable and gradual but shifting territorial behaviors and cognitions will be part of that model alteration. Future work should compare short-term and longer-term territorial establishment as well as outcomes over a longer period of time. Populations beyond Honors students and residence halls that are not just hotel-style should be studied.

The student population has often been the base for most territorial research. While a greater understanding of the process should be extended to more general populations and situations such as military personnel or homeowners, the student population could potentially benefit the most from research in the area of territorial establishment. Given the link between territoriality and positive outcomes along with the common problems of student retention and persistence, any research that provides a mechanism to alter territorial establishment timelines could translate into large reductions in student issues such as stress, depression, and withdrawal. It is still unclear if such a mechanism exists or is able to be practically implemented, but the potential impact should drive future lines of research.

Possible intervention strategies could focus on expanding student repertoires of contact seeking and contact avoiding behaviors through pamphlets or training sessions. These two types of behaviors are central to privacy regulation which was positively related to improved student outcomes. Additionally, successful use of those strategies likely promotes other factors shown to be important in retention and persistence. For example, contact seeking promotes positive social networks while contact avoidance allows for a greater ability to study through distraction reduction.

Territorial promotion or screening could also be useful strategies employed by universities. Students could be explicitly advised to personalize their space or could even be given greater access to low cost personalizations (posters, corkboards, etc.) as a way of increasing feelings of being 'at home' or included in the space. Based on Vinsel et al. (1980) those personalizations should be university- or community-based to promote social cohesion and reduce withdrawal or homesickness. Some of the individual

difference measures of territorial preference (i.e., the Territorial Behaviors Scale) could also be used as either a retention/persistence predictor or as a tool for making more compatible roommate pairs.

While these strategies could be useful to universities trying to promote more cohesion while boosting retention, more research on the negative impact of strong territorial bonds in residence halls also needs to be undertaken. While increased privacy and territorial attachment may facilitate social interactions, academic success, and retention, violations of these two elements could also be the cause of conflict. Researchers will need to address the role of privacy and territoriality in facilitating rule breaking, vandalism, roommate disagreements, and even racial or cultural intolerance. These mechanisms, when expressed too strongly or in opposing ways between individuals, could become more detrimental than the student outcomes they are trying to alter. Future research needs to better clarify both the positive and negative effects of territorial establishment and if possible, the interaction between the two.

References

Alcock, J. (2001). *Animal behavior* (7th Edition). Sunderland, MA: Sinauer.

Altman, I. (1975). *The environment and social behavior.* Monterey, CA: Brooks/Cole.

Altman, I. (1977). Privacy regulation: Culturally universal or culturally specific? *Journal of Social Issues, 33,* 66-84.

Altman, I., & Haythorn, W. W. (1967). The ecology of isolated groups. *Behavioral Science, 12*, 168-182.

Altman, I., Taylor, D. A., & Wheeler, L. (1971). Ecological aspects of group behavior in social isolation. *Journal of Applied Social Psychology, 1*, 76-100.

American College Testing (2007). National collegiate retention and persistence to degree rates. On the World Wide Web at http://www.act.org/research/policy makers/pdf/retain_2007.pdf

Amole, D. (2005). Coping strategies for living is student residential facilities in Nigeria. *Environment and Behavior, 37*(2), 201-219.

Anderson, C., Blenkinsopp, A., & Armstrong, M. (2004). Feedback from community pharmacy users on the contribution of community pharmacy to improving the public's health: A systematic review of the peer reviewed and non-peer reviewed literature 1990-2002. *Health Expectations, 7*, 191-202.

Ardrey, R. (1966). *The territorial imperative*. New York: Atheneum.

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology, 63*, 596-612.

Astin, A. (1977a). *Four critical years: Effects of college on beliefs, attitudes, and knowledge.* San Francisco: Jossey-Bass.

Astin, A. (1977b). *Preventing student from dropping out.* San Francisco: Jossey-Bass.

Astin, A., W., Tsui, L., & Avalos, J. (1996). *Degree attainment rates at American colleges and university: Effects of race, gender, and institutional types* (Report No. HE019589). Los Angeles, CA: Higher Education Research Institute (ERIC Document Reproduction Service No. ED 400749).

Bates, A. (1964). Privacy-A useful concept? *Social Forces, 42*, 432.

Bean, J. P. (1980). Dropouts and turnover: The synthesis and test of a causal model of student attrition. *Research in Higher Education, 12,* 155-187.

Bean, J. P., & Eaton, S. B. (2001). The psychology underlying successful retention practices. *Journal of College Student Retention, 3*(1), 73-89.

Becker, F. D. (1973). Study of spatial markers. *Journal of Personality and Social Psychology, 26*(3), 439-445.

Becker, F. D., & Mayo, C. (1971). Delineating personal space and territoriality. *Environment and Behavior, 3*, 375-381.

Bennett, C., & Okinaka, A. M. (1990). Factors related to persistence among Asian, Black, Hispanic, and White undergraduates at a predominantly White university: Comparison between first and fourth year cohorts. *The Urban Review, 22*(1), 33-60.

Berger, J. B. (1997). Students' sense of community in residence halls, social integration, and first-year persistence. *Journal of College Student Development, 38*(5), 441-452.

Block, L. K., & Stokes, G. S. (1989). Performance and satisfaction in private versus nonprivate work settings. *Environment and Behavior, 21*(3), 277-297.

Bolyard, K. J., & Rowland, W. J. (2000). The effects of spatial context and social experience on the territorial aggression of male threespine stickleback. *Behaviour, 137*, 845-864.

Brown, B. B. (1987). Territoriality. In D. Stokols & I. Altman (Eds.), *Handbook of environmental psychology,* vol. 2: 505-531. New York: Wiley.

Brown, B. B., & Altman, I. (1981). Territoriality and residential crime: A conceptual framework. In P.J. Brantingham & P. L. Brantingham (Eds.), *Environmental criminology* (pp. 55-76). Beverly Hills, CA: Sage.

Brown, B. B., & Altman, I. (1983). Territoriality, defensible space and residential burglary: An environmental analysis. *Journal of Environmental Psychology, 3*, 203-220.

Brown, B. B., & Werner, C. M. (1985). Social cohesiveness, territoriality, and holiday decorations: The influence of cul-de-sacs. *Environment and Behavior, 17*(5), 539-565.

Brown, G., Lawrence, T. B., & Robinson, S. L. (2005). Territoriality in organizations. *Academy of Management Review, 30*(3), 577-594.

Brown, J. D. (1996). *Testing in language programs.* Upper Saddle River, NJ: Prentice Hall.

Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between white students and African-American students. *The Journal of Higher Education, 70*(2), 134-160.

Calsyn, R. J. (1976). Group responses to territorial intrusion. *The Journal of Social Psychology, 400*, 51-58.

Cardoza, D. (1991). College attendance and persistence among Hispanic Women: An examination of some contributing factors. *Sex Roles, 24*(3), 133-147.

Chapin, F. S. (1951). Some housing factors related to mental hygiene. *Journal of Social Issues, 7*, 164-171.

Childress, H. (1994). 'No loitering: Some thoughts on small-town teenage hangouts'. *Small Town, 24*(2), 20-25.

Clayton, D. A. (1987). Why mudskippers build walls. *Behaviour, 102*(3), 185-195.

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385-396.

D'Atri, D. A. (1975). Psychophysical responses to crowding. *Environment and Behavior, 7*, 237-252.

De Croon, E. M., Sluiter, J. K., Kuijer, P. P. F. M., & Frings-Dresen, M. F. W. (2005). The effects of office concepts on worker health and performance: A systematic review of the literature. *Ergonomics, 48*(2), 119-134.

Deutsch, R. D., Esser, A. H., & Sossin, K. M. (1978). Dominance, aggression, and the functional use of space in institutionalized female adolescents. *Aggressive Behavior, 4*, 313-329.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffen, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment, 49*, 71-75.

Dyson-Hudson, R., & Smith, E. A. (1978). Human territoriality: An ecological reassessment. *American Anthropologist, 80*, 21-41.

Edney, J. J. (1974). Human territoriality. *Psychological Bulletin, 81*, 959-975.

Edney, J. J. (1975). Territoriality and control: A field experiment. *Journal of Personality and Social Psychology, 31*(6), 1108-1115.

