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Coffee-house interiors impact the way in which users engage within a space and with one another. User behavior is directly affected by environmental elements, including the organization and content of the space. A proverbial coffee-culture has developed around the interactions typical of coffee-house settings. Throughout history, these interactions have included education, activism, and social engagement, aligning coffee-house activity with that of informal learning environments. Interactions in coffee-house settings can be analyzed using visual and content analysis, unobtrusive participant observation, and behavioral mapping, as a means of understanding interactions. Human engagement with one another, and with the surrounding environment, is influenced by the physical elements built into these aesthetic differences. The relationship between environment and user affects the types of interactions that occur in the space. The ways in which a user engages in interaction within his or her environment influence how they interpret and learn from an experience. The patterns of interaction occurring in coffee-house environments can be approached as a tool for understanding social and environmental engagement in informal learning environments.

PATTERNS OF BEHAVIOR OVER COFFEE: AN EXPLORATION OF ENGAGEMENT AMONG COFFEE-HOUSE PATRONS IN GREENSBORO, NORTH CAROLINA

by

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APPROVAL PAGE

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CHAPTER I

INTRODUCTION

Interiors impact the ways in which users engage within a space and with one another. User behavior is directly affected by environmental elements, including the organization and contents of a space. Human engagement both with others and with the surrounding environment is influenced by the physical elements manifested and reinforced by these aesthetic differences. The relationship between the environment and the user affects the types of interactions that occur in the spaces. The way that a user engages with her/his environment influences the ways in which s/he interprets and learns from an experience.

A sufficiently unique social environment has developed around the interactions typical of coffee-house settings that it could be referred to as a *coffee-culture*. Throughout history, interactions typical of coffee-house patrons have included education, activism, and social engagement, aligning coffee-house activity with that of informal learning environments. Informal learning in coffee-house settings can be studied using direct observation and behavioral mapping as a means of identifying and understanding interactions.

Purpose of the Study

The patterns of interaction outlined herein provided a foundation for further understanding the ways in which learning environments can be supportive of user engagement. To develop this understanding, I studied the environments and patrons of five coffee-houses situated within a one mile radius of the Gatewood Studio Arts Building at The University of North Carolina at Greensboro (see: figure 5). I engaged in a phenomenological study of these coffee-houses as informal environments for the observation of the behavior of a controlled population.

Justification of the Study

The findings from this study inform scholarship in interiors by contributing to the body of knowledge regarding human interactions in the built environment. The data gathered through this study indicate the existence of the possibility for linking patterns of interaction present in coffee-house environments with those of other informal environments. Designers and architects can use the theories connected in this study as a means of programming designs for specific interactions. Designers can use this understanding to better relate interior design to its intended function, facilitating greater engagement and meaningful connection between a user and an environment.

Research Question

The goal of this study is to examine how human interactions are influenced by and related to the elements of the built environment in coffee-houses. Further, this investigation outlines the ways in which interior elements relate to human psychological

responses. Specifically, this investigation is approached in terms of interactions associated with informal activity. The primary question addressed in this thesis was, how does the experience of the interior environment of a coffee-house manifest itself in the observable social interactions among patrons?

Assumptions and Limitations

This investigation is IRB exempt because the population sample used in my study was self-selecting and uninfluenced by my observations. Any contact I had with the target individuals was unobtrusive and aligned with behavior typical of the setting. Photographs taken for this study captured the landscape of point-in-time patron activity; they neither focus on particular patrons, nor were they captured at times during which I gathered observational data.

Time and funding limited my exploration to the development of an understanding of the environments under study. In the future, the information gathered for this study could be utilized in the design and construction of a new prototype environment to test the observations. The patterns of interaction established in this thesis are designed to provide a foundational system by which informal learning environments may be examined. I used *A Pattern Language* as the organizing framework for my observations, and did not compare and test the relationships between human-environmental interaction theories, but rather interpreted the information as it could be organized within the pattern language framework.

Definitions

Circulation: The pattern(s) by which a space can be navigated; defined by a system of routes or paths defining the ways to move through and use the space (Sully, 2012). The movement characteristic of an environment is relative to the function or activities which occur in the space (Rengel, 2007; Nussbaumer, 2009).

Critical Theory: Human knowledge is generated according to three cognitive interests: work, interaction, and power.

Crowing/ Density: Although measurable, crowding is a psychological complex related to territory and proximity. The process involves a situation, emotion, and subsequent behavior, often resulting in restricted social interaction (Kopec, 2006, pp.74).

Elements of Design

- **Line:** Directs attention, emphasizes basic structure, and defines boundaries. Vertically, lines can stop the eye; horizontally, they can relax the eye; diagonally, they activate the eye.
- **Space/ Shape:** An area defined by a literal or implied boundary, or by a change in value, color, or texture. Provides visual focus to direct a user's attention; can be used to emphasize key ideas or simplify a complicated concept. Simple shapes are easily understood and remembered.

- **Texture:** Tactile characteristics of a material that implied by, or experienced by, the sense of touch.
- **Color:** The light from an object that is reflected by the objects we see.
- **Value:** Describes the contrast of lightness/ darkness, relative to an object, shape, or space.

(Kovalik & King, retrieved 2013)

"Flow" Theory: Matching a user's skills and environmental challenges to achieve a satisfactory state of being, or homeostasis. This feeling is achieved when a person is absorbed in an activity to the degree that nothing else seems important and sense of time is lost (Csikszentmihalyi, 2011).

Informal & Incidental Learning: Informal learning occurs when an individual willingly engages in self-directed educational activity outside a formal learning environment, such as a classroom (Marsick & Watkins, 2001).

Place: A basic unit of interior design; an identifiable entity with a character established by the activities and functions that it accommodates (Rengel, 2007). "Place" is a conceptual sense of belonging to an environment. This attachment can be achieved through human-centered design, to a collection of spaces relating in terms of function, delimitation, and differentiation. *(See "Place Identity")*

Place Identity: "How people incorporate a place into the larger concept of their own identities or senses of self. Sense of place develops when a level of comfort and feelings of safety are associated with a place, which for many people translate to a sense of belonging. Place attachment is a person's bond with the social and physical environments of a place. People attach to a place for three reasons: their personal characteristics and behaviors; the availability of facilities, opportunities, and resources; and a sense of belonging. Certain smells, artifacts, and sounds within environments evoke memories and feelings." (Kopec, 2006, p.62).

Place Attachment: "The formation of an emotional bond with one's immediate environment." (Manzo, & Perkins, 2006).

Proxemics: The relationship between people and their individual perception of space (Hall, 1969). This is manifested in Edward T. Hall's Interpersonal Distance Zones (Adapted from Kopec, 2006, pp.67):

- **Intimate 0-18" :** Kept by two or more people who share a strong bond
- **Personal 18"-4':** Used by casual friends or people with close social contracts
- **Social 4'-12':** Maintained by people who know of one another but do not really know one another and who come together for a common purpose
- **Public 12'-25:** Used by people whose only association is being in the same place at the same time.

Principals of Design

- Balance: Symmetry/ Asymmetry
- Rhythm: repetition, progression,
- Unity: harmony, continuity
- Emphasis: focus, dominance, hierarchy
- Proportion: scale, relation of parts to whole

(Lauer, 1979)

Privacy: Defined in terms of physical, visual, acoustical, and olfactory privacy, which can be infringed upon through invasion, violation, or contamination (Kopec, 2006. P.74).

PRSM (Personal Resource Systems Management): Method used to link and evaluate the influence of environmental factors to the physical, emotional, and mental well-being of an individual (McFall, 1998).

Social Learning Theory: From Albert Bandura; human behavior is defined by continuous and reciprocal interactions between behavior and external influences (Bandura, 1971). Humans have an inherent ability to learn through observation, inducing and acquiring knowledge through patterns of behavior. Whether deliberately or inadvertently, sensory conditions allow humans to exercise foresight and translate symbolism into motivators for insightful behavior.

Sociofugal: Describes a space that separates individuals (Hall, 1969).

Sociopetal: Describes a space that brings individuals together (Hall, 1969).

Space: Physical walls and boundaries that comprise a distinguishable and enclosed environment (Hall, 1969).

Space Syntax: A theory describing the relationship between the built environment and its relationship with human behavioral patterns. Space Syntax is comprised of a theory and methods used to analyze special configurations in relation to human interactions. This method provides designers with a tool to simulate and predict the potential outcomes, or resulting interactions that may occur in their space (Hillier & Hanson, 1989).

Territoriality: An individual's possession and defense of surrounding physical space; including exclusiveness of use, marking, personalization, and identity. Territories provide access to social contracts through organizers, or mutually accepted ground rules by which behavior typically abides. Competition for resources strains social contracts and territory infringement arises when individuals struggle to maintain control over territory (Hall, 1969; Kopec, 2006).

Summary

This study explored the elements of the built environment in coffee-houses in Greensboro, NC, within a one mile radius of the campus of the University of North Carolina Greensboro (see: figure 5). The primary question addressed was: what role do interior environments play in the patterns of human interaction? In chapter II, I present an in depth review of literature as related to this study.

CHAPTER II

REVIEW OF THE LITERATURE

Coffee Culture

> …the sanctuary of health, the nursery of temperance, the delight of frugality, the academy of civility and the free school of ingenuity.
> London's *Café Magazine (*Wurgaft, 2003)

Coffee-houses have provided inexpensive, inclusive settings for individuals to engage in social discourse since the 17th Century (Wurgaft, 2003). Western Coffee culture was birthed in the age of the Irish- English Public House, a place where people could eat and drink alcoholic beverages and which was used as a communal center for mingling and gossip. Once this freedom of expression was limited by government regulation as part of a campaign to silence dissent, pub-goers found new places of free fellowship in coffee houses. Today, coffee-houses continue to function as gathering places to offer individuals a sense of belonging and the satisfaction of physical place (Klinger-Vartabedian & Vartabedian, 1992).

Although the roots of European coffee-houses developed out of the sphere of the public house (or pub), coffee has been enjoyed as a social beverage since the 16th Century (Biderman). Written accounts of coffee-houses date back to this time, detailing physical and social experiences in coffee-houses and their patrons. Like paintings, these accounts can be used as tools to identify impactful elements of space through the "highly

pattered reminder systems released in memories" (Hall, 1969, pp.94). Through these memories, one can gather that coffee is a means by which individuals connect in environments built for interaction. One of the earliest accounts of the beverage preceding the European coffee-house explosion is documented in the writing of Venetian physician, Prosper Alpinus, in 1580:

> I have seen at Cairo a tree in the garden of a Turk named Aly Bey, and I have been given the figure of one of its boughs. Tis the same which produces the fruit so common in Egypt which they call 'bon' or 'ban'. There is made with it, among the Arabs and Egyptians, a kind of decoction very much in use and which they drink instead of wine. This drink is called 'qahwa' and the fruit comes from Arabia Felix...

Because of the Islamic law forbidding the consumption of alcohol, coffee was considered "the wine of Islam" (Biderman), providing the same opportunity for community and brotherhood. This early account was supported by an account from a European traveler, who wrote

> ...we rested in a coffee house situated near a village. 'Mokeya' is the name give by Arabs to such places which stand in the open country and are intended, like our inns, for the accommodation of travellers. They are mere huts and are scarcely furnished with a 'serir' or long seat of straw ropes; nor do they afford any refreshment but 'kischer,' a hot infusion of coffee beans. This drink is served out of coarse earthen cups; but persons of distinction always carry porcelain cups in their baggage. The master of the coffee house lives commonly in some neighbouring village whence he comes every day to wait for passengers...

In his account, the patron expresses a feeling of community with extended neighbors through his short visit, describing warm reception and tidings that extended beyond the physical village boundaries.

This concept of neighborhood is one that directly relates to the coffee-culture of 1950s America (Klinger-Vartabedian & Vartabedian, 1992). The coffee-house movement, as it were known, resulted in the development of places to offer every man and woman a comfortable place to exchange conversation and achieve a sense of belonging. Touring city coffee-houses in the 1960s, a city commissioner remarked that he thought about these coffee shops, "as everybody's living room." (Klinger-Vartabedian & Vartabedian, 1992, p.212).

Since the 1990s, coffee-houses have in America have multiplied in numbers to provide proverbial watering holes for diverse groups of individuals in communities (Wurgaft, 2003). These venues are celebrated components of the local community; locally owned, run, and supported. Coffee-houses remain grounds for regular, but largely informal social transactions- local gossip and neighborhood gatherings- providing a familiar social outlet for locals. The introduction of corporate coffee-culture has challenged this social connection typical of traditional coffee-setting; a difference that has not been well accepted among classical coffee-house patrons. Starbucks experienced severe backlash from such populations as it expanded Seattle's iconic coffee-culture to every corner, grocery store, and big box store in America and abroad (Gaudio, 2003). Local and commercial coffee-houses offer a stark contrast social culture, despite sharing

a common history. Changes to this genre of coffee-house have developed in response to our fast-paced society, deviating from the original coffee-culture (Wurgaft, 2003).