Edney, J. J., & Buda, M. A. (1976). Distinguishing territoriality and privacy: Two studies. *Human Ecology, 4*(4), 283-295.

Edney, J. J., & Uhlig, S. R. (1977). Individual and small group territories. *Small Group Behavior, 8*(4), 457-467.

Eimers, M. T., & Pike, G. R. (1997). Minority and nonminority adjustment to college: Differences or similarities? *Research in Higher Education, 38*(1), 77-97.

Epstein, Y. M. (1982). Crowding stress and human behavior. In G. W. Evans (Ed.), *Environmental Stress*. New York: Cambridge University Press.

Esser, A. H. (1973). Cottage fourteen. *Small Group Behavior, 4*, 131-146.

Evans, G. W., & McCoy, J. M. (1998). When buildings don't work: The role of architecture in human health. *Journal of Environmental Psychology, 18*, 85-94.

Fleming, T. M., Perkins, D. V., Lovejoy, M. C., & Collins, J. E. (1991). Development of a brief self-report measure of quality in roommate relationships. *Behavioral Assessment, 13*, 125-135.

Furby, L. (1980). The origins and early development of possessive behavior. *Political Psychology, 2*, 30-42.

Gauvain, M., Altman, I., & Fahim, H. (1983). Homes and social change: A cross-cultural analysis. In N. Feimer & S. Geller, (Eds.), *Environmental psychology: Directions and perspectives.* New York: Praeger, pp. 180-218.

Gold, J. R. (1982). Territoriality and human spatial behavior. *Progress in Human Geography, 6*, 44-67.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The International Personality Item Pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*, 84-96.

Gomez-Jacinto, L., & Hombrados-Mendieta, I. (2002). Multiple effects of community and household crowding. *Journal of Environmental Psychology, 22,* 233-246.

Haber, G.M. (1980). Territorial invasion in the classroom: Invadee response. *Environment and Behavior, 12*, 17-31.

Haggard, L. M., & Werner, C. M. (1990). Situational support, privacy regulation, and stress. *Basic and Applied Social Psychology, 11*(3), 313-337.

Harris, P. B., Brown, B. B., & Werner, C. M. (1996). Privacy regulation and place attachment: Predicting attachments to a student family housing project. *Journal of Environmental Psychology, 16*, 287-301.

Harris, P. B., Werner, C. M., Brown, B., & Ingebritsen, D. (1995). Relocation and privacy regulation: A cross-cultural analysis. *Journal of Environmental Psychology, 15*, 311-320.

Henry, K. L., & Slater, M. D. (2007). Assessing change and intraindividual variation: Longitudinal multilevel and structural equation modeling. In A. F. Hayes, M. D. Slater, & L. B. Snyder (Eds.). *The SAGE Sourcebook of Advanced Data Analysis Methods for Communication Research* (pp. 55-87). Thousand Oaks, CA: Sage.

Ittelson, W. H., Proshansky, H. M., & Rivlin, L. G. (1970). A study of bedroom use on two psychiatric wards. *Hospital and Community Psychiatry, 21*(6), 177-180.

Jackson, D. N. (1971). *Personality research form manual*. New York: Research Psychologists Press.

Jay, P. (1965). Field studies. In A. M. Schrier, H. F. Harlow, & F. Stollnitz (Eds.), *Behavior of nonhuman primates: Modern research trends*, vol. 2: 525-591. New York: Academic Press.

Kane, R. A. (2001). Long-term care and a good quality of life: Bringing them closer together. *The Gerontologist, 41*(3), 293-304.

Kane, R. A., et al. (2003). Quality of life measures for nursing home residents. *Journal of Gerontology, 58A*(3), 240-248.

Kasmar, J. V. (1970). The development of a usable lexicon of environmental descriptors. *Environment and Behavior, 2*(2), 153-169.

Kaya, N., & Weber, M. J. (2003). Territorial behavior in residence halls: A cross cultural study. *Environment and Behavior, 35*(3), 400-414.

Keeley, R. M., & Edney, J. J. (1983). Model house designs for privacy, security, and social interaction. *Journal of Social Psychology, 119*, 219-228.

Kohen, A. I., Nestel, G., & Karmas, C. (1978). Factors affecting individual persistence rates in undergraduate college programs. *American Educational Research Journal, 15*(2), 233-252.

Kupritz, V. W. (1998). Privacy in the work place: The impact of building design. *Journal of Environmental Psychology, 18*, 341-356.

Lepore, S. J., Evans, G. W., & Palsane, M. N. (1991). Social hassles and psychological health in the context of chronic crowding. *Journal of Health and Social Behavior, 32*, 357-367.

Leppel, K. (2002). Similarities and differences in the college persistence of men and women. *A Review of Higher Education, 25*(4), 433-450.

Lovejoy, M. C., Perkins, D. V., & Collins, J. E. (1995). Predicting Fall semester breakups in college roommates: A replication using the Social Satisfaction Questionnaire. *Journal of College Student Development, 36*(6), 594-602.

Lyumbomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research, 46*, 137-155.

Marshall, N. J. (1972). Privacy and environment. *Human Ecology, 1*(2), 93-110.

Marshall, N. J. (1974). Dimensions of privacy preferences. *Multivariate Behavioral Research, 9*, 255-271.

Mateo, J. M. (2006). The nature and representation of individual recognition odours in Belding's ground squirrels. *Animal Behaviour, 71*, 141-154.

Mehrabian, A., & Russell, J. A. (1974). *An approach to environmental psychology.* Cambridge, MA: MIT Press.

Mercer, G. W., & Benjamin, M. L. (1980). Spatial behavior of university undergraduates in double-occupancy rooms: An inventory of effects. *Journal of Applied Social Psychology, 10*(1), 32-44.

Milem J. F., & Berger, J. B. (1997). A modified model of college student persistence: Exploring the relationship between Astin's theory of involvement and Tinto's theory of student departure. *Journal of College Student Development, 38*(4), 387-399.

Newell, P. B. (1995). Perspectives on privacy. *Journal of Environmental Psychology, 15*, 87-104.

Newell, P. B. (1998). A cross-cultural comparison of privacy definitions and functions: A systems approach. *Journal of Environmental Psychology, 18*, 357-371.

Nora, A., Cabrera, A., Hagedorn, L. S.., & Pascarella, E. (1996). Differential impacts of academic and social experiences on college-related behavioral outcomes across different ethnic and gender groups at four-year institutions. *Research in Higher Education, 37*(4), 427-451.

Pantages, T. J., & Creedon, C. F. (1978). Studies of College Attrition: 1950 – 1975. *Review of Educational Research, 48*(1), 49-101.

Pascarella, E. T., & Smart, J. C. (1991). Impact of intercollegiate athletic participation for African American and Caucasian men: Some further evidence. *Journal of College Student Development, 32,* 123-130.

Pastalan, L. A. (1970). Privacy as an expression of human territoriality. In L. A. Pastalan & D. H. Carsen, (Eds.), *Spatial behavior of older people*. Ann Arbor: University of Michigan.

Pedersen, D. M. (1994). Privacy preferences and classroom seat selection. *Social Behavior and Personality, 22*(4), 393-398.

Pedersen, D. M. (1997). Psychological functions of privacy. *Journal of Environmental Psychology, 17*, 147-156.

Pedersen, D. M. (1999). Model for types of privacy by privacy functions. *Journal of Environmental Psychology, 19*, 397-405.

Peltier, G. L., Laden, R., & Matranga, M. (1999). Student persistence in college: A review of the research. *Journal of College Student Retention, 1*(4), 357–375.

Pierce, J. L., Kostova, T., & Dirks, K. T. (2003). The state of psychological ownership: Integrating and extending a century of research. *Review of General Psychology, 7*(1), 84-107.

Proshansky, H. M., Ittelson, W. H., & Rivlin, L. G. (Eds.) (1970). *Environmental psychology: Man and his physical setting.* New York: Holt, Rinehart and Winston.

Rodin, J. (1986). Aging and health: Effects of the sense of control. *Science, 233*, 1271-1276.

Rosenblatt, P. C., & Budd, L. G. (1975). Territoriality and privacy in married and unmarried cohabiting couples. *The Journal of Social Psychology, 97*, 67-76.

Ruback, R. B., & Juieng, D. (1997). Territorial defense in parking lots: Retaliation against waiting drivers. *Journal of Applied Social Psychology, 27*(9), 821-834.

Ruback, R. B., & Kohli, N. (2005). Territoriality at the Magh Mela: The effects of organizational factors and intruder characteristics. *Environment and Behavior, 37*(2), 178-200.

Ruback, R. B., & Snow, J. N. (1993). Territoriality and nonconscious racism at water fountains: Intruders and drinkers (Blacks and Whites) are affected by race. *Environment and Behavior, 25*(2), 250-267.

Ruback, R.B., Pape, K.D., & Doriot, P. (1989). Waiting for a phone: Intrusion on callers leads to territorial defense. *Social Psychology Quarterly, 52*, 232-241.

Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity and factor structure. *Journal of Personality Assessment, 66*(1), 20-40.

Sack, R. D. (1983). Human territoriality: A theory. *Annals of the Association of American Geographers, 73*, 55-74.

Sax, L. J., Astin, A. W., Korn, W. S., & Mahoney, K. M. (1995). *The American freshman: National norms for fall, 1995*. Los Angeles: Higher Education Research Institute, UCLA.

Seligman, M. E. P. (1975). *Helplessness: On depression, development and death.* San Fransisco: Freeman.

Seligman, M. E. P. (1991). *Learned optimism.* New York: Knopf.

Seligman, M. E. P., & Maier, S. F. (1967). Failure to escape traumatic shock. *Journal of Experimental Psychology, 74*(1), 1-9.

Singer, E., & Hannikainen, M. (2002). The teacher's role in territorial conflicts of 2- to 3-year-old children. *Journal of Research in Childhood Education, 17*(1), 5-18.

Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. New York: Oxford University Press.

Snijders, T. A. B., & Bosker, R. J. (1994). Modeled variance in two-level models. *Sociological Methods and Research, 22*, 342-363.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel Analysis: An introduction to basic and advanced multilevel modeling.* London: Sage.

Sommer, R., & Becker, F. D. (1969). Territorial defense and the good neighbor. *Journal of Personality and Social Psychology, 11*(2), 85-92.

Stoecker, J., Pascarella, E. T., & Wolfe, L. M. (1988). Persistence in higher education: A 9-year test of a theoretical model. *Journal of College Student Development, 29*, 196-209.

Sundstrom, E. (1986). *Work places: The psychology of the physical environment in offices and factories.* New York: Cambridge University Press.

Sundstrom, E. & Altman, I. (1974). Field study of territorial behavior and dominance. *Journal of Personality and Social Psychology, 30*, 115-124.

Switzer, R., & Taylor, R. B. (1983). Sociability versus privacy of residential choice: Impacts of personality and local social ties. *Basic and Applied Social Psychology, 4*(2), 123-136.

Szlemko, W.J., Benfield, J.A., Bell, P.A., Deffenbacher, J.L., & Troup, L.J. (2008). Territorial markings as a predictor of driver aggression and road rage. *Journal of Applied Social Psychology, 38*(6), 1664-1688.

Tabachnick, B. G. & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). New York: Harper Collins.

Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality, 72*, 271-324.

Taylor, R.B. (1988). *Human territorial functioning: An empirical, evolutionary perspective on individual and small group territorial cognitions, behaviors, and consequences.* Cambridge: Cambridge University Press.

Taylor, R. B., & Stough, R. R. (1978). Territorial cognition: Assessing Altman's typology. *Journal of Personality and Social Psychology, 36*(4), 418-423.

Tinto, V. (1993). *Leaving College: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.

Vinsel, A., Brown, B. B., Altman, I., Foss, C. (1980). Privacy regulation, territorial displays, and effectiveness of individual functioning. *Journal of Personality and Social Psychology, 39*(6), 1104-1115.

Werner, C.M., Brown, B.B., & Damron, G. (1981). Territorial marking in a game arcade. *Journal of Personality and Social Psychology, 41*(6), 1094-1104.

Westin, A. (1970). *Privacy and freedom.* New York: Atheneum.

Zlutnick, S., & Altman, I. (1972). Crowding and human behavior. In J. Wohlwill & D. Carson (Eds.), *Environment and the social sciences: Perspectives and applications* (pp. 44-58). Washington, DC: American Psychological Association.

Appendix A: Territory Behaviors Scale-Primary

Using the scale provided, respond to each statement based on how much you agree with that statement. There is no right or wrong answers and this survey simply hopes to measure an individuals preferences regarding personal territory.

1 2 3 4 5 6

Strongly Disagree Strongly Agree

_____1. I don't like it when people come to my house uninvited.

_____2. I personalize my stuff because it means something to me

_____3. People protect their property because it is valuable.

_____4. I would be upset if someone had a bit of my food without asking.

_____5. I like having my name on the mailbox or doorway.

_____6. We should defend what we work hard for.

_____7. I wouldn't mind if a roommate entered my room while I was gone as long as they didn't take anything.

_____8. I like to put pictures or other markers on things that are important to me.

_____9. The longer I live in a place, the more I like it and am willing to defend it.

_____10. When I meet someone I like I wait for a long time before allowing them into my home.

_____11. It is important to me that I make my home visually distinctive from the neighbors' homes.

_____12. People protect their property because it is meaningful to them personally.

_____13. I am willing to expend time and/or money to make sure that people can't get into my room/home without my permission.

_____14. I like to put things in my car that show off who I am (such as graduation tassles, pictures of friends, favorite bands, etc.).

_____15. I protect my residence because it contains my livelihood.

_____16. I dislike having glass doors in my home because people can see into my home.

_____17. During my favorite holidays I decorate my home extensively.

_____18. I protect my residence because it contains my memories and emotions.

_____19. I will rearrange my day to be sure I'm home when a yard worker or repairman will be there.

_____20. It's silly to change a home (move walls, paint murals) just to make it unique like the owner.

_____21. A person will protect his or her home more if he or she has lived there a long time.

_____22. I protect my favorite places, even if they aren't my most valuable.

_____23. Making my apartment/house show my interests and personality is one of the first things I do when moving in.

_____24. I am willing to spend considerable money to make sure someone cannot get into my home.

Appendix B: Initial Factor Analysis and Reliability Results for TBS-P

Total Variance Explained

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1 (Control Access)	5.47	14.03	14.03
2 (Personalization)	2.93	7.52	21.55
3 (Aggressive Defense)	2.07	5.31	26.86

Rotated Component Matrix

Item #	Component		
	1 Control Access	2 Personalization	3 Aggressive Defense
Q13	.708		
Q24	.702		.370
Q10	.505		
Q19	.474		
Q1	.444		
Q22	.426		.469
Q4	.415		
Q7	.380		
Q16	.363		
Q21	.312		.358
Q8		.642	

Item #	Component		
	1 Control Access	2 Personalization	3 Aggressive Defense
Q23		.612	
Q11		.559	
Q17		.558	
Q14		.425	
Q2		.400	
Q5		.397	
Q20		.379	
Q3			.466
Q6			.424
Q9			.395
Q12			.601
Q15			.524
Q18			.659

Note: Rotated Promax Solution. Only factor loadings above .3 are displayed.

Reliability Coefficients

Scale	# of items	alpha (α)	standardized alpha	5-week test-retest reliability (ICC)	9-week test-retest reliability (ICC)
Controlled Access	10	.73	.74	.87	.80
Personalization	8	.72	.72	.89	.70
Aggressive Defense	9	.74	.74	.84	.74

Appendix C: CPI-Dominance Equivalence Items

Using the scale provided, respond to each statement based on how accurately it describes you. There is no right or wrong answer and this survey simply hopes to measure a set of personality characteristics.

1 2 3 4 5

I…

1. Try to surpass others' accomplishments.
2. Impose my will on others.
3. Am not afraid of providing criticism.
4. Put people under pressure.
5. Hate to seem pushy.
6. Try to outdo others.
7. Demand explanations from others.
8. Challenge others' points of view.
9. Am quick to correct others.
10. Want to control the conversation.
11. Lay down the law to others.

Appendix D: Jackson (1971) Dominance Submission Scale

Using the scale provided, respond to each statement based on how accurately it describes you. There is no right or wrong answer and this survey simply hopes to measure a set of personality characteristics.