Space for Place

> We shape our buildings and they shape us.
> *Winston Churchill (Hall, 1969)*

The nature of coffee-houses as places on belonging rings true for coffee connoisseurs today. The mind and body are inherently linked in the interpretation of physical experience (Waxman, 2009). Experience is created through interaction of person and place; a relationship that can be used to promote people-place connection in coffee-houses. To approach this relationship, it may be understood that a person's relationship to his or her environment is a product of sensory feedback manufactured by an experience (Hall, 1969). Space and place play different, but relative roles as complimentary components of environmental design. Space can be physically defined or merely implied, but refers to bounded environments that humans occupy, which are strategically created to respond to an intended function (Rengal, 2007). Space establishes a relationship between function and meaning in buildings, though the ordering of relations between people (Hillier, 1984). For the purpose of this study, coffee-houses represent physical space. Place describes the purpose and character of these coffee-houses, through its identifiable nature as a space for gathering, relaxing, and informal learning. Person-environment transactions and social interactions occurring in coffee-houses result in place attachment, which is facilitated as a user's senses are engaged (Mau, 2010).

Because environments are the source of sensory information, spaces can be programmed to stimulate a user, thereby influencing behavior (Kopec, 2006). Architectural dynamism is a method used to activate behavior in response to specific environmental cues. Fixed components of a space can serve to control behavior to generate a desired response.

Architectural dynamism typically translates into the physical shape and composition of a space, which causes individuals to feel in various ways. For example, the United States Holocaust Memorial Museum elicits feelings of discomfort and anxiety through narrowing corridors, intended to connect visitors to the exhibition's message. In coffeehouse settings, this can be used as a tool to direct patrons through a space, causing a patron to feel leisurely or rushed. Architectural features can also communicate boundaries to define paths of circulation, providing direction and decreasing anxiety for a patron moving through the space (Rengel, 2007). Further, semi-fixed and fixed features of a space can limit an individual's ability feeling of territoriality or ownership (Hall, 1969).

An environment can also include sensory stimulants to serve as visual and tactile cues to power memory and retain knowledge in relation to place. Coffee-houses maintain a powerful bank of sensory cues- aroma, warmth, and acoustics. Environmental properties have the capability of directly translating into environment through these sensory elements of space. Sensory stimuli in coffee-houses enable visitors to "see temperature" and "taste smell," rooting them in a memorable experience and creating a lasting impression (Mau, 2010). The presence of sensory stimulants in coffee-house design facilitates comfort and spatial connection- place attachment (Rengel, 2007).

In keeping with the classic interpretation of place attachment, coffee-houses have the capability to offer intimate and stimulating atmospheres to allow visitors the invitation of place. A sense of belonging is forged through in the interplay of knowledge, emotions, beliefs, and behaviors relating a user to particular moment (Waxman, 2006). A patron's level of comfort and feeling of belonging result from this bond with his or her environment. Ray Oldenburg revisited these connections characteristic of place identity with the establishment of his concept of "third place" (Waxman, 2009). Directly relating to coffee-house environments, third place describes a public space used for regular, voluntary, and informal gathering, where individuals can relate to one another through the exchange of knowledge and ideas. Intrinsic of coffee-house settings, third place environments promote community and equality, often attracting a "regular" clientele (Nussbaumer, 2009; Waxman, 2009). They are accessible the majority of the day and offer visitors a feeling of home-away-from-home. Resulting from accessibility and proximity to UNCG, coffee-houses on and around campus provide academics with third place, informal learning environments in which to conduct academic dialogue and discourse.

Activism and the Counterculture Movement

The concept of third place was prevalent in coffee-houses of the 1950s. These hubs of social interaction operated as universal living rooms, providing a sense of place for many of society's outcasts (Klinger-Vartabedian & Vartabedian, 1992). A movement away from conventional and conservative life styles resulted from a shift in generational values. A disenfranchised culture of beatniks, artists, and intellectuals developed around

these institutions, fulfilling a desire for conversation and belonging with like-minded individuals (Klinger-Vartabedian & Vartabedian, 1992). Coffee-houses offered and continue to offer visitors the psychological satisfaction of place despite changes in cultural markers and identities. Coffee-houses from the beat era are comparable to historic French salons; ground for seeds of social transformation through the exchange of revolutionary ideas. Coffee-house environments offer a comfortable setting that facilitates dialogue, conjuring cause-awareness and the spark for social transformation. The reformist culture birthed in the 1950s coffee-house was carried into the mainstream, as the 1960s unveiled a societal shift in individual activism.

Informative and Engaging Space

Activism in an environment is not exclusively related to social transactions occurring in the space. Research in the field of cognitive science indicates that the human brain maintains an underlying "hidden learning agenda," suggesting that what individuals prompts individuals to feel motivated or engaged in a space often differs from the intent of the design. This difference can affect the degree to which they engage in interactions (Connell, 2010). Designing engaging spaces requires an intimate understanding of human cognitive tendencies. An engaging space should offer a user clear and immediate goals, suggest actions, and present feedback. The goal in achieving an engaging environment is to generate *intrinsic motivation*, which is the product of an individual's interaction with the space. In coffee-house settings around campus, this is key concept to facilitate and promote learning tendencies relative to activities already

occurring in the space. Doing so will result in more productive and enjoyable experiences of visitors. These cognitive needs are interconnected components of engagement and can be understood by examining the following relationships:

Engagement = Goal(s) + Actions + Immediate Feedback

This equation accounts for a person's well-being in terms of person-environment transactions. This concept is situated in the foundational interactional theory, which maintains that individuals and environments- coffee-houses, in the case of this study- are separate entities that continuously interact (Kopec, 2006). From these interactions, the space satisfies a person's cognitive needs by providing goals, actions, and immediate feedback to yield a heightened state of awareness, or "*Flow*" (Csikszentmihalyi, 1990). This concept offers a method of achieving the level of engagement known as "optimal experience." Comprised of three elements, Flow is essentially a platform for well-being and takes pleasure, engagement, and meaning into consideration. The theory maintains that, by matching skills and challenge at a routine level, users are engaged in such a capacity that they become completely engrossed in an activity while losing sense of time (Buchanan, 1991; Csikszentmihalyi, 2011).

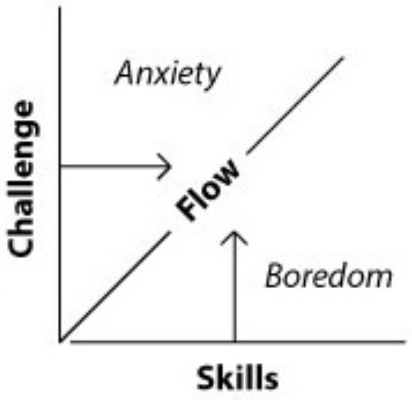

Figure 1. "Flow" (Csikszentmihalyi, 1990). As modified by A.Will.

If a person's skills exceed challenge in a space, boredom will result; if challenge exceeds skills, he or she will experience anxiety (Csikszentmihalyi, 1990). For the purpose of this study, pleasure and engagement are identifiable in coffeehouse environments and are relative to activities being conducted by coffee-house users. Coffee-houses that successfully and pleasurably engage an individual can exercise meaningful design as a tool to activate interactions among individuals and with the space. When an individual is engaged with his or her work or with another individual, he or she demonstrates that they have achieved flow. Meaning, or connection to a larger cause or idea, is facilitated by a coffee-house's sense of place and community connection.

Albert Mahrabian and James Russell reproached Flow theory through the development of Approach/ Avoidance Framework; a model linking emotional load to levels of arousal. Expanding upon concepts of flow, environments are recognized as having the ability to promote interest and arousal in subjects. The arousal activators in a

coffee-house settings are manifested in such elements as circulation within the space and proximity to other patrons.

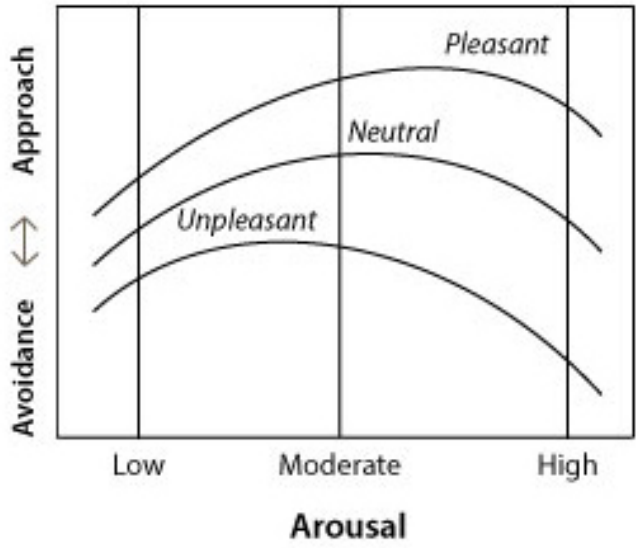

Figure 2. Approach/ Avoidance Framework (Rengel, 2007). As modified by A.Will.

The concepts expressed in Flow theory and the Approach/Avoidance Framework challenge designers to approach spatial considerations in a way that produces meaningful, human-centered experiences, suggesting that all elements in the environment be considered in terms of how they contribute to, or detract from, this intended experience (Buchanan, 1991).

Similarly, critical theory maintains that human knowledge is generated according to three cognitive interests: work, interaction, and self-reflection (MacIsaac, 1996). Work knowledge applies to the ways in which an individual can manipulate his or her surroundings. Interaction, or practical knowledge, is built around social norms which

predict behavior between individuals. Emancipatory knowledge- or power- is relative to self-knowledge and is gained through transformed perspective. Applying concepts of critical theory to a space, coffee-house interactions can be distilled to determine how knowledge is discovered and evaluated.

Interpreting Space

To understand an individual's place attachment and degree of flow experienced in coffee-house environments, a spatial language can be applied to facilitate interpretation and evaluation of the space. This language is applied through observation, as thematic developments are revealed in a phenomenological study. In the case of a thematic development, certain elements of space must be considered as critical components linking patron behavior and social interaction to the environmental elements. In general terms, interior environments can be analyzed in terms of domains, centers, and pathways (Rengel, 2007). These elements encompass numerous components of coffee-houses, specifically relating to the activities occurring within the environment. Domains are grounds for places and paths to exist. For the purpose of this study, coffee-houses represent domains of informal learning around campus area. The nature of the domain caters to specific functions- coffee consumption, eating, socialization, studying- which are understood and expected to serve patrons in these ways. In the case of each coffee-house, or domain, the environment can be distilled to include arrival space, centers, paths, nodes, and edges (Rengel, 2007).

Arrival spaces include the coffee-house entryway and counter, as these are points of acknowledgement between patron and staff, and between individual patrons. The nature of arrival spaces presents a patron with a transition point, requiring the patron to determine his or her method of navigating through the space and placing an order. These arrival points also provide an opportunity for the user to evaluate the environment and manage feelings of anxiety resulting from a heightened sense of awareness (Rengel, 2007). In terms of flow theory, arrival points are key in establishing a balance between stress and skills required of the experience.

Coffee-houses present patrons with three specific destinations, or centers: the ordering/ pick-up counter, condiment station, and selected table or seat. These components are anticipated points of significant activity, and serve as both goals and departure-points along an individual's journey through the coffee-house environment (Rengel, 2007). Centers are also conducive of social interaction and are therefore important links between physical space and person to person transactions.

Circulation, or the way you navigate a space, is defined by "channels of movement", or paths (Rengel, 2007). Paths not only connect spaces in coffee-houses, but the offer patrons an opportunity to survey the space and synthesize a visual impression of the space. In coffeehouses, navigation is established using primary and secondary paths, although often ambiguous in nature. Patron perception of a path may be influenced by its scale, shape, rhythms, and or changes in materiality. Because coffee-house service

requires compliance with stepped goals, paths may be used to communicate the process with patrons.

Nodes are situated along coffee-house circulation systems, providing points of engagement along a path. Unlike centers, nodes are established points of convergence in a space. As a patron departs from the beverage or condiment counter, he or she will encounter a juncture, or node, between the counter and seating groups within the space. Nodes, such as this, require a patron to determine his or her continued route through the space. Here again, a patron's anxiety level may be increased as the path breaks at a point of patron input. Due to the involved nature of nodes, these points of interaction facilitate social transactions and impactful experience in the space.

Edges establish boundaries, connecting and defining spatial components in coffee-houses. While walls and fixed features are examples of boundaries in a space, they are often present in the form of implied visual separation. Paths may lead a patron to the counter in a coffee-house, but a change in floor materiality may indicate that the patron has reached the edge of that center. Edges also define areas with raised or lowered floors, or higher or lower ceilings.

The Social Influence of Space

Boundaries serve the dual purpose of defining space and translating feelings of place and belonging into a physical manifestation. Humans are naturally inclined to relate feelings of security to territory within the space. An individual's possession and defense

of surrounding physical space is a result of biologically programmed territoriality (Hall, 1969; Kopec, 2006). Although coffee-houses are public places, territory helps an individual gain- and maintain- control over the space, reducing fear that interpersonal space may be invaded (Costa, 2011; Kopec, 2006). Establishing territory includes exclusiveness of use, physical marking, and personalization (Kopec, 2006). Territories provide access to social contracts through organizers, or mutually accepted ground rules by which behavior typically abides. Relating to our innate animalistic habits, competition for resources strains social contracts and territory infringement arises when individuals struggle to maintain control over territory (Hall, 1969; Kopec, 2006). This theory establishes the fundamental correlation between social interaction and physical environment, with environmental design primarily concerned with balancing this relationship (Hillier, 1984). In study conducted by Dr. Lisa Waxman (Florida State University), coffee-house patrons reported feeling a sense of ownership as regular coffee-house patrons, maintaining opinions on how the shop should be operated and superiority to competing coffee-houses. 90% of participants in the study expressed a feeling of ownership over specific seats or areas of the coffee-house.