1 2 3 4 5

I Am...

_____1. Governing

_____2. Controlling

_____3. Commanding

_____4. Domineering

_____5. Influential

_____6. Persuasive

_____7. Forceful

_____8. Ascendant

_____9. Leading

_____10. Directing

_____11. Dominant

_____12. Assertive

_____13. Authoritative

_____14. Powerful

_____15. Supervising

Appendix E: Privacy Preference Scale

For the following questions, check the appropriate space according to the following information: SA = Strongly Agree; A = Agree; U = Undecided; D = Disagree; SD = Strongly disagree. Remember to answer all questions and mark only one space for each question. YOU may continue when you understand the above instructions.

1. People should respect other's right to be individual and different.

SA	A	U	D	SD
____	____	____	____	____

2. It is important to be able to confide in someone and know that your confidence will be kept secret.

SA	A	U	D	SD
____	____	____	____	____

3. Even intimate friends should respect your desire to keep certain thing to yourself.

SA	A	U	D	SD
____	____	____	____	____

4. Close friendships require having time to be alone together.

SA	A	U	D	SD
____	____	____	____	____

5. I often like to go to a secluded place to talk to an intimate friend.

SA	A	U	D	SD
____	____	____	____	____

6. It is important to me to live where I can do what I want without bothering other people.

SA	A	U	D	SD
____	____	____	____	____

7. I occasionally enjoy getting away from the rest of the world with an intimate friend.

SA	A	U	D	SD
____	____	____	____	____

8. It is very relaxing to get away from other people with just your family or close friends.

SA	A	U	D	SD
____	____	____	____	____

9. It is important for child to have a room of his own after he reaches a certain age.

SA	A	U	D	SD
____	____	____	____	____

10. It is important for a family to have time together, away from friends or relatives.

SA	A	U	D	SD
____	____	____	____	____

11. I like to have someone to whom I can tell everything about myself, even my deepest and most personal thoughts and feelings.

SA	A	U	D	SD
____	____	____	____	____

12. If I were not living with my family, I would rather share a two-bedroom apartment with three friends than live alone.

SA	A	U	D	SD	Does Not Apply
____	____	____	____	____	____

13. Even members of a family need to get away from each other now and then.

SA	A	U	D	SD
____	____	____	____	____

14. I sometimes want to get away from everyone for a while, even my close friends.

SA	A	U	D	SD
____	____	____	____	____

15. It is important to me to be able to be alone when I want to be.

SA	A	U	D	SD
____	____	____	____	____

16. There are times when I really want other people to leave me alone and not intrude on my thought even though we're in the same room.

SA	A	U	D	SD
____	____	____	____	____

17. I dislike being completely alone, either in a house or in the wilderness.

SA	A	U	D	SD
____	____	____	____	____

18. I want my friends to feel that they can drop in at my house any time they like.

SA	A	U	D	SD
____	____	____	____	____

19. I would prefer a neighborhood where neighbors had a tendency to drop in all the time to one in which it was difficult to get to know them.

SA	A	U	D	SD
____	____	____	____	____

20. I really enjoy being able to loan things to friends.

SA	A	U	D	SD
____	____	____	____	____

21. I would dislike living in an urban area where I never got to know my neighbors.

SA	A	U	D	SD
____	____	____	____	____

22. It usually annoys me to have people come to my home without letting me know they are coming.

SA	A	U	D	SD
____	____	____	____	____

23. I would like to live in a neighborhood where people do things together now and then.

SA	A	U	D	SD
____	____	____	____	____

24. Although I occasionally enjoy talking to my neighbors, I don't like to get involved with them.

SA	A	U	D	SD
____	____	____	____	____

25. When I have a very important decision to make I prefer to make it alone.

SA	A	U	D	SD
____	____	____	____	____

26. When I really need to find a solution for a problem, I do it best by talking with others rather than working alone.

SA	A	U	D	SD
____	____	____	____	____

27. I dislike talking about personal matters to a friend in a crowded place where other people can overhear us.

SA	A	U	D	SD
____	____	____	____	____

28. I usually don't tell people I don't know very well personal things about myself.

SA	A	U	D	SD
____	____	____	____	____

29. I don't like to talk about personal things with friends until I have known them a long time.

SA	A	U	D	SD
____	____	____	____	____

30. I would dislike having a patio or balcony that neighbors or passersby could see into.

SA	A	U	D	SD
____	____	____	____	____

31. I would be very upset if a friend read something I had written or my personal correspondence without my permission.

SA	A	U	D	SD
____	____	____	____	____

32. Acquaintances often ask questions that I consider rude and personal.

SA	A	U	D	SD
____	____	____	____	____

33. "Fences make good neighbors."

SA	A	U	D	SD
____	____	____	____	____

34. I would like to live in a large city because neighbors and acquaintances there would probably be less concerned about my private life.

SA	A	U	D	SD
____	____	____	____	____

35. I wouldn't mind living in a large city – at least everyone wouldn't know everything about you.

SA	A	U	D	SD
____	____	____	____	____

36. I would not like to live in a small town because there is too much gossip about your private life.

SA	A	U	D	SD
____	____	____	____	____

37. I would like to have acquaintances at work, at home, in clubs, and so forth that don't know each other because each group would only know a part of me.

SA	A	U	D	SD
____	____	____	____	____

38. It is important to me to have a house away from the noise of traffic.

SA	A	U	D	SD
____	____	____	____	____

39. The constant noise of modern life is really rather exciting.

SA	A	U	D	SD
____	____	____	____	____

40. I would like to live in a secluded house out of sight of any other houses.

SA	A	U	D	SD
____	____	____	____	____

41. "A house should be so far away from a neighbor that only by yelling at the top of one's lungs can one be heard."

SA	A	U	D	SD
____	____	____	____	____

42. It wouldn't bother me to be able to overhear the noise of everyday living from neighboring houses (footsteps, water, running, etc.).

SA	A	U	D	SD
____	____	____	____	____

43. Although I enjoy walking in the woods, I would rather not go alone.

SA	A	U	D	SD
____	____	____	____	____

44. I would like to have a private retreat which no one would enter without asking me.

SA	A	U	D	SD
____	____	____	____	____

Appendix F: Contact Seeking and Contact Avoidance Behavior Checklist

The following questions concern your style of interacting with others. We are interested in how you deal with other people in the residence hall – both when you want to be with others and when you want privacy. First check those items on the left that you have used. Then on the right indicate how well each works for you by circling the appropriate number (1=not well; 4=very well).

<u>If I want to have contact with others, I do the following:</u>

_____1. Open the door to my room	1	2	3	4
_____2. Go to the lounge/commons area	1	2	3	4
_____3. Go to the student center or another popular place	1	2	3	4
_____4. Call someone on the telephone	1	2	3	4
_____5. Study at a time and place when people are around	1	2	3	4
_____6. Go looking for people in their rooms	1	2	3	4
_____7. Turn on music to attract people	1	2	3	4
_____8. Use the bathroom to wash up at a popular time	1	2	3	4
_____9. Invite people to my room	1	2	3	4

<u>If I want to avoid having contacts with others, I do the following:</u>

_____1. Shut the door to my room	1	2	3	4
_____2. Find a quiet spot on campus or in the dorm	1	2	3	4
_____3. Arrange my room to provide for privacy	1	2	3	4
_____4. Tune out noise when I want to concentrate	1	2	3	4
_____5. Play loud music and/or put on headphones to shut out distractions	1	2	3	4

_____6. Go for a walk by myself 1 2 3 4

_____7. Get up early/stay up late to get the bathroom to myself

1 2 3 4

_____8. Get ready for bed in the bathroom if others are in my room

1 2 3 4

_____9. I have learned to sleep/study with other people in the room and/or with parties on the floor 1 2 3 4

Appendix G: Environmental Assessment Adjectives from Kasmar (1970)

Take about two minutes to really think about your dorm room; then rate your opinion of the room with the adjective pairs below. Some of the pairs might seem unusual, but you'll probably feel more one way than the other. So, for each pair, put a check mark (Example: ----:-~~---~~:----) close to the adjective which you believe to describe your feelings better. The more appropriate that adjective seems, the closer you put your check mark to it.

Adequate Size	----:-----:----:----:----:----:----:----:----	Inadequate Size
Unappealing	----:-----:----:----:----:----:----:----:----	Appealing
Attractive	----:-----:----:----:----:----:----:----:----	Unattractive
Dull	----:-----:----:----:----:----:----:----:----	Bright
Cheerful	----:-----:----:----:----:----:----:----:----	Gloomy
Dirty	----:-----:----:----:----:----:----:----:----	Clean
Drafty	----:-----:----:----:----:----:----:----:----	Stuffy
Full	----:-----:----:----:----:----:----:----:----	Empty
Colorful	----:-----:----:----:----:----:----:----:----	Drab
Uncomfortable	----:-----:----:----:----:----:----:----:----	Comfortable
Comfortable Temperature	----:-----:----:----:----:----:----:----:----	Uncomfortable Temperature
Ordinary	----:-----:----:----:----:----:----:----:----	Distinctive
Huge	----:-----:----:----:----:----:----:----:----	Tiny
Restricted Space	----:-----:----:----:----:----:----:----:----	Free-Space
Fresh Odor	----:-----:----:----:----:----:----:----:----	Stale Odor

Functional	----:----:----:----:----:----:----:----:----	Non-functional
Good Lighting	----:----:----:----:----:----:----:----:----	Poor Lighting
Public	----:----:----:----:----:----:----:----:----	Private
Quiet	----:----:----:----:----:----:----:----:----	Noisy
Small	----:----:----:----:----:----:----:----:----	Large
Light	----:----:----:----:----:----:----:----:----	Dark
Single Purpose	----:----:----:----:----:----:----:----:----	Multiple Purpose
Neat	----:----:----:----:----:----:----:----:----	Messy
Unpleasant	----:----:----:----:----:----:----:----:----	Pleasant
Roomy	----:----:----:----:----:----:----:----:----	Cramped
Useless	----:----:----:----:----:----:----:----:----	Useful
Cool	----:----:----:----:----:----:----:----:----	Warm
Uncrowded	----:----:----:----:----:----:----:----:----	Crowded
Poorly Organized	----:----:----:----:----:----:----:----:----	Well-Organized
Well-Planned	----:----:----:----:----:----:----:----:----	Poorly Planned
Narrow	----:----:----:----:----:----:----:----:----	Wide

Appendix H: Mehrabian and Russell (1974) Environmental Affect Scale

Take about two minutes to really get into the mood of the room; then rate your feelings in the situation with the adjective pairs below. Some of the pairs might seem unusual, but you'll probably feel more one way than the other. For each pair, put a check mark (Example: ----:-✓---:----) close to the adjective which you believe to describe your feelings best. The more appropriate that adjective seems, the closer you put your check mark to it.

Sluggish	----:-----:----:----:----:----:----:----:----	Frenzied
Influenced	----:-----:----:----:----:----:----:----:----	Influential
Sleepy	----:-----:----:----:----:----:----:----:----	Wide Awake
Annoyed	----:-----:----:----:----:----:----:----:----	Pleased
Controlled	----:-----:----:----:----:----:----:----:----	Controlling
Bored	----:-----:----:----:----:----:----:----:----	Relaxed
Submissive	----:-----:----:----:----:----:----:----:----	Dominant
Unsatisfied	----:-----:----:----:----:----:----:----:----	Satisfied
Unaroused	----:-----:----:----:----:----:----:----:----	Aroused
Unhappy	----:-----:----:----:----:----:----:----:----	Happy
Despairing	----:-----:----:----:----:----:----:----:----	Hopeful
Cared-for	----:-----:----:----:----:----:----:----:----	In control
Awed	----:-----:----:----:----:----:----:----:----	Important
Relaxed	----:-----:----:----:----:----:----:----:----	Stimulated
Dull	----:-----:----:----:----:----:----:----:----	Jittery
Guided	----:-----:----:----:----:----:----:----:----	Autonomous

Appendix I: Cognitive and Perceptual Resident Room Questionnaire

The following questions pertain to the residence hall room that you are currently living in. Answer each question by filling in the space provided or by circling the response that best describes your perception of the space. There is no right or wrong answer; each response is a matter of personal opinion and/or perception.

1. How many square feet (ft^2) is your residence hall room (open response)?

   _____ft^2

2. What percentage of the residence hall room is considered "shared space" between you and your roommate (respond from 0 – 100)? _____%

3. What percentage of the residence hall room is considered "your space" (respond from 0 – 100)? _____%

4. On average, how many waking hours do you spend in the room alone (without your roommate) per day? _____

5. On average, how many waking hours do you spend in the room with your roommate per day? _____

6. How many nights per week do you sleep in the room? _____

7. How many nights per week does your roommate sleep in the room? _____

8. How many people can be in your room visiting before it starts to feel crowded?

   _____

9. Compared to the last place you lived, your residence hall bedroom is…

¼ the size	½ the size	¾ the size	about the same size
1 ¼ the size	1 ½ the size	1 ¾ the size	at least twice the size

10. Compared to your roommate, how attached to your room do you think you are?

Not at all attached Somewhat less attached Just as attached

Somewhat more attached A lot more attached

11. If your roommate had 3 friends from the residence hall over to your room, how uncomfortable would you feel in the room (1 = very uncomfortable, 5 = very comfortable)? 1 2 3 4 5

12. Do you have enough space to function effectively in your residence hall room (1 = not at all, 5 = definitely)? 1 2 3 4 5

13. Does your residence hall room feel like a home to you (1 = not at all, 5 = definitely)?

1 2 3 4 5

14. If your roommate had 5 friends from the residence hall over to your room, how uncomfortable would you feel in the room (1 = very uncomfortable, 5 = very comfortable)? 1 2 3 4 5

15. How satisfied would you be in an apartment with a bedroom about this size (1 = not at all, 5 = very satisfied)? 1 2 3 4 5

16. Compared to other residents' rooms in your residence hall that are the same size, how well do you use your space (1 = not very well, 5 = very well)?

1 2 3 4 5

17. Compared to the other residents' in your residence hall, how attached to your room do you think you are?

Not at all attached Somewhat less attached Just as attached

Somewhat more attached A lot more attached

18. If your roommate had 7 friends from the residence hall over to your room, how uncomfortable would you feel in the room (1 = very uncomfortable, 5 = very comfortable)? 1 2 3 4 5

19. If you could design a residence hall, what would your rooms be like (size of rooms, layout, features, etc.)? Use the back of sheet if necessary.

Appendix J: Resident Prior Experience Questionnaire

Answer each of the following questions related to your demographic make-up, prior experiences with room sharing, previous living arrangements, and overall family structure by filling in the blank or by circling the response that best describes your experiences.

1. What is your age in years? _____
2. What is your sex? Male Female
3. How many brothers do you have? _____ older brothers _____ younger brothers
4. How many sisters do you have? _____older sisters _____ younger sisters
5. What is your birth order in the family (i.e., if you are the second oldest out of 4 children, you would respond "2 out of 4")? ____ out of _____
6. What statement best describes your parents' marital status?

   Never married Married to each other

   Divorced/Separated and both single Divorced/Separated with Mom remarried

   Divorced/Separated with Dad remarried Divorced/Separated with both remarried
7. During the course of your lifetime, how many different homes have you had?

   _____
8. What city is your current residence in? _____ What state? _____
9. What is the 5 digit zip code of your current residence? _____
10. Do you or your family currently rent or own your current residence?

    Rent Own

11. Which best describes the type of residence you live in?

Apartment Condominium House

12. How long have you been in the current residence? _____

13. If less than 1 year, how long were you in the previous residence? _____

14. How many bedrooms are in your current residence? _____

15. How many bathrooms are in your current residence (1 full bath includes toilet, sink, and shower/bath; ½ bath includes toilet and sink but no shower/bath)?