Coffee-house environments can both promote and prevent territoriality, through the inclusion sociofugal and sociopetal spaces (Hall, 1969). Sociofugal space is designed to separate individuals, and includes small tables, booths, and private rooms in coffee-houses. Sociopetal space brings individuals together, and includes upholstered seating groups, large tables, and bar seating. Because of the varying activities occurring in, and supported by coffee-houses, it is important to offer a balance of sociopetal and sociofugal

spaces. Incorporated into the design of a space, territory provides a means of associating an individual with a particular group, predicting behavior and patterns of interaction (Costa, 2011).

Evaluating Experience

Due to the nature of human-centered design, new methods of investigation and evaluation have emerged. These techniques are used to validate qualitative studies, which are better related to social design than the scientific techniques (Swann, 2002). To evaluate the effectiveness Flow Theory in a space, Knowledge Design Matrix (KDM) was developed by pioneers in the field of Children's Museum research (Boren, Connell, & Stefl, 2010). Specifically, this method of evaluation gauges the effectiveness of cognitive and affective processes necessary to learn, in comparison with a user's ability to activate, internalize, and reorganize information in an environment (Boren, Connell, & Stefl, 2010). Cognitive mapping communicates environmental factors to patrons in the space. This process, by which information is acquired, interpreted, and applied to comprehension of everyday environments (Lang, Burnette, Moleski, & Vachon, 1974).

Personal Resource Systems Management (PRSM) Theory

Personal Resource Systems Management (PRSM) Theory is a method of evaluation used to link the influence of environmental factors to the physical, emotional, and mental well-being of an individual (McFall). This relationship can be understood through resulting interactions occurring in the space. Personal systems are formed by

Person-Environment transactions, with transactions categorized in terms of intellectual, organizational, social, material, natural, and financial well-being.

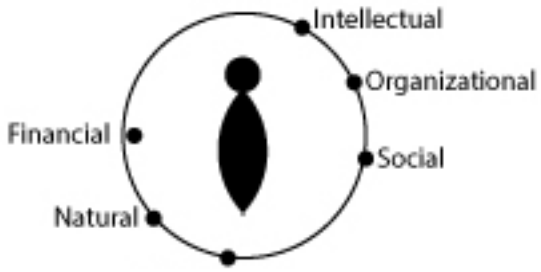

Figure 3. PRSM Relationships, adapted from (McFall 1998). As modified by A.Will.

Personal Resource Systems Management (PRSM) Theory was developed by Barbara McFall in response to her work in Family Resource Management at Virginia Tech University. PRSM is situated at the crossroads of theory and application, placing it in the context of interactive practice (McFall, 1998). PRSM is aligned with Susan W. Wilson and Eleanore Vaines' framework described in "A Theoretic Framework for the Examination of Practice in Home Economics," in which they describe interactive practice resulting from a collaborative exchange between a practitioner and fully engaged partner(s). This theory recognizes that communication is dialogic and results in patterns that are co-created by engaged participants (McFall, 1998). Operating within an interactive practice framework, PRSM takes several theories into account, including Systems theory, Ecological theory, and Critical theory, collectively serving to "establish an interactive format for improving the quality of human life, through the study of person-environment transactions" (McFall, 1998, pp.44). In PRSM, an engaged, dialogic relationship is forged between the user and environment, as the user formulates

constructions within self, while behaving as initiator and recipient of environmental transactions (McFall, 1998).

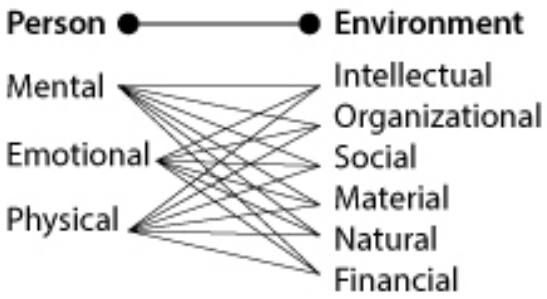

Figure 4. PRSM Theory, adapted from (McFall, 2003). As modified by A.Will.

Because PRSM theory utilizes surveying to quantify an individual's well-being, it is not a viable for my unobtrusive observational study. PRSM theory requires an understanding of an individual's emotional and mental well-being, which cannot be definitively understood in the context of an observational study.

Space Syntax

Another method of examining environmental influence on social transactions is Space Syntax, developed by Bill Hillier in the mid-1980s. This method of evaluation examines the relationship between the built environment and its relationship with human behavioral patterns. Space Syntax is comprised of a theory and methods used to analyze special configurations in relation to human interactions. This method provides designers with a tool to simulate and predict the potential outcomes, or resulting interactions that may occur in their space (Hillier & Hanson, 1989). This technique would be beneficial as

a means of quantifying qualitative data, but cannot fully explain the qualitative data fundamental to this investigation. Due to a lack of time and resources, this is not an evaluation technique that I can employ in this study. This method would be well suited as a means of strengthening observational data, given further time and funding.

Informal and Incidental Learning in Design

The act of cognition involves mental processing of intelligent information, or learning (Learning is most often associated with classrooms and other formal learning environments. Formal learning is "typically institutionally sponsored, classroom-based, and highly structured." (Marsick and Watkins 2001, p.25). However, learning occurs in a variety of capacities and often without notice. If an individual has the capacity to learn "as part of everyday experiences and participation, then [learning] has the potential to occur in many different ways." (Le Clus and Volet, 2008, p. 2). This type of unconscious learning characterizes informal learning; an intentional, but unstructured method of obtaining knowledge (Marsick and Watkins, 2001, p.25). Informal learning occurs when an individual willingly engages in self-directed educational activity outside a formal learning environment. The coffee-houses included in this study may be categorized as informal learning environments because of the academic engagement occurring in each setting. This may be attributed to their proximity to UNCG campus. Specifically, academic users have the capability to engage in educational activity, over which they maintain control (Marsick and Watkins, 1990). This can be further defined to include incidental learning- or, unconscious learning resulting from task-based activities (Marsick

and Watkins, 2001). For the purpose of this study, incidental learning will be defined as the engagement with accidental or unplanned educational experiences.

Informal learning environments facilitate self directed-learning, allowing a learner to extract knowledge from his or her experience. When an individual has freedom of choice to direct his or her own learning experience, the information becomes more relevant and meaningful (Mau, 2010), allowing individuals control over their needs, motivation and opportunities to learn (Marsick and Watkins, 2001). Such engaged learning facilitates interaction through active learning (Mau, 2010). Active learning requires reflection, interpretation, and connection to the information, as a user to acts upon his or her thoughts, feelings, and impressions. The impact of this type of educational experience provides coffee-houses with an opportunity to craft dynamic, engaging spaces to facilitate informal learning.

Social Learning

Informal learning environments, such as coffeehouses, are constructivist settings based upon the notion that a learner has the capability to actively craft his or her learning experience (Lorsbach & Tobin, 1997). In these settings, a user's experience varies according to his or her previous experiences. Experience is created as a person engages his or her senses to understand the world (Mau, 2001). Cognitive constructivism maintains that and individual constructs knowledge as they process and assimilate experiences (Powell & Kalina, 2009). This concept originated in Piaget's theory of childhood development, but can be applied to adult educational techniques as well. Applying more contemporary theories of social constructivism, collaboration and social

interactions occur alongside personal critical thought and interpretation (Sawyer, 2003). Father of Social Constructivism, Lev Vygotsky maintained that learning is more impactful when it occurs with social interactions (Kozulin, Gindis, Ageyev, & Miller, 2003). Those engaged in the learning experience are presented with choices and have the ability to accept reason and acquire new information. In keeping with this concept, Albert Bandura's theory of social learning demonstrates the inherent relationship between coffee-houses and informal education. Coffee-house patrons have an inherent ability to learn through observation, inducing and acquiring knowledge through patterns of other patrons' behavior. Whether deliberately or inadvertently, sensory conditions allow individuals to observe and transpose the information from fellow patrons.

Pattern Language

Patterns of interaction can be interpreted and organized into patterns of behavior. To approach an environmental comparison applying these patterns, it may be recognized that behavioral interaction, or engagement, is a response occurring in the form of patterns. In layman's terms, a pattern is an established solution to a reoccurring design problem (Borchers, 2001, p.360). According to Mathematician Nikos A. Salinaros, people

> observe the world around [them] and learn its structure by abstracting cause and effect, ad by documenting reoccurring solutions obtained under different conditions. Such empirical rules, representing regularities of behavior, are called 'patterns'. (2000, p.1-2)

Groupings of patterns are established as linkages occur, resulting in a language of connective information that helps to validate and apply each individual pattern (Salingaros, 2000, p.2). Patterns can be used to connect humans to the designed environment, visually, emotionally, functionally, or by facilitating interactions and activities.

This concept, termed a *pattern language,* was established by Christopher Alexander in the 1970s. Each pattern can be plugged into a hierarchical system of patterns, each building upon the next to generate a solution to a greater design problem. A grouping of patterns provides a foundation from which a design may be built, serving to "encapsulate human experience" (Salingaros, 2000, p.18) and simplify the complexities of the world around us (Salingaros, 2000, p.4, 18). The founding architect developed this system as a tool to make more pleasing and usable human environments. Although this system was oriented to aid in design and architecture, it was created as a tool for the common man or woman to transcend the design language barrier and communicate with professionals (Borchers 2001, p.361). Alexandrian Pattern Language was not developed to be a method of design, but rather a framework in which a design should be developed. In the present age of architecture and design, there has been a shift in environments built for comfort to those built for expression; human emotional and physical well-being are largely absent in our designs (Salingaros, 2000).

CHAPTER III

METHODOLOGY

Purpose of the Study

The main objective of this study is to understand how human interactions are influenced by and related to interior spaces. The patterns of interaction outlined herein provide a foundation for further understanding the ways in which informal learning environments support user engagement. To develop this understanding, I studied the environments and patrons of five coffee-houses situated within a one mile radius of the Gatewood Studio Arts Building at The University of North Carolina at Greensboro (see figure 5). For the purpose of this study, I critically analyzed these coffee-houses as informal learning environments with the understanding that I am observing the behavior of a controlled population. The primary question addressed in this thesis asks, what role do interior environments play in the patterns of human interaction in coffee-houses?

Brief Overview of the Study Design

I addressed the issues raised by the questions above by conducting this investigation in coffee shops in Greensboro, NC. I used a combination of qualitative and quantitative methods, such as visual and content analysis, unobtrusive participant observation, and behavioral mapping . The research was conducted using a constructivist/interpretivist approach.

Theoretical Foundation of the Method

Constructivist Epistemology

My study is undertaken in the context of a constructivist epistemology. Epistemology is a "theory of knowledge" (Moss, 2002, p. 2), which describes beliefs about the creation and dissemination of knowledge and relative ways of approaching research (Steup, 2010). A constructivist epistemology serves to explain the means by which knowledge is obtained, affirming that individuals strive to understand the world around them (Creswell, 2009). The act of learning is established as an individual situates knowledge into his or her personal experience, gaining access to knowledge using his or her senses to understand the world (Lorsbach & Tobin, 1997). My intent in conducting this investigation was to gain an understanding of the ways in which coffee-house patrons interpret environmental elements and triggers to generate personal experiences. Situated in a constructivist context, my study focused on the patron critically thinking about his or her experience, rather than the experience itself.

Challenges in Constructivism

Constructivism is based upon the concept that a user's experience is influenced by prior experience, which informs his or her knowledge and behavior (Hein, 1998). In the context of this unobtrusive behavioral study, it is impossible to know how a patron's past experience impact present behavior in the space. While post-observation participant interviews could be conducted to gain a better understanding of the user's past experiences, they would not provide a comprehensive understanding of how experience

influences behavior. Based upon this limitation, it was assumed that coffee-house environments contain similar features to evoked comparable behaviors in each of the five coffee-houses in this study.

Conceptual Framework

To critically analyze patterns of interaction in the context of coffee-house culture, I approached the subject through the application of an inductive, mixed method framework. An inductive framework asserts that I began my study with specific observations, continuing to move toward general conclusions based upon gathered evidence (Miles & Huberman, 1994) establishing their validity through systematic methods of data collection. An interpretivist/ constructivist framework was used to understand the world of human experience through the employment of qualitative methods of data collection to examine, analyze, and deduct themes present in behavioral transactions (Mackenzie & Knipe, 2006; Miles & Huberman, 1994).

The nature of naturalistic data collection caused me to begin the evaluation of my data while I was conducting my investigational study. My gradual and deepening understanding of this investigation lead to the continual emergence of new connections and questions (Miles & Huberman, 1994). Periodically, I revisited data to apply emergent concepts and ideas. Due to the social-scientific character of this study, my research had the capacity to be strengthened by complimentary quantitative methods of data collection.

Personal Resource Systems Management (PRSM) Theory

A theory can be neither right nor wrong, as it is a tool used to understand how and why things work based upon the development of assumptions resulting from empirical observations (McFall, 1998). By nature, a theory helps to organize and analyze observations in order to make predictions and give understanding to the subject. From these observations, theories allow a researcher to conceptualize new developments from this research.

I began by approaching the subject through the application of Personal Resource Systems Management (PRSM) Theory PRSM is a theoretical framework used to measure person-environment interactions and offers a balanced view of quality of experience. Working within this system, I was able to develop a series of matrices to explore the relationship between environment and user engagement through the resulting psycho-social interactions.