_____

16. How many rooms are in your current residence? _____

17. How many square feet is your room in your current residence (e.g. 10 ft. X 10 ft. = 100 ft^2)? _____ ft^2

18. How confident are you with you estimate of the square footage of your room?

_____%

19. Have you ever shared a room with someone during summer camp or a similar type of temporary living arrangement?

20. If yes, with how many people did you share a room? _____ For how long?

_____

21. In the past, have you ever shared a room with a sibling or other relative as a permanent living arrangement? Yes No

22. If yes, with how many people did you share the room? _____ For how long?

_____

23. Are you currently sharing a room with a sibling or other relative as a permanent living arrangement? Yes No

24. If yes, with how many people do you share the room? _____ For how long?

_____

25. In the past, have you every shared a room with a non-relative (e.g., friend, significant other, etc) as a permanent living arrangement? Yes No

26. If yes, with how many people did you share the room? _____ For how long?

_____

27. Are you currently sharing a room with a non-relative (e.g., friend, significant other, etc.) as a permanent living arrangement? Yes No

28. If yes, with how many people do you share the room? _____ For how long?

_____

Appendix K: Parental Residence Survey

Answer the following questions related to the physical properties of your current residence and the living arrangements within your residence by either filling in the blank or circling the response that best describes your residence. Follow the same instructions for the questions pertaining to your child's experiences and living arrangements within your residence.

1. What city is your current residence in? _____ What state? _____
2. What is the 5 digit zip code of your current residence? _____
3. Do you or your family currently rent or own your current residence?

   Rent Own
4. Which best describes the type of residence you live in?

   Apartment Condominium House
5. How long have you been in the current residence? _____
6. If less than 1 year, how long were you in the previous residence? _____
7. During the course of your child's lifetime, how many different homes has s/he lived in? _____
8. How many bedrooms are in your current residence? _____
9. How many bathrooms are in your current residence (1 full bath includes toilet, sink, and shower/bath; ½ bath includes toilet and sink but no shower/bath)?

   _____
10. How many rooms are in your current residence? _____
11. How many square feet is your current residence? _____ft^2

12. How many square feet is you child's room in your current residence (e.g., 10 ft. X 10 ft. = 100 ft^2)? _____ ft^2

13. In the current residence, has your child ever changed bedrooms? Yes No

14. If yes, how many times? _____ When was the most recent change?

_____

15. Has your child ever shared a room with someone during summer camp or a similar type of temporary living arrangement?

16. If yes, with how many people did s/he share a room? _____ For how long?

_____

17. In the past, has s/he ever shared a room with a sibling or other relative as a permanent living arrangement? Yes No

18. If yes, with how many people did s/he share the room? _____ For how long?

_____

19. Is your child currently sharing a room with a sibling or other relative as a permanent living arrangement? Yes No

20. If yes, with how many people does s/he share the room? _____ For how long?

_____

21. On a scale of 1 to 10, how long will your child take to adjust to living in the residence halls (1 = will take a long time to adjust, 10 = will adjust very quickly)?_____

22. On a scale of 1 to 10, how territorial would you say that your child is (1 = not territorial at all, 10 = very territorial)? _____

23. On a scale of 1 to 10, how private would you say that your child is (1 = not a private person at all, 10 = very private person)? _____

24. On a scale of 1 to 10, how happy would you say that your child is in general (1 = not happy at all, 10 = extremely happy)? _____

25. On a scale of 1 to 10, how well do you think your child handles stress in general (1 = does not handle stress well, 10 = handles stress extremely well)? _____

26. On a scale of 1 to 10, how dominant of a personality do you think your child has (1 = not dominant/very submissive, 10 = very dominant/not submissive)?

_____

Appendix L: Self-reported Room Personalization Survey

Answer each of the following questions related to your residence hall room and the personalizations, or decorations, that you have added to the room by filling in the blank or circling the response that best describes your thoughts.

1. How long were you living in your room before you put up personalizations (e.g., posters, pictures, banners, etc.)? _____
2. How many posters have you put on the wall? _____
3. Of those posters, how many would you consider to be related to:

   Art _____ Music/movies _____ Celebrities/models _____ Drinking _____

   Religion _____ CSU_____ Local sports _____ Hometown sports _____

   Local area/attractions _____ Hometown area/attractions _____ Other _____
4. How many posters has your roommate put on the wall? _____
5. How many pictures of friends/family have you put on display in the room?

   _____
6. Of those pictures, how many are of:

   Family _____ Hometown friends _____ Local Friends _____

   Hometown significant other _____ Local significant other _____
7. How many pictures of friends/family has your roommate put on display?

   _____
8. How many other decorations (e.g., curtains, carpets, window decorations, plants, etc.) have you added to the room? _____

9. Please describe the other decorations that you have added to your room by explaining the number of and type of decorations used.

_____

_____

10. How many other decorations (e.g., curtains, carpets, window decorations, plants, etc.) has your roommate added to the room? _____

11. Have you placed personalizations on the outside of your door? Yes No

12. If yes, what did you put up and why did you do it?

_____

_____

13. On a scale of 1 to 10, how much are your room decorations reflective of your personality (1 = not at all reflective, 10 = very much reflective)? _____

14. On a scale of 1 to 10, how important is personalizing your room when trying to feel 'at home' (1 = not important at all, 10 = extremely important/vital)?

_____

15. On a scale of 1 to 10, how does your amount of personalization compare to other people in the residence hall (1 = way less than most, 10 = way more than most)?

_____

16. On a scale of 1 to 10, how important are your decorations in claiming 'your space' (1 = not important at all, 10 = extremely important/vital)?

_____

Appendix M: Resident Satisfaction Questionnaire

The following questions deal with general opinions you have about the University and resident hall life. Please answer each question according to the following:

1	2	3	4
Strongly Disagree	Agree	Disagree	Strongly disagree

1. Residence hall students are generally friendly.
2. I often feel alone at the University.
3. Social life here is generally good.
4. A big campus like this is lonely.
5. So far this has been a generally good year.
6. Sometimes I feel homesick.
7. I'm adjusting pretty well to the University.
8. It is difficult to make friends with people in my classes.
9. I feel like the residence hall is "home" now.
10. People here are interested only in superficial relationships.
11. I feel pretty good about my academic program and classes.
12. I cannot figure out how this University works.
13. I like living in the residence hall.
14. No one here cares about students.
15. The food at the residence hall is satisfactory.
16. Cultural/social opportunities at the university aren't too good.
17. If I had to do it all over again, I would still attend the University.
18. If I had to do it all over again, I wouldn't live in the residence halls.

Appendix N: Social Satisfaction Questionnaire (SSQ)

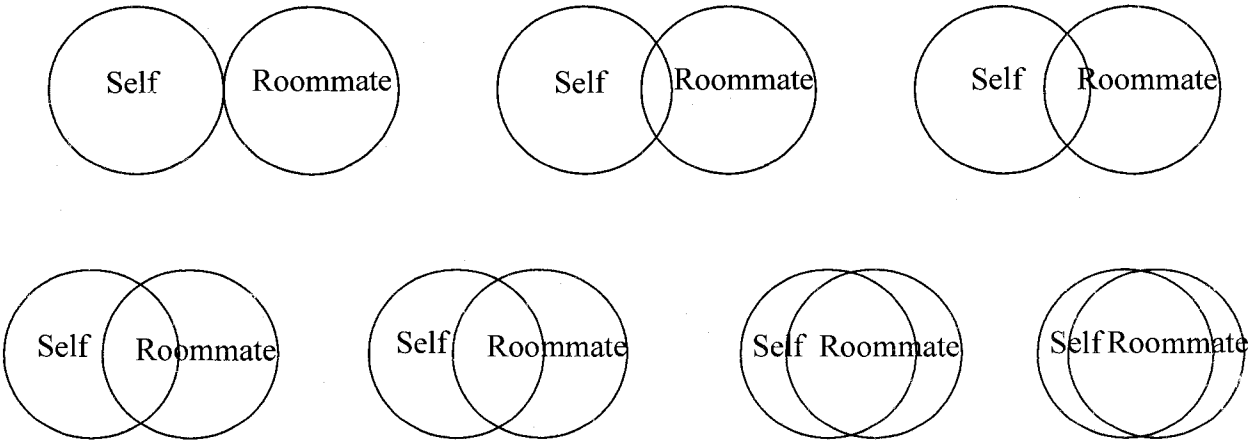
For each item below, please *circle* the response that is most true for you *on the average.*

1. How satisfied are you with your classes at Colorado State University?	Very Unsatisfied	Somewhat Unsatisfied		Somewhat Satisfied	Very Satisfied
2. How satisfied are you with your current housing/living arrangements?	1	2		3	4
3. How satisfied are you with the relationship you have with your roommate?	1	2		3	4
4. How satisfied do you think your roommate would say s/he is with your relationship?	1	2		3	4
5. How do you think your roommate feels about his/her current housing/living arrangements?	1	2		3	4
6. How satisfied are you with the amount and type of extracurricular activities available to you as a Colorado State University student (sports events, cultural events, resident hall activities, etc.)?	1	2		3	4
7. How comfortable do you feel living with your current roommate?	Very Uncomfortable	Somewhat Uncomfortable		Somewhat Comfortable	Very Comfortable
8. How well do you feel you get along with your roommate?	Not at all	Poor Most of the Time	Okay	Good Most of the Time	Very Well
9. How many times per week do you eat with your roommate?	0	1-3	4-6	7-9	10+
10. How many times per month do you attend sports events sponsored by CSU (football or basketball games, etc.)?	0	1-2	3-4	5-6	7+
11. How many times per week do you go to movies, parties, or other similar social activities with your roommate?	0	1-2	3-4	5-6	7+

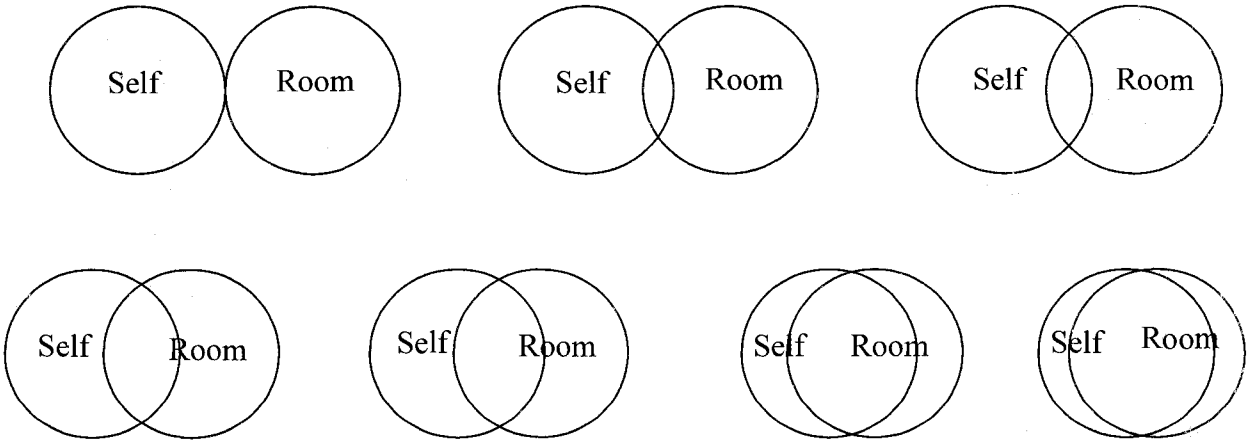
12. How many times per month do you attend cultural activities sponsored by CSU (theater, concerts, etc.)?	0	1-2	3-4	5-6	7+
13. How many times per week do you study with your roommate?	0	1-2	3-4	5-6	7+
14. How many times per month do you attend activities sponsored by social clubs on campus?	0	1-2	3-4	5-6	7+
15. How many times per week do you run errands with your roommate?	0	1-2	3-4	5-6	7+
16. How many times per month do you attend residence hall events or activities sponsored by the housing office?	0	1-2	3-4	5-6	7+
17. How many times per week do you and your roommate visit other friends together?	0	1-2	3-4	5-6	7+
18. How many times per week do you and your roommate have conflicts or arguments?	0	1-2	3-4	5-6	7+
19. How often do you plan your schedule to avoid your roommate?	Once in a while	Occasionally	As often as possible	Frequently	Never

Appendix O: Inclusion of the Other in Self Scale

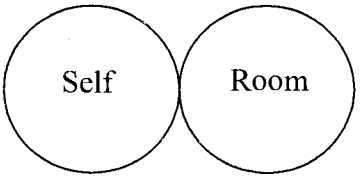
Which of the following diagrams best describes the closeness of your relationship with your roommate?

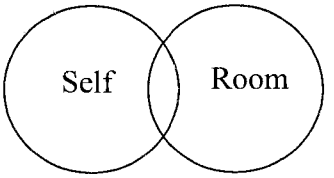


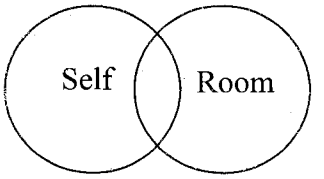
Which of the following diagrams best describes the closeness of your relationship with your current residence (residence hall room)?

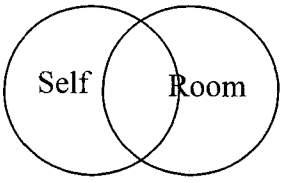


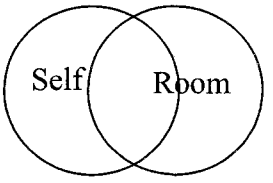
Which of the following diagrams best describes the attachment you feel towards your previous residence?

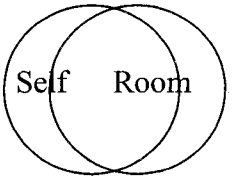


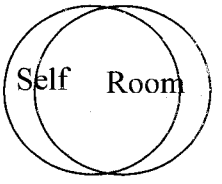












Appendix P: General Resident Well-being Questionnaires

UCLA Loneliness Scale (Version 3)

The following statements refer to how people sometimes feel. For each statement, please indicate how often you feel the way described by writing a number in the space provided. Here is an example:

How often do you feel happy?

If you never felt happy you would response "never"; if you always felt happy you would respond "always."

NEVER	RARELY	SOMETIMES	OFTEN
1	2	3	4

1. How often do you feel that you are "in tune" with the people around you?

_____

2. How often do you feel that you lack companionship?

_____

3. How often do you feel that there is no one to turn to?

_____

4. How often do you feel alone?

_____

5. How often do you feel part of a group of friends?

_____

6. How often do you feel that you have a lot in common with the people around you?

_____

7. How often do you feel that you are no longer close to anyone?

_____

8. How often do you feel that your interests and ideas are not shared by those around you?

_____

9. How often do you feel outgoing and friendly?

_____

10. How often do you feel close to people?

_____

11. How often do you feel left out?

_____

12. How often do you feel that your relationships with others are not meaningful?

_____

13. How often do you feel that no one really knows you well?

_____

14. How often do you feel isolated from others?

_____

15. How often do you feel you can find companionship when you want it?

_____

16. How often do you feel that there are people who really understand you?

_____

17. How often do you feel shy?

_____

18. How often do you feel that people are around you but not with you?

_____

19. How often do you feel that there are people you can talk to?

_____

20. How often do you feel that there are people you can turn to?

_____

Perceived Stress Questionnaire (PSS)

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate *how often* you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

3. In the last month, how often have you felt nervous and "stressed"?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

4. In the last month, how often have you dealt successfully with irritating life hassles?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

6. In the last month, how often have you felt confident about your ability to handle your personal problems?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

7. In the last month, how often have you felt that things were going your way?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

8. In the last month, how often have you found that you could not cope with all the things that you had to do?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

9. In the last month, how often have you been able to control irritations in your life?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

10. In the last month, how often have you felt you were on top of things?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

11. In the last month, how often have you been angered because of things that happened that were outside of your control?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

13. In the last month, how often have you been able to control the way you spend your time?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

14. In the last month, how often have you felt difficulties were pilling up so high that you could not overcome them?

0	1	2	3	4
never	almost never	sometimes	fairly often	very often

The Satisfaction with Life Scale

Directions: Below are five statements with which you may agree or disagree. Using the 1-7 scale below, indicate your agreement with each item by placing the appropriate number in the line preceding that item. Please be open and honest in your responding.

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree

_____ 1. In most ways my life is close to my ideal.

_____ 2. The conditions of my life are excellent.

_____ 3. I am satisfied with life

_____ 4. So far I have gotten the important things I want in life

_____ 5. If I could live my life over, I would change almost nothing

Subjective Happiness Scale (SHS)

For each of the following statements and/or questions, please circle the point on the scale that you feel is most appropriate in describing you.