Space Syntax

PRSM theory requires knowledge of an individual's mental and emotional well-being; something that is unavailable to a researcher without directly engaging an individual in a study. To supplement the data gathered in the PRSM framework, I applied the theoretical concepts of space syntax. I organized the findings from my observational study in relation to architectural elements and features of the space. Space Syntax provides a means of generating physical representation of social interactions in coffee-house environments (Hiller, 1989). The resulting findings serve to quantify social

interactions in each space, helping to predict ways in which to program similar interactions into environmental features. Application of key concepts demonstrate whether Space Syntax modeling software is relevant as a method for testing of the patterns I established in this thesis.

Methodology

Methodology is as "a theory and analysis of how research should proceed", considering the ways in which research may be approached (Moss, 2002, pp. 2). To gather necessary information in the context of a mixed-method epistemology, my process will follow a naturalistic methodology. My methodology outlined the way in which I conducted my investigation, through the application of multiple methods of data collection and open-ended observations with the indirect participation of the users in each space (Creswall, 2003). The data resulting from qualitative studies was emergent, as patterns of understanding were refined through my findings. My methodology was interpretive, allowing me to analyze findings for themes and enabling me to generate categories within the information.

Random population sampling allowed me to conduct a detailed study using relatively small number of participants to gain knowledge applicable to a larger population (Patton, 2002). Because this study is naturalistic in nature, it was approached without limitations of predetermined outcomes (Patton, 2002). For this reason, the resulting data is reflexive; my observations and analysis are oriented from my informed perspective and experience, as a graduate student in Interior Architecture.

Methods

A method is a technique employed to gather evidence (Moss, 2002). The methods employed in this study were visual and content analysis, unstructured observation, and person centered behavioral mapping. These methods were appropriate for the types of information required of my study, because they provided both qualitative and quantitative data. Collectively, these methods provided a cohesive set of data without requiring me to directly interact with subjects, which would influence natural behavior in each space. Applying my observational study within each coffee-house, I was able to understand the frequency and types of person-to-person interactions, in the context of person-environment relationship. The resulting data directly related human interactions to the architectural features of the environment.

Establishing Area of Study

I began by establishing the area in which I conducted my study. Using a map of the University of North Carolina at Greensboro campus area, I selected the Gatewood Studio Arts Building, 527 Highland Avenue, as my point of reference and generated a circle with a one mile radius from that point. From within the resulting 3.16 square miles, I identified five coffee-houses on which to focus my study. Because of their proximity to the University of North Carolina at Greensboro (UNCG), these coffee-houses are host to a homogenous, self-selecting population comprised largely of academics and scholars from surrounding University campuses. The target population appears to be a balance of

male and female subjects, averaging early twenties to late fifties in age. Working within this radius served to streamline variables within the population dynamics of my study.

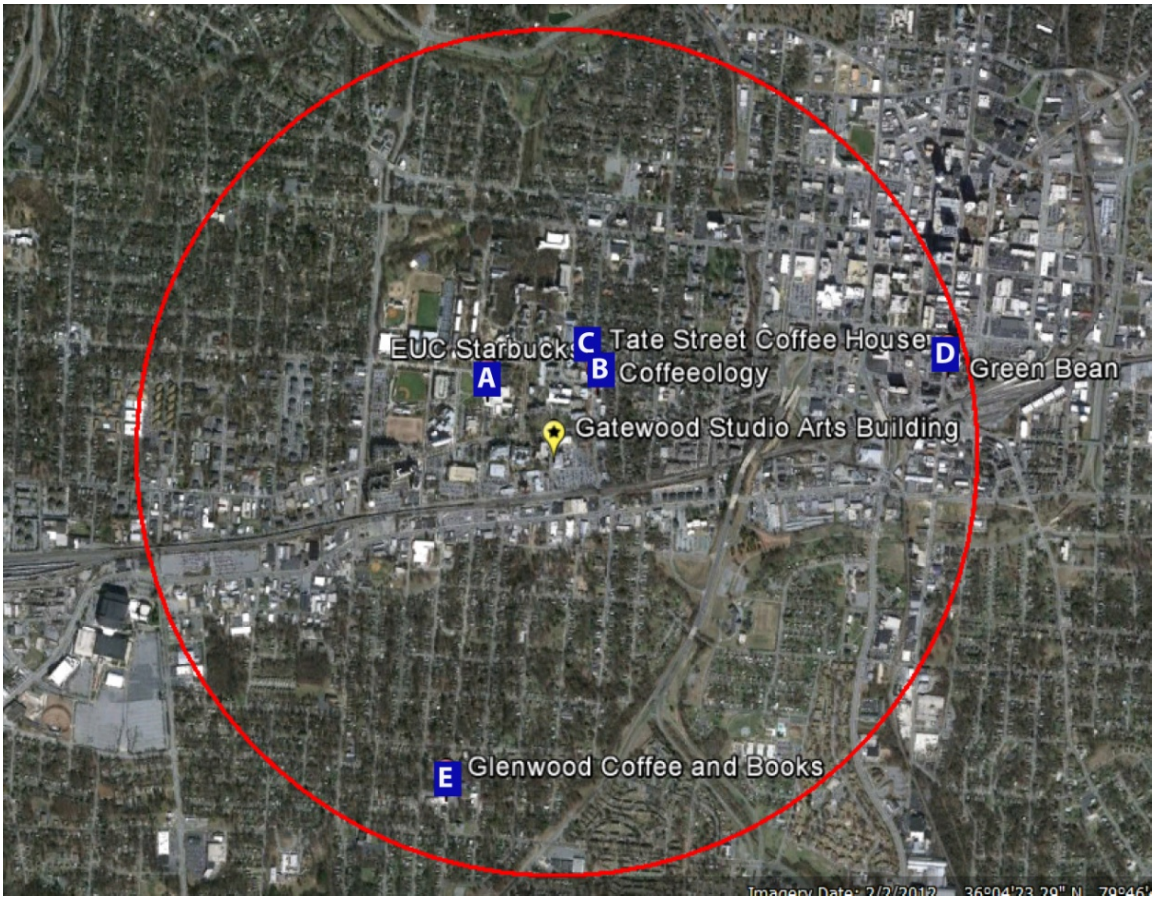

Figure 5. UNCG campus area map; five coffee-houses within one mile radius.

Coffee-House A: EUC Starbucks

Figure 6. EUC Starbucks, located inside the EUC Student Center

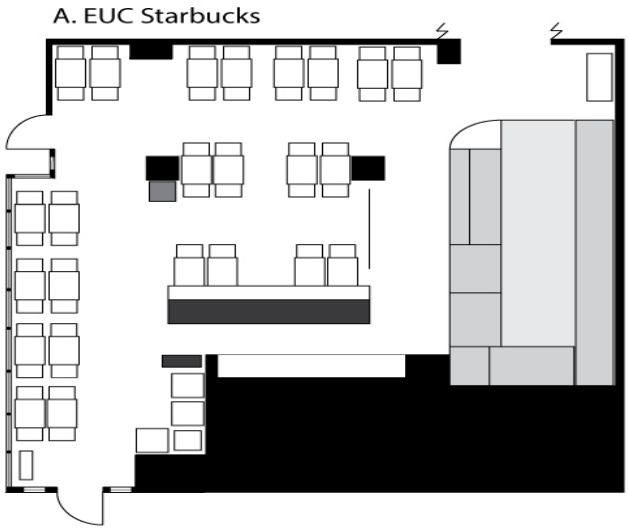

Figure 7. EUC Starbucks, attached to Barnes and Noble Bookstore

Coffee-House B: Coffeeology

Figure 8. Coffeeology, located on Tate Street.

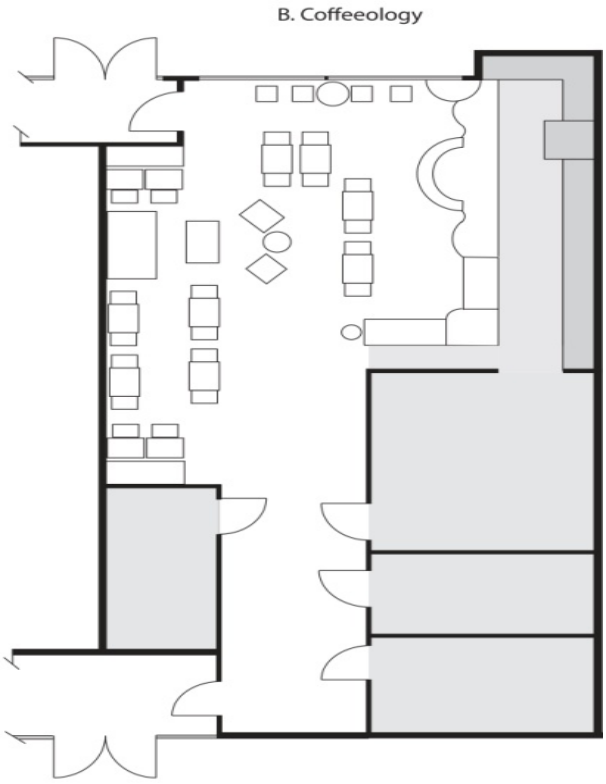

Figure 9. Coffeeology is a locally owned coffee-house.

Coffee-House C: Tate Street Coffee House

Figure 10. Tate Street Coffee is adjacent to campus, on Tate Street.

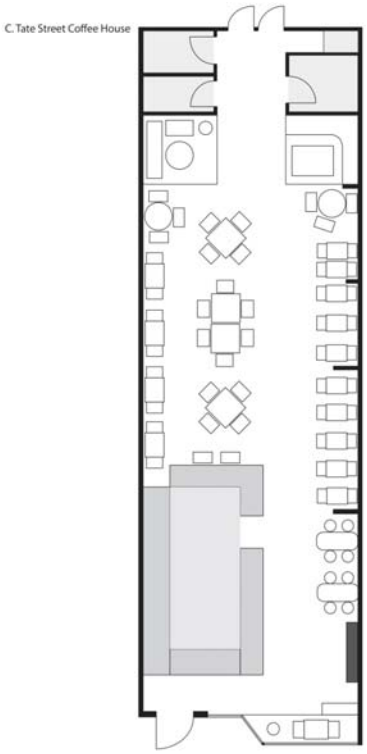

Figure 11. Located along UNCG's Southern perimeter.

Coffee-House D: The Green Bean

Figure 12. The Green Bean is in the cultural district of downtown Greensboro

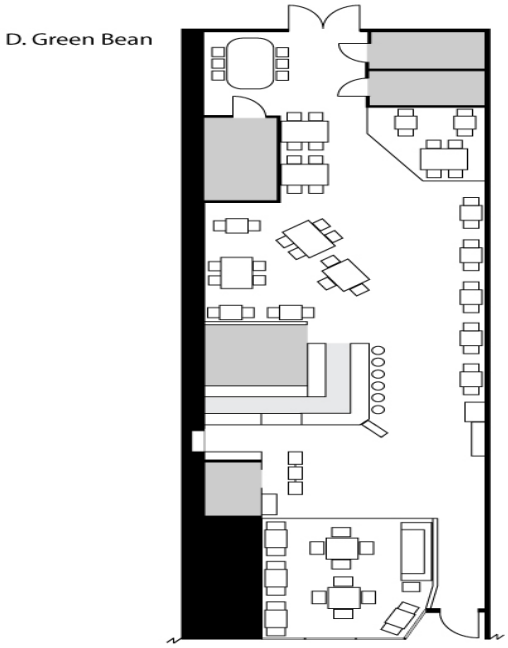

Figure 13. This coffee-house is adjacent to a tavern and gated apartment community.

Coffee-House E: Glenwood Coffee and Books

Figure 14. Situated in an affordable housing district, the Glenwood Neighborhood.

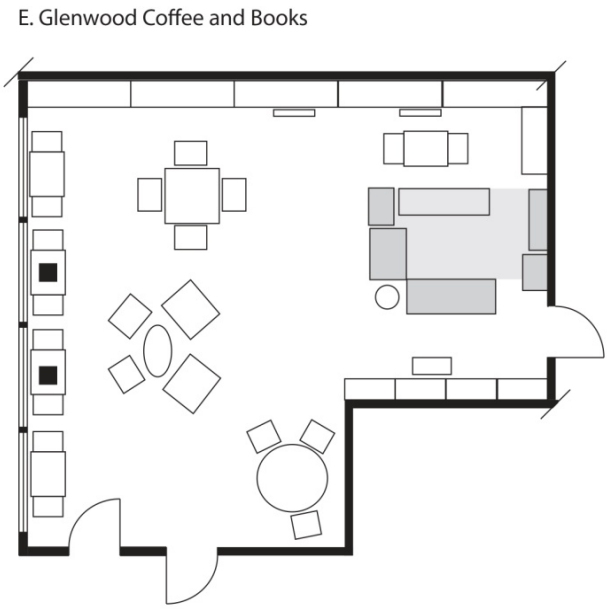

Figure 15. This coffee-house is home to "Occupy Greensboro" group meetings.

Visual and Content Analysis

To prepare for an observational study, I conducted two weeks of observation at the five coffee-houses within my area of study. Due to the nature of unstructured observation, this data was exempt from the limitations of predetermined or structured categories (Nussbaumer, 2009). Findings from my initial observations provided information used to create baseline predictions and structure my systematic observational study.

Before initiating my investigation, I met with the coffee-house owners or managers and requested permission to record photographs and notes for the duration of my twelve week study. The photographs and notes compiled in this phase of my research was part of a comprehensive visual and content analysis. Visual and content analysis is a method of data collection used document an existing space through images and observations (Nussbaumer, 2009).

Recording Data

In collecting my data, I took photographs and recorded field notes about the types of literature in the spaces. Photographs provided point-in-time spatial records, which I used as an unobtrusive means of remotely analyzing each environment. Literature, advertisements, and posters helped me to understand the types of patrons and activities typical of each coffee-house. I gathered available literature and made notes about any posting that I could not obtain a copy of. To further prepare for systematic observation, I requested access to floor plans for each coffee-house. In each case, the owner/manager

was unable to offer me access to these documents. I opted to generate schematic floor plans based upon a visual and content analysis of each space. The validity of these plans is supported by my informed understanding of spatial standards. Considering my desire to understand interaction in the space, my primary focus was to include basic environmental components, such as level changes, doors, walls, furniture, and case goods. Because these plans were created based upon my observations, they were neither technically scaled nor wholly representational of the spaces. These plans were intended to for use as tools for mapping social interactions and behavior patterns noted in my study.

In conducting visual and content analysis, I identified specific elements of each coffee-house that may contribute to thematic development. Primarily, it was evident that sensory elements would be key to consider as influential factors in my study. I recognized that these stimuli may contribute to place attachment, as well as social constructivism. To identify any reciprocal behaviors resulting from social constructivism, I identified spatial components that could help to ground the theories I chose to apply in each space. These components included arrival space, centers, paths, nodes, and edges. Because these elements represent physical features of space, I recognized opportunity for displays of territoriality with responses to sociofugal and sociopetal areas within the space. To identify whether a balance in sociofugal/ sociopetal space, I sought to identify complete engagement as an indicator of homeostasis (Hall, 1969; Csikszentmihalyi, 1990).

Challenges in Visual and Content Analysis

Visual and content analysis captures is an effective means of generating point-in-time documentation of a space. However, information from photographs and literature cannot account for patterns of behavior or frequency of interactions in the space. The quality and depth of interaction cannot be understood or measured through static images. Likewise, literature and advertisements in the space are not necessarily relevant to behavior occurring within of the coffee-houses. Although they provide indicators for the types of interests patrons identify with, these documents do not typically relate directly to specific activities occurring in the space. Suggestions can be made about a person's behavior based upon previous patterns of behavior, however visual and content analysis lacks a strong connection to qualify these observations.

Direct Observation

Direct observation allows a researcher to understand that visitors move through space to experience and obtain information (Rainbolt, G.N., Benfield, J.A, Loomis, R.J, 2012). This method of evaluation is argued to be the most comprehensive form of qualitative data collection, as it allows a researcher to observe behavioral information that is unavailable through interviews (Patton, 2002). In support of direct observation, Michael Quinn Patton's book, *Qualitative Research and Evaluation Methods,* provides Howard S Baker's statement that

> The most complete form of sociological datum, after all, is the form in which the participant observer gathers it: an observation of some social event, the events which precede and follow it, and explanations of its meaning by participants and spectators, before, during, and after its occurrence. Such a datum gives us more information about the event under study than data gathered any other sociological method. (Patton, 2002, pp.21-22)

Applying direct observation in my study allowed me to document the natural actions and interactions of my population sample within each of the five coffee houses. From this data, I was able to deconstruct observations and deduce relationships between social transactions and spatial influence.

Unstructured Observation

Behavioral patterns are derived empirically through unstructured patron observation (Salingaros, 2000), which enables a researcher to gather conclusions about the social interactions occurring in an environment. Unstructured observations reveal tangible evidence linking interaction and environment, highlighting patterns of circulation, routine, and interaction (Nussbaumer, 2009). For the purpose of this study, I interjected myself, as the researcher, into my field of study, which resulted in findings characteristic of participant observations. While this is sometimes criticized for accidental involvement with subject activity, this is the most effective method to help me understand patron behavior. Without being in the space, I am unable to conduct an observational study, and without partaking in the activities typical of coffee-houses, I risk impacting the natural behavior of the subjects in my study. For these reasons, I employed a modified system of unobtrusive participant observation. To validate findings from this

type of participant observation, I established a systematic framework and guidelines for to prevent obtrusive interaction with subjects in my study.

I began by establishing windows of time separating the influx of target populations. Because UNCG is considered to be a "commuter campus," time of day played an influential role in the quantity, behavior, and profiles of patrons visiting each coffee-house. Specifically, time of day appeared to influence patterns of behavior, as individuals' limited availability engage in fewer or shorter interactions. To account for this influence, I established investigational windows within which to organize my observations. Employing these windows helped me to categorize my data and streamline variables in my study. Observational sessions were conducted on both weekdays and weekends, according to the following windows of time:

Table 1. Observational Hours

Morning	Open-11:00AM
Afternoon	11:00AM- 4:00PM
Evening	4:00PM- Closing

I performed my investigational study over the course of 12 weeks, conducting weekly observations at each coffee-house, visiting one weekday and one weekend day, during each of the three established windows of time (business hours permitting). The duration of each observational period lasted thirty minutes.

- Weekday: Monday- Friday
    - Morning, Afternoon, Evening
- Weekend: Saturday-Sunday
    - Morning, Afternoon, Evening

The findings from these observations helped me to recognize patterns of behavior and gain a comprehensive understanding of the types of behaviors occurring in each environment. My primary goal during each period was to observe natural behavior and interactions without unintentionally influencing patron behavior. To remain unnoticed, I abided by similar behavioral standards to the patrons I studied. Variation from social norms, such as unconcealed note taking, and photography, caused individuals to feel threatened.

The systematic observation session commenced when I entered the coffee house. I began by ordering a beverage, which gave me an opportunity to survey the space for the best available vantage point. To maximize the effectiveness of each observation, I selected an inconspicuous seat in the rear of the space, at table or chair along a wall or in a corner. Initially, I used only a sketchbook and the camera on my cell phone, but discovered that individuals often took interest in my activity. To accidentally engage patrons during my investigation was to influence their behavior, so any occasion in which my activity was discovered, I noted this as a separate and particular type of interaction in my study.

Due to the nature of my study, unobtrusive participant observation allowed me to relate visitor behavior to social constructivism, as I was able to observe reciprocal patterns of behavior and responses to sensory stimuli. This occurred most frequently in mixed-use areas where individuals observe one another to identify protocol. Likewise, I was able to visually track patrons along pathways, taking note of how boundaries and centers played a role in perceived place attachment and territoriality. Patrons demonstrated feelings of belonging and ownership as they placed their belongings down assert ownership over particular tables or seats. Likewise, groups of patrons often moved semi-fixed furniture to create new seating arrangements, despite the fact that comparable group seating was available. Most notably, I used this technique to gauge the degree to which patrons experienced homeostasis during their visit. I attributed this to a patron's complete engagement with his or her individual work, and to patrons engaged in level four interactions.

Recording Data

After I was seated, I created field notes in a notebook, documenting the types of interactions, conversations, and individual activities I observed in the space. When generating field notes, I indicated the date and time along with my information from the session. I used tracing paper overlaid on a floor plan, specifically noting the interactions among people and with the space. The interactions that occurred in each coffee-house, were categorized using the following system of levels:

Levels of interaction:

Table 2. Levels of Interaction

Level 1	No interaction or brief eye contact/ smile
Level 2	Single word interaction
Level 3	Brief Conversation
Level 4	Complex interaction or lengthy conversation

In addition to person-to-person interactions, I made field notes to document person-environment interactions. These observations included manipulation of semi-fixed feature space; ways in which a user selected his or her table; the patterns of behavior attached to the ordering and seating process; and many other features (Hall, 1969). My observations included, visitor tracking, which allowed me to compile a detailed record of a patron's interactions during his or her visit (Bitgood, 2002).

Challenges in Unstructured Observation

While unstructured observation is a very effective means of obtaining qualitative data, it can be is time-consuming and labor intensive to gather sufficient findings required of a study. This method receives similar critique in the world of Visitor Studies, in which time is relative to costly evaluation (Rainbolt, Benfield, & Loomis, 2012). Because I was the only researcher conducting this observational study, the time-intensive nature of this process limited the number of coffee-houses I was able to attend per each window of observation. When possible, I made an effort to consecutively visit two or more coffee shops within a single frame of time. Visiting the various locations at similar times on the

same day provided more accurate findings, resulting in more direct comparison, demonstrating that differences in time or days could pose uncontrolled variables.

A second challenge I experienced in conducting this study, was that I had to be cautious of how my observational techniques were projected to patrons. Without care, I drew attention to my observations and patron awareness heightened resulting in a behavior shift to a less natural state. I experienced the same issue when using camera. I discovered that, with a cell phone, computer, or even a second person was present, my observational behavior went almost completely unnoticed. Although this technique provides an excellent synopsis of a population's behavior, it cannot supply the quantitative evidence found in behavioral patterns. For this reason, I employed the use of behavioral mapping in support of my direct observations.

Behavioral Mapping

Patterns of behavior can be recorded and analyzed through the use of behavioral mapping and therefore, unobtrusive behavioral mapping is a technique used to document user behavior in a space (Rainbolt, Benfield, & Loomis, p.203). The type of behavioral mapping conducted in this study was person-centered, as it focused on interactions and activities of individuals in relation to the environment (Nussbaumer, 2009). Observations gathered from behavioral mapping provide concrete data about an environment, providing a means of quantifying social interactions when correlated with unstructured observations. Behavioral mapping exposes user profiles, timing, and patterns of

circulation, thereby demonstrating user reactions to communication triggers, density, and spatial organization.

During each observational period, I used tracing paper over a floor plan of each space and recorded an "X" at each location a person was seated. This was accompanied by a number, one through four, which corresponded with one of four levels of interaction (see: table 2). Floor plans included notes about any irregular or surprising behavior exhibited by my population sampling.

Behavioral mapping is used in the field of visitor studies to evaluate the effectiveness of installations in informal learning environments. Mapping visitor behavior offers museums, zoos, and other informal learning environments a way to gather information about visitor engagement and retention (Rainbolt, Benfield, & Loomis, 2012). To understand a visitor's natural response to these environments helps to gauge the overall success of an exhibit or installation and justifies its costs and benefits.

Through the application of behavioral mapping as a method data collection for my study, I compiled patterns behavior to observe the impact of coffeehouse environments on an individual's actions and interactions. This method of data collection allowed me to investigate behavioral displays of place attachment as a result of territoriality and sociopetal/ sociofugal balance. These theories are manifested in table selection and levels of interaction, as identified on each map.

Recording Data

Using the same floor plans applied to the observational evaluation, I engaged in behavioral mapping to document the circulation and social interactions of each patron in the space. Systematic observation enabled me to observe preferential seating in each environment, including those favored by individuals and those favored by groups. These maps also documented the patterns and levels of activity, interaction, and engagement that occurred over the duration of a patron's visit. These patterns relate to space plans in terms of social engagement, proxemics (Hall, 1969*)*, lighting, circulation, and auditory elements. My observations detail each space in terms of the elements and principals of design.

Challenges in Behavioral Mapping

This technique of data collection is quantitative and therefore requires standardization of measures to align observations with predetermined responses (Patton, 2002). For this reason, behavioral mapping does not account for a person's emotional attachment to, or motivation within, a space. Behavioral mapping alone does not reveal a person's emotional engagement with a space. This method of data collection does provide a systematic guide for behavioral patterns that must be correlated with direct observation to achieve a meaningful understanding of a person's behavior. Because of its systematic nature, behavioral mapping required a considerable amount of data to quantify findings (Rainbolt, Benfield, & Loomis, 2012). For this reason, behavioral mapping can be a very expensive and time-consuming method of data collection.

CHAPTER IV

DATA AND ANALYSIS

Framework for Analysis

In conducting this analysis, I had the “intention of understanding ‘the world of human experience’ ” as it relates to patterns of interaction in coffee-house settings (Mackenzie & Knipe 2006). To analyze data from my investigational study, I approached my findings through a combination of a deductive and inductive framework (Miles & Huberman, 1994). Rather than approaching my data in the context of an established theory, I sought to "generate or inductively develop a theory or pattern of meanings” through my findings (Creswall, 2003, pp.9).

Data Management for Methods

My study began with an examination of data gathered in my visual and content analysis for each coffee-house. Preliminary observations and photographs enabled me to assemble profiles for each coffee-house, helping me to understand how time of day, and foot traffic might affect patron behavior. To help situate behavioral patterns in the context of environmental engagement, I used observational data and behavioral mapping to record patterns of preferred seating and circulation for each coffee-house. I documented patterns of circulation on each floor plan in terms of main paths and secondary paths, differentiating between the primary circulation system and routes undertaken by individual patrons (Rengel, 2007). In consideration of preferred seating areas, I used data

to average the typical use of each seating area, separating use by individual, group, or both individual and group. To understand the relationship between environment and human interaction, I created a third set of plans representative of the types and frequencies of patron interactions in each setting. In response to the varying nature of the interactions I observed, I documented them in terms of primary and secondary social interactions, according to the four levels of interaction outlined in my observational study (see: Table 2). The relationships that exist between coffee-house interiors and patron interaction became evident when I juxtaposed data from each of the three plans. Collectively, I was able to gather findings to generate a comprehensive plan of prominent patterns interaction present in each coffee-house.

Thematic Development

Utilizing the framework developed though visual and content analysis, direct observation, and behavioral mapping, I looked for the development of themes within the findings. I then generated a data display, or "an organized, compressed assembly of data that permits conclusion drawing" (Miles and Huberman, 1994). My data display included a series of floor plans and matrices that I employed to understand the relationships that exist between patron interaction and interior elements.

Profile Development

To approach this phenomenological study, I generated a profile for each of the five coffee-houses in my study using information gathered for my visual and content analysis in order to detail the types of patrons typical of each coffee-house; social

interactions and behavior present in each setting; and patterns in the ebb and flow of business.

Environmental Analysis

The next step in my profile development was to interpret the circulation patterns, preferred seating, and social interactions present in the coffee-houses. Using behavioral mapping and observational data, I categorized portions of each coffee-house according to three basic elements of space: domains, centers, and pathways. For the purpose of this study, I defined the coffee-house as a domain, as it served as grounds for the social engagement that occurred in centers and along pathways within. In consideration of typical activities in coffee-house settings, I identified primary and secondary pathways of circulation, as well as three primary centers encountered by patrons within each domain. The centers in each coffee-house included the counter, the condiment station/ pick-up area, and the patron's preferred table. I conducted my environmental study in terms of these spatial features, which served to streamline the platform across which I examined emerging themes in this phenomenological study.

Phenomenological Observation

After considering the nature of each coffee-house separately, I chose to triangulate emerging behavioral trends to create two-dimensional graphic representations of the ways in which individuals interact in interior spaces. Through these images, I was able to more clearly perceive thematic development over time in terms of levels of interaction and types of person/environment interactions. I applied the concepts of

environmental psychology and social science as a framework for my examination of the phenomenon of coffee-house interactions. Additionally, I connected concepts of social constructivism, social learning, and place theory to components of territoriality and proximal distance, as relating to primary components of interior spaces. Establishing these connections allowed me to interpret my observations and postulate the types relationships that exist among spatial elements in coffee-house environments.

System of Study

At each coffee-house, I observed two times a week, for thirty minutes, over the course of twelve weeks. Each thirty-minute investigation took place on one weekday and one weekend day. In total, I dedicated twelve hours of investigation to behavioral mapping and unstructured observation at this coffee-house. Over the course of my investigation, I compiled field notes from each study, documenting patterns of behavior in terms of interaction levels established in my observational study procedures.

The data from my behavioral mapping and unobtrusive participant observation enabled me to create an interaction map to reveal levels and location of patron interaction on a plan of the space. To reach these findings, I averaged data from my behavioral maps and incorporated observational data from my field notes. Collectively, I was able to identify primary and secondary levels of interaction, in addition to the interactions occurring in places where individuals tended to linger.

Coffee-Houses

EUC Starbucks

Figure 16. EUC Starbucks Interior

Profile

The EUC Starbucks is housed in the Elliot University Center, which serves as the student union for The University of North Carolina at Greensboro (UNCG). This building sits at the heart of UNCG campus and serves primarily students, professors, university staff, and guests visiting campus. Considering the coffee-house's relation to UNCG, the patrons of the EUC Starbucks are self-selecting and tend to be members of the academic community. Typical patrons are students of various genders, backgrounds, and ages; somewhere between 20s-30s in age. The coffee-house tends to serve mainly students, visiting both alone and in groups. Over the course of my study, I observed that, during the afternoons and midmornings, there was a strong flow of traffic in and out of the coffee-house. Patrons appeared to be hurried, and did not spend much time interacting with one another or with the space. Conversely, groups of individuals met during these

windows of time and engaged in group work over the EUC Starbucks tables. Groups of students would sometimes have computers, but often would just be conducting discussions, supported by the presence of a single computer. It is important to note that not all group members were drinking coffee in these cases. Individual patrons were usually working on schoolwork, often using a computer. Because the EUC Starbucks is housed by another university building, hours and accessibility are restricted the days and times the building is in operation. When the coffee-house closed for the evening, patrons were asked to leave.

The EUC Starbucks Experience

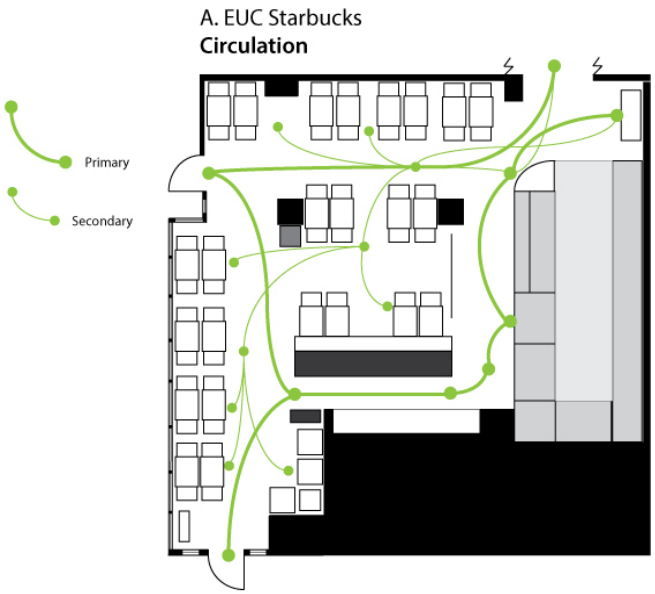

Figure 17. EUC Starbucks Circulation

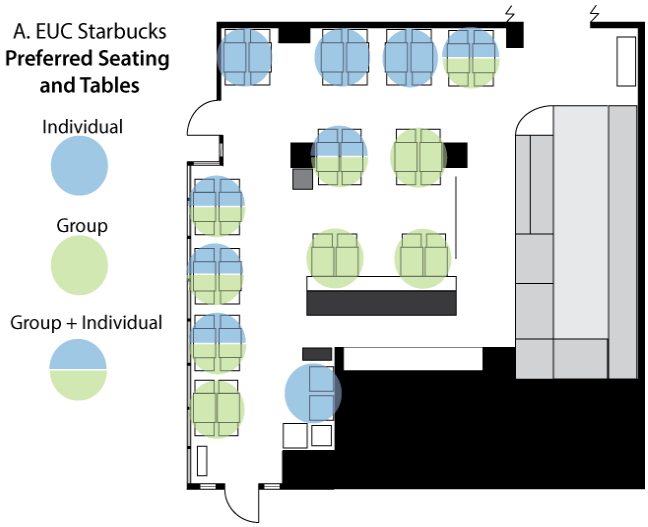

Figure 18. EUC Starbucks Preferred Seating

Primary pathways of circulation at the EUC Starbucks were identifiable in three main channels that patrons used to enter/ exit the coffee-house. As a result, the pathways attracted a strong current of patron activity to the main counter. Long lines formed as these pathways converged, sometimes causing individuals to enter the coffee-house and leave without ordering. Lines corralled between a row of coolers and product displays leading up to the counter. The quantity of lingering patrons frequently exceeded this area of circulation, infringing on both main and secondary pathways through the space. Secondary pathways of circulation overlapped the primary pathways, sometimes resulting in conflicting pathways navigating through the space. Around the counter and into the pick-up/ condiment area, I recognized a change in materiality on the floor. Patrons responded to this delineation as they would a boundary in the space, separating the standing crowd from the seating groups.

Having observed patrons in their process of seating selection, I identified patterns in seating preferences demonstrated by groups and individuals. Tables in the EUC were all identical and rectangular in shape, arranged in pairs. All of the tables in the space were semi-fixed, allowing patrons to separate table couplings from their designated arrangements (Hall, 1969). The EUC also offers a number of fixed-feature seating, with built-in bench seating accommodating the semi-fixed table tables. Because these seating groups have the capacity to shift apart, patrons will periodically arrange groups based upon needs to accommodate the size of their group. This appeared to happen most frequently along the fixed-feature, bench seating.

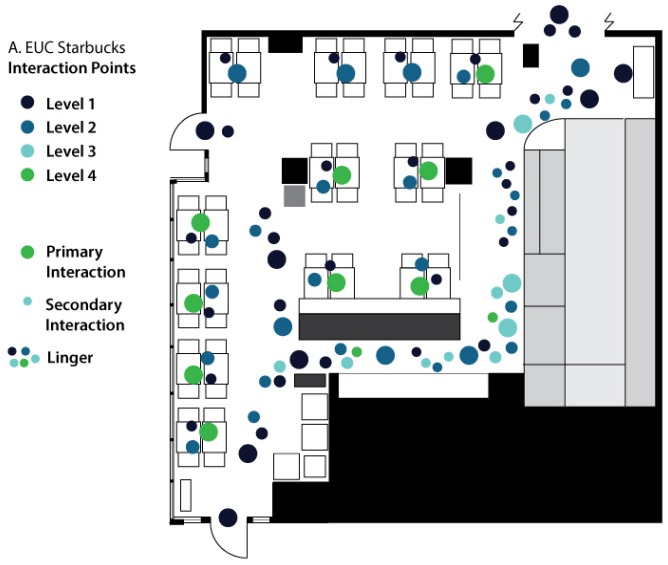

Figure 19. EUC Starbucks Interactions

I discovered that all four levels of interaction were present in the EUC Starbucks. Although time of day and day of the week seemed to contribute to a fluctuation of patron attendance, the patterns of behavior were consistent enough to compile the data on a

single, collective floor plan. The highest levels of interaction occurred around the beverage counter and at tables, among groups or three or more patrons. The lowest levels of interaction occurred along pathways and at the pick-up counter, and condiment station.

Coffeeology

Figure 20. Coffeeology Interior

The Coffeeology Experience

I discovered that all four levels of interaction were present in Coffeeology. Attendance fluctuated according to time of day and day of the week; specifically influenced by UNCG students' presence. Even so, patterns of behavior were consistent enough to demonstrate an average of types and levels of interaction. I did find that levels one and two were most prevalent at Coffeeology. This appears to be most closely associated with circulation around tables and the organization of tables in the space.

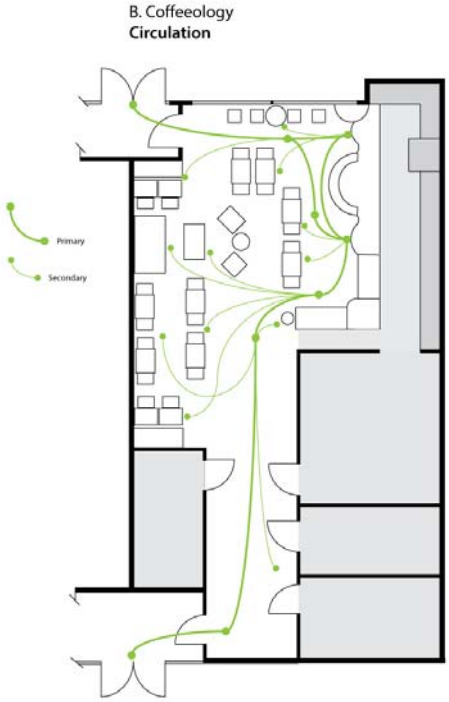

Figure 21. Coffeeology Circulation

Primary pathways of circulation in Coffeeology include two major thoroughfares along which patrons may enter/ exit the coffee-house; one from the coffee-house's Tate Street façade and a second to the rear parking lot. Because of these two separate entrances, I noted that there was not a clear indication as to where patrons were expected to wait in line. As a result, patrons formed lines along the coolers and surrounding the organic shaped counter. In this case, it was clear that spatial components served to dictate the navigation and intrapersonal distance in the space. When patrons transitioned from ordering to seating, they embarked on a secondary path of circulation. Primary and secondary pathways frequently overlapped, producing conflicting pathways and mixed-

use space. This was particularly prevalent around the counter and in the pick-up/condiment area.

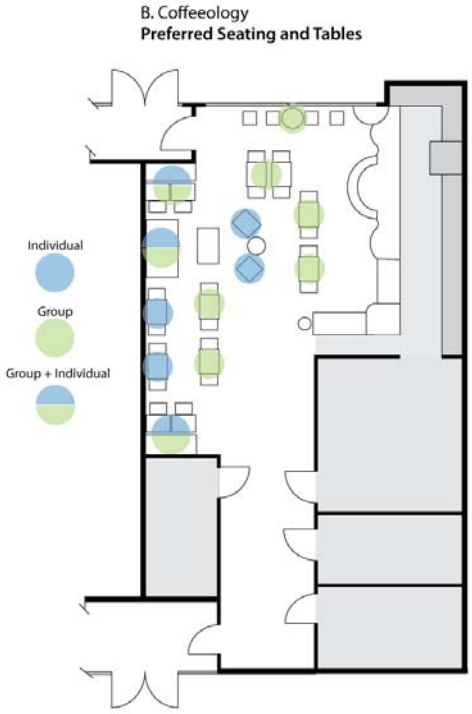

Figure 22. Coffeeology Preferred Seating

Having observed patrons in their process of seating selection, I identified patterns in seating preferences demonstrated by groups and individuals. Tables in Coffeeology vary in size according to seating groups, but are primarily rectangular in shape and designed to accommodate two patrons. Smaller tables are paired to accommodate larger groups, but remain semi-fixed; this allows patrons to separate table pairs from their designated arrangements (Hall, 1969). During slower times, individuals arrange furniture to suit their needs. Individuals working alone will occasionally combine tables or select a pair of tables over which to establish ownership. Preferential seating groups include

booth seating and seating along walls. Groups of individuals typically select the tables in the center of the space. Patrons often move tables and chairs to increase proximity between themselves and surrounding individuals. They frequently arrange semi-fixed furniture based upon individual activities or to accommodate group size. Coffeeology has two fixed-feature seating groups, which have booth seating paired with semi-fixed chairs and tables. Serving a similar function, centralized lounge seating represents a fixed seating group with only minimal opportunity to manipulate its arrangement.

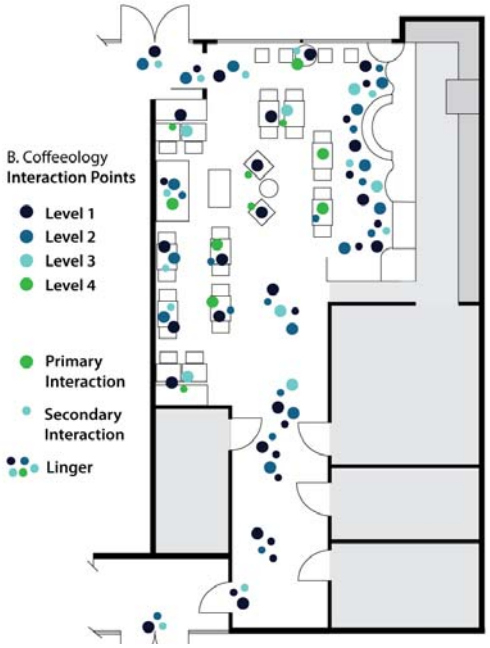

Figure 23. Coffeeology Interaction Points

Through my findings, I discovered that all four levels of interaction were present in Coffeeology. Time of day and day of the week contributed to a fluctuation of patron attendance and patterns of behavior. During university operating hours, behavior was academically oriented, while evenings and weekends presented increased recreational

activity. Frequency of interaction and interaction level correlated with key areas of the coffee-house interior. This link revealed a strong connection between spatial components and interaction, specifically level of interaction.

Tate Street Coffee

Figure 24. Tate Street Coffee House Interior

Tate Street Profile

Unlike the EUC Starbucks and Coffeeology, Tate Street Coffee House has the advantage of being original to the area and therefore appeared to draw a crowd beyond UNCG students and faculty. This was most apparent in the early morning, with a number of "regulars" stopping in on the way to work. To this effect, Tate Street Coffee House has an established sense of third place. This coffee-house also offered scheduled, live performances, which attracted a more diverse range of patrons, varying from average behavior and patron profiles. I chose to omit data from periods of study with live performance, as it added a number of uncontrolled variables that influenced my comparative analysis.

The Tate Street Experience

Patterns of patron behavior in the coffee-house were consistent enough to compile the data on a single, collective floor plan. To gain a more comprehensive understanding of these levels in context, I compared patterns to those available on the circulation and preferred seating plans. I found that levels two and four were most prevalent at Tate Street Coffee although all four levels of interaction were present. The prevalence of level one and two interactions seems to be most closely associated with the size and close proximity of tables in, as well as the organic organization of tables in the space.

Environmental Analysis

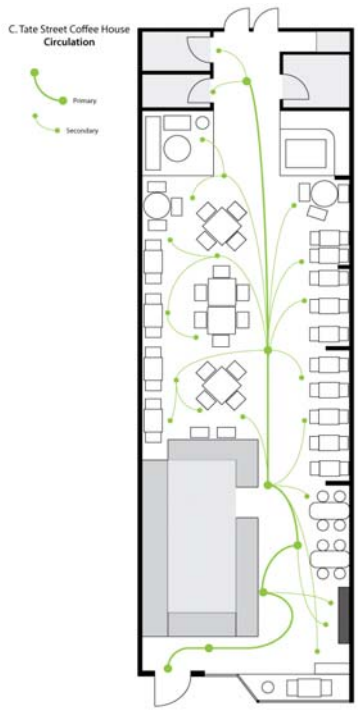

Figure 25. Tate Street Coffee House Circulation

The primary pathway of circulation at Tate Street Coffee House stems from a single main entrance into the space. This entry channels a stream of patron activity along a common corridor, which contains multiple centers of engagement (Rengel, 2007). While this facilitates ease in navigation, it can cause crowding in narrow passages and interference with patron activity. There is little distinction between the primary centers along the main route, which can hinder clarity of spatial functions and social protocol. Tate Street Coffee has a limited amount of space available for lingering and lines, which can cause a patron to experience stress due to crowding and an absence of defined goals (Kopec, 2006). Individuals lingering around the counter and condiment stations often block the main passageway and inhibit ease of circulation through the space.

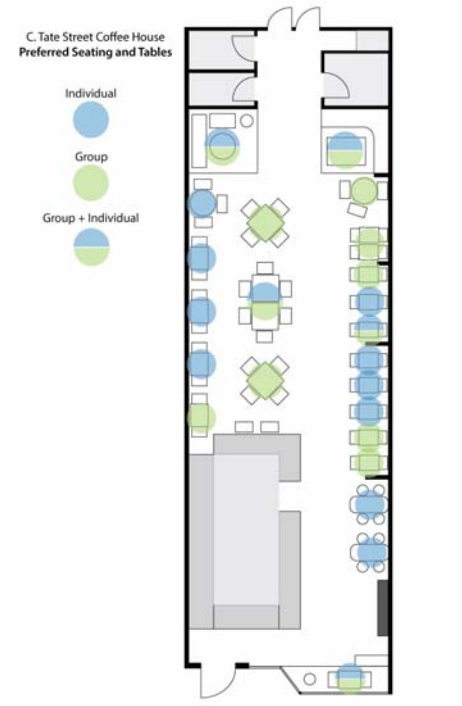

Figure 26. Tate Street Coffee House Preferred Tables

Having observed patterns of table selection illustrated by Tate Street Coffee House patrons, I recognized that table orientation and location were factors in seating selection Individuals or pairs typically preferred tables that are parallel to the wall. Tables that are perpendicular to the wall were more frequently selected by groups of two or more patrons. Tables and chairs in this space vary in shape and size, helping to accommodate a variety of individual and group needs. Table and seating arrangements in the space shifted daily, as patrons manipulated the semi-fixed furniture to suit their needs (Hall, 1969). Greatest shifts occurred in seating groups along the center of the space. These large, square tables were regularly rearranged, sometimes angled along the axis of the space and sometimes are often shifted to combine tables for groups. Tables perpendicular to the wall were continuously undergoing manipulation to combine and separate seating groups. The most frequently occupied seating included tables on raised platforms in the space. The platforms help to separate these seating groups from the space, creating distinct boundaries to define the table as a center of activity (Rengal, 2007). These areas facilitate deeper concentration among groups, amidst the busy coffee house. This is characteristic of balanced sociofugal/ sociopetal space. The platform isolates individuals or groups from the others in the room, while promoting engaged group interaction (Hall, 1969). The furnishings on these platforms include fixed seating, which does not allow for user manipulation. In this capacity, platforms may serve to anchor individuals and ease the ability to claim ownership over the space (Hall, 1969; Kopec, 2006).

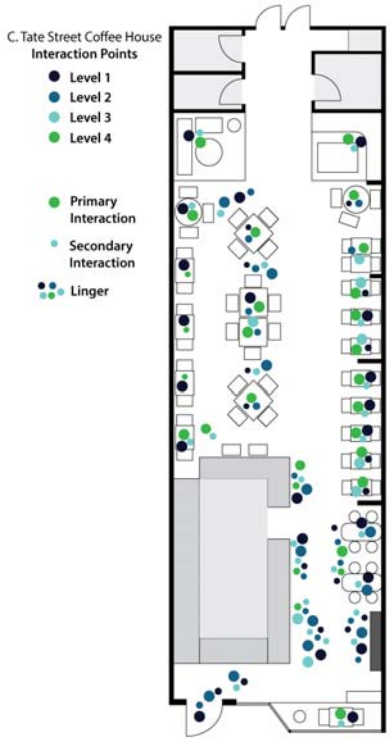

Figure 27. Tate Street Coffee House Interaction Points

Although all four levels of interaction were present in the space, levels four and one were most prevalent. The highest levels of interaction occurred around the beverage counter and at tables, among groups or two or more patrons. Interactions at the beverage counter are necessary and expected by coffee-house patrons. Likewise, staff in Tate Street Coffee serve guests across a low counter, facilitating improved conversation with customers. This is a second example of a space that achieves a sociopetal/sociofugal elements. To coffee counter serves are a means of drawing individuals together in social interaction, but maintains a barrier to separate the two areas of activity. The lowest levels of interaction occurred along the main circulation pathway and around the condiment counter. This appeared to be a result of circulation limitation. It could also be related to a

lack of protocol associated with the mixing of functions along the main pathway of circulation. Considering the types and levels of interactions occurring in the space as a whole, Tate Street Coffee has an established sense of third place for many of its patrons.

The Green Bean

Figure 28. The Green Bean Interior

The Green Bean Experience

I found that all four levels of interaction were present in the Green Bean. I compared patterns of behavior occurring along circulation paths and in relation to preferred seating. Cross-referencing my observational data and behavioral mapping, I found that interaction levels three and one were most prevalent in the space. This seems to be most closely associated with the sparse organizational layout in the space, as well as the large scale of two-person tables. There is minimal movement of furniture, but this may be due to an abundance of seating in the coffee-house. Small alcoves and two level changes help to define smaller boundaries within the large space. A bar facilitates

engagement between staff and patrons in an area specific to recreational social interaction.

Figure 29. The Green Bean Circulation

Circulation follows a main pathway between the main entrance and the secondary, rear entrance. Along this channel, patrons are guided to the counter, and wait in line in a large open space. Very few interactions occur in this area, which may be attributed to a lack of organization in that area, as well as a patron's inability to define territory in open space. Because of the spatial organization around the counter, patrons are then funneled into a small area to order, wait, and customize drinks. The mixed-purpose nature of this area does not communicate clear goals to patrons, which was reflected in patron confusion and avoidance of the space. The crowd often appeared to exceed this area of circulation leading up to the counter, infringing on both main and secondary pathways

through the space. Secondary pathways of circulation overlap the primary pathways, sometimes resulting in conflicting pathways navigating through the space. Secondary pathways of circulation carry patrons from the counter and condiment area to preferred seating. These pathways are interrupted by the various functions occurring in the space, which can reflect as confusing and disorganized, resulting in stress of the user.

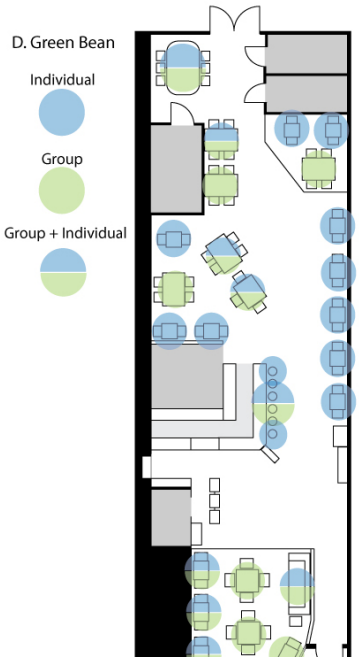

Figure 30. The Green Bean Preferred Tables

Having observed patrons in their process of seating selection, I identified patterns in seating preferences demonstrated by groups and individuals. Tables in the Green Bean are identical and square in shape. These tables are designed to facilitate individually to accommodate two patrons, but there are several tables that are arranged for four people or more. Specifically, there is a table designed to accommodate large groups. In one of my observational studies, I saw two individuals sit together who had not been previously

acquainted. The individuals began with a level two interaction, greeting one another and agreeing to share the space. Similarly, the Green Bean has two raised seating platforms, which contribute to social interaction as sociofugal and sociopetal interactions (Hall, 1969). Here again, territoriality plays a role in limiting and facilitating social interaction.

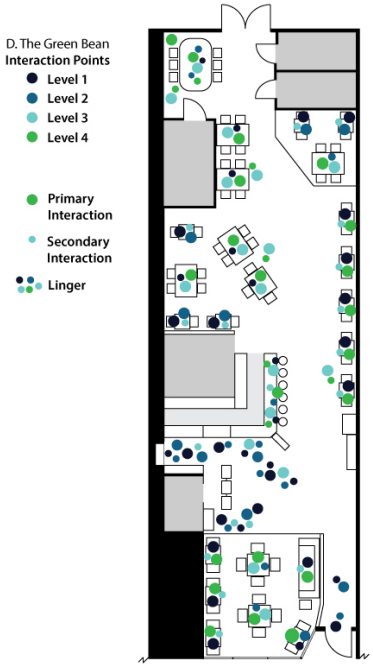

Figure 31. The Green Bean Interactions

Glenwood Coffee and Books

Figure 32. Glenwood Coffee and Books Interior

The Glenwood Coffee Experience

I found that all four levels of interaction were present in Glenwood Coffee and Books. Although time and day seemed to contribute to a fluctuation of patron attendance, the patterns of behavior were consistent enough to compile into a single interaction plan. To gain a more comprehensive understanding of these levels in context, I compared patterns to those available on the circulation and preferred seating plans. Triangulating my observational data and behavioral mapping, I discovered that levels two and four are most prevalent at Glenwood Coffee and Books. This seems to be most closely associated with the size of building's interior and selection no furniture groupings. The organic organization of tables in the space allows patrons regularly arrange furniture to suit their needs. Fixed chessboards on tables facilitate interaction in the space. Proximity to UNCG also appears to play a role in the types and frequency of interaction, as Glenwood Coffee & Books has far more limited hours than other coffee-houses in my study. The limitation of shortened and fluctuating hours related well to the needs of Glenwood

Coffee and Books, but prevented the facility from becoming a “third place” for local individuals (Waxman, 2007).

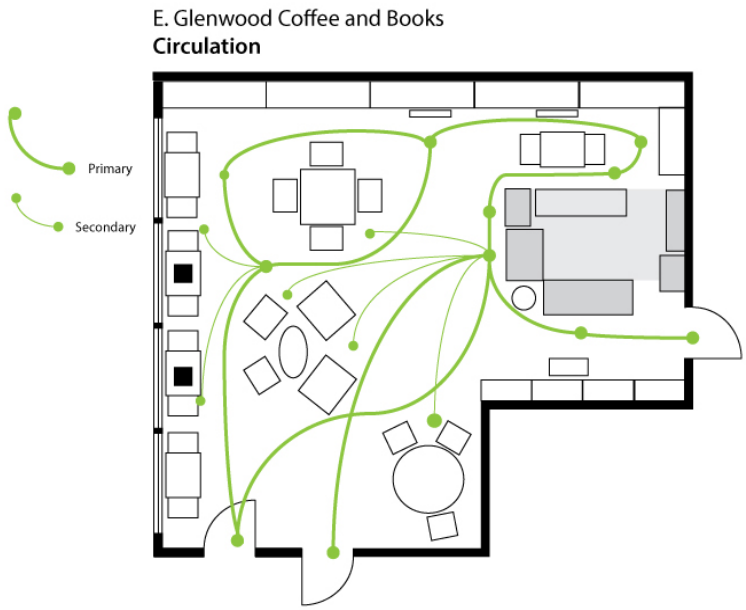

Figure 33. Glenwood Coffee and Books Circulation

The main channels leading to and from the main entrance and exit identified primary pathways of circulation at Glenwood Coffee and Books. The coffee-house counter had a unique advantage of being lower than typical counters, facilitating high levels of interaction between patrons and staff. Circulation to the condiment area also reaches merchandise for sale along the bookshelves in the space. Because of the variety of activities occurring in once area, circulation patterns appear to be challenged by small space with limited ability to manipulate it to satisfy patient discomfort.

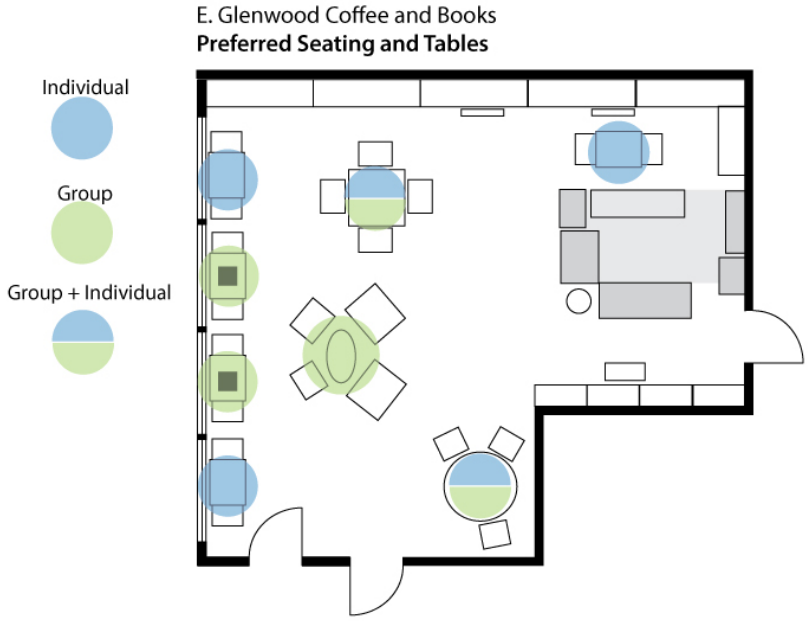

Figure 34. Glenwood Coffee and Books Preferred Seating

Having observed patrons in their process of seating selection, I identified patterns in seating preferences demonstrated by groups and individuals. Tables at Glenwood Coffee & Books vary in size according to table grouping. . Semi-fixed furniture allows patrons to combine tables and move chairs from their designated arrangements. Table selection is also dependent upon the activities being executed by patrons in the space. Individuals working alone typically select tables without the chessboards, parallel to the windows. Groups typically select the tables and lounge seating in the center of the space. These suggest elements of territoriality and place attachment, as well as a response to sensory stimuli in the space.

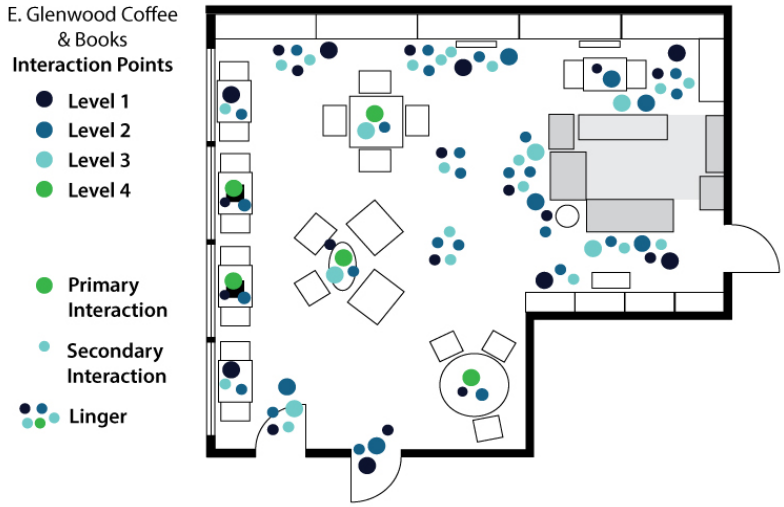

Figure 35. Glenwood Coffee and Books Interaction Points

I found that all four levels of interaction were present in Glenwood Coffee & Books. Time of day and day of the week heavily influenced the fluctuation of patron attendance. Several of my observational windows were not options because there were no other patrons in the space. The patterns of behavior were consistent enough to compile the data on a single, collective floor plan. The highest levels of interaction occurred around the beverage counter and at tables, among groups or three or more patrons. The lowest levels of interaction occurred along pathways and at the pick-up counter, and condiment station. Likewise, this coffee-house only serves brewed coffee and beans, which required less preparation than artisan espressos. There again, more time and attention was invested in the interaction between patron and staff.

Thematic Visualization

To gain a more comprehensive understanding of these levels of interaction in context, I compared patterns of circulation, seating preference, and interaction established in my findings. I illustrated this triangulation on two-dimensional comprehensive plans, which highlight the comprehensive concepts that may be applied to understanding social interaction occurring in coffee houses.

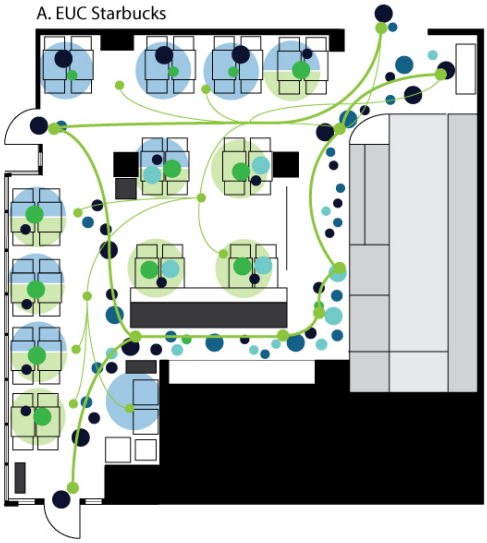

Figure 36. EUC Starbucks Triangulation Map

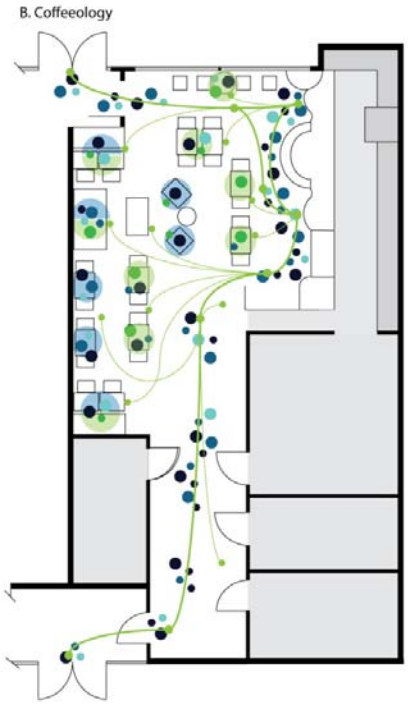

Figure 37. Coffeeology Triangulation Map

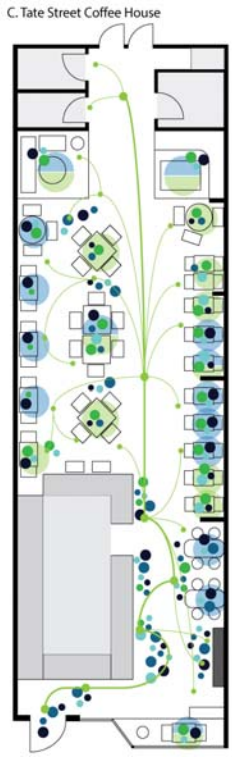

Figure 38. Tate Street Coffee House Triangulation Map

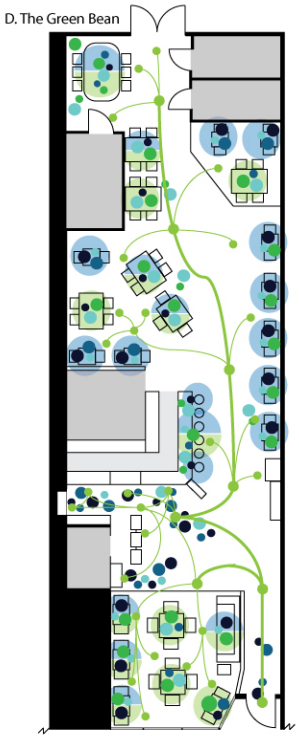

Figure 39. The Green Bean Triangulation Map

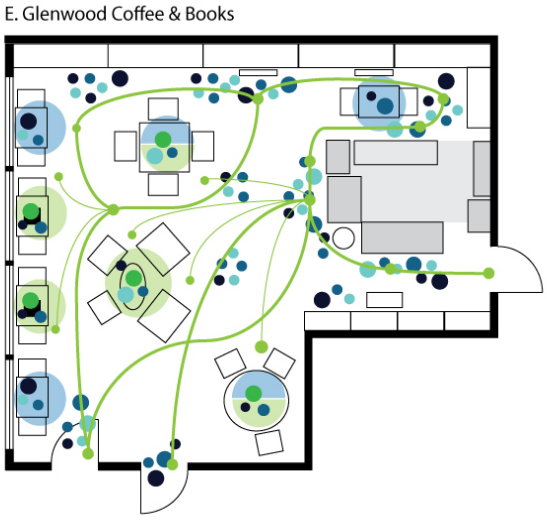

Figure 40. Glenwood Coffee and Books Triangulation Map

Comparing each of the triangulation maps, I can deduce that pathways play a role in limiting social interaction. This limitation may result from the flow of movement through circulation systems, which could prevent patrons from pausing to engage in social transactions. It is also feasible that, given patron proximity to one another, patrons experience stress from a breach in intrapersonal distance that may hinder social interaction (Kopec, 2006). Conversely, patrons exhibit high levels of interaction around the coffee-counter, as they engage in interaction with the coffee-house staff. This type of engagement could result out of necessity, as patrons attending the coffee-houses are aware that this level of interaction is required of the experience. Expectation or awareness in this situation could translate into patron goals and feedback associated with the ordering process. In this case, a patron may experience flow, or homeostasis, as s/he achieves anticipated outcomes, or goals, associated with a social encounter (Csikszentmihalyi, 1990). Goal attainment contributes to increased engagement and higher levels of social interaction (Rengel, 2007).

Around seating groups, interactions seemed to occur at higher levels around areas of semi-fixed feature space. Individual patrons with lower levels of interactions typically selected fixed-feature seating with semi-fixed tables that were often adjusted to accommodate personal comfort. This behavior is characteristic of territoriality; demonstrating a person's desire to change his or her surroundings and take ownership to meet personal needs.

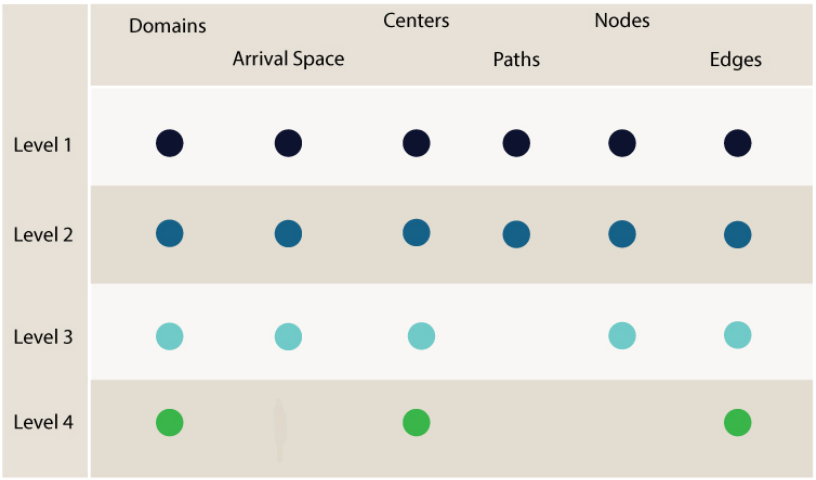

Figure 41. Spatial Element/ Interaction Relationships

To further my understand findings revealed in my thematic analysis of each coffee-house, I