1. In general, I consider myself:

1	2	3	4	5	6	7
not a very happy person						a very happy person

2. Compared to most of my peers, I consider myself:

1	2	3	4	5	6	7
less happy						more happy

3. Some people are generally very happy. They enjoy life regardless of what is going on, getting the most out of everything. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

4. Some people are generally not very happy. Although they are not depressed, they never seem as happy as they might be. To what extent does this characterization describe you?

1	2	3	4	5	6	7
not at all						a great deal

Overall Health Items

1. How would you rate your health during the 12 months prior to entering college (1 = very poor; 10 = very good)? _____

2. In the year prior to entering college, how many times did you get sick? _____

3. In the year prior to entering college, how many times did you visit a doctor? _____

4. How would you rate your health since entering college (1 = very poor; 10 = very good)? _____

5. Since entering college, how many times have you been sick? _____

6. Since entering college, how many times have you visited a doctor? _____

7. Overall, how would you rate your general health (1 = very poor; 10 = very good)?

_____

Academic Performance Questionnaire

1. How many courses are you enrolled in this semester? _____
2. How many credit hours are you taking this semester? _____
3. List your classes and the grade you expect to receive in that class along with current grades and attendance.

Class	Expected Final Grade	Test grades	Paper grades	Other grades	Percentage of study time spent	Percentage of classes attended

4. How many hours do you study on an average week? _____
5. How many hours do you study on a busy week? _____
6. The semester is 16 weeks long. How many busy weeks do you think you'll have? _____
7. How many hours do you study in your room on the average week? _____
8. How many hours do you study in your room on a busy week? _____
9. Compared to your friends, how much are you studying (1 = a lot less; 5 = a lot more)
10. Compared to everyone else in your hall, how much are you studying (1 = a lot less; 5 = a lot more)
11. Compared to your friends, how are you doing in your classes (1 = a lot worse; 5 = a lot better)

12. Compared to everyone else in your hall, how are you doing in your classes (1 = a lot worse; 5 = a lot better)

Appendix Q: Participant Recruitment Letter

Department of
Psychology
Fort Collins, Colorado 80523-1876
(970) 491-6363
FAX: (970) 491-1032
www.colostate.edu/Depts/Psychology/

August 1st, 2007

Dear Honors Program Participant,

The University Honors Program and the Department of Psychology at Colorado State University are conducting a research project this Fall 2007 semester in the new Academic Village residence halls. The project is designed to examine several aspects of student behaviors related to the somewhat unique conditions involved in resident hall living. The establishment of personal boundaries and the ability to control the amount of personal interaction between people are of primary interest for this project.

Because of your enrollment in the Honors Program and your residential assignment to the Academic Village we are contacting you to participate in this project. Participation will involve filling out questionnaires both online at your current residence prior to move-in day as well as in person at your new residence hall after the semester begins. The information that you provide us with will be shared with the Honors Program, Housing and Food Services, and the Department of Psychology in hopes of better understanding some of the issues that can hinder or enhance student growth and achievement when first attending college.

Your participation in this project is completely voluntary, but because of a limited number of students available we are hopeful that you will choose to participate. If you decide to help with this research, you will receive a small reward for each time you complete our questionnaires during the semester (4 times total). Also, participants who complete both the at-home questionnaire and the 4 administrations of the on-campus questionnaires will be entered into a drawing for a $500 cash prize.

Attached to this letter is a cover sheet that explains the project in more detail and gives you the web address for the at-home online questionnaire that will need to be completed before August 17th. If you have any questions or comments about this project, or if you would prefer to have the web address e-mailed to you, please feel free to contact me by either phone or e-mail. Your participation in this project will be very beneficial for several University departments and we look forward to your cooperation. Thank you!

Jacob Benfield, M.S.
Department of Psychology-1876
Colorado State University
(970) 491-7749
jake.benfield@colostate.edu

Appendix R: Study One Cover Letter

Consent to Participate in a Research Study

Colorado State University

TITLE OF STUDY: *A Longitudinal Assessment of Privacy and Territory Establishment in a College Residence Hall Setting-Study 1*

PRINCIPAL INVESTIGATOR: Paul Bell, PhD. 970-491-7215

CO-PRINCIPAL INVESTIGATOR: Jacob Benfield, M.S. 970-491-7749

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? You are being asked to participate in this research because you are going to be living within a new residence hall at Colorado State University. This project is trying to understand how that type of residence hall affects different behaviors and thoughts.

WHO IS DOING THE STUDY? The Department of Psychology is doing this study with the support of the University Honors Program and Housing and Dining Services at Colorado State University

WHAT IS THE PURPOSE OF THIS STUDY? This study is being conducted in order to better understand the process students go through when moving into a new environment. Because of the somewhat unique conditions involved in residence hall living, the establishment of personal boundaries and the ability to control the amount of personal interaction between people are of primary interest.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? The majority of this study will take place inside your residence hall room at Colorado State University and will last through the 11th week of the Fall 2007 semester. One part of this study will take place at your current residence before you move into your residence hall.

WHAT WILL I BE ASKED TO DO? You will be asked to fill out a series of questionnaires at 5 different times. These times will be: 2 weeks before Fall semester, the 1st week of Fall semester, the 3rd week of Fall semester, the 7th week of Fall semester, and the 11th week of Fall semester. Each questionnaire takes about 1 hour to complete so you will spend about 5 hours during the course of the 13-week study. For a small group of participants, observations will be made of the residence hall rooms and the decorations contained in it. Your written consent must be given before photographs of your decorations can be taken. Observations and consent for them will take place at a later date.

WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY? You will receive a $6 credit to your university convenience account after completing each of the four questionnaires that are given on-campus ($24 total). Students who complete the questionnaires all 5 times will also be entered into a drawing for a $500 cash prize. Only those completing all 5 questionnaires will be eligible for the large drawing.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? If you are not a participant in the University Honors Program or are not living in the new Academic Village residence hall you should not participate in this study.

ARE THERE ANY BENEFITS FROM TAKING PART IN THIS STUDY? The results of this research will be shared with the University Honors Program and Housing and Dining Services, who will use this research to better meet the needs of future students. Participants receive no direct benefit from participation but will also be informed about the results of the project which they may find interesting or insightful regarding some of their residence hall behaviors.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

WHAT WILL IT COST ME TO PARTICIPATE? No financial costs will arise from your participation in this research. However, you will be asked to spend time completing surveys on five separate occasions.

CAN MY TAKING PART IN THE STUDY END EARLY? If you were to move from the Academic Village residence hall during the research project, you would be excluded from further participation in the project.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS? There are no known risks for participating in this study. However, it is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

WHO WILL SEE THE INFORMATION THAT I GIVE? We will keep private all research records that identify you, to the extent allowed by law.

Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be identified in these written materials. We may publish the results of this study; however, we will keep your name and other identifying information private.

In order to match your records from each questionnaire, you will be assigned a unique ID number that contains a code for your residence hall (e.g., A = Corbett), the order you agreed to participate in (e.g., 12th participant = 012), the first 2 letters of your mother's first name (e.g., Jamie = JA), and the last two digits of your phone number. A list that pairs your name and your code will be kept in a secure location until the end of the semester when it will be shredded.

We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is. For example, your name will be kept separate from your research records and these two things will be stored in different places under lock and key. You should know, however, that there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court.

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH? The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

WHAT IF I HAVE QUESTIONS? Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions about the study, you can contact the investigator, Paul Bell at 970-491-7215. If you have any questions about your rights as a volunteer in this research, contact Janell Meldrem, Human Research Administrator at 970-491-1655. This cover letter is yours to keep for your records.

WHAT ELSE DO I NEED TO KNOW? Your willingness to fill out the questionnaires acknowledges that you have read the information stated and willingly participate in this project.

To Access the first round of the questionnaire, please access this web address on an internet ready computer:

https://www.surveymonkey.com/s.aspx?sm=Xd3vltlxlP_2bSXkRKQr5nKQ_3d_3d

If you have problems accessing the link or would prefer to have an electronic link sent to you, please e-mail Jake Benfield at jake.benfield@colostate.edu and he will send you an electronic link to the questionnaire. Please complete the first round of questionnaires before August 17th, 2007.

Dr. Paul Bell is supervising the completion of this project for the Department of Psychology. If you need to contact him with any questions or concerns you may have he can be reached at (970) 491-7215 or via e-mail at paul.bell@colostate.edu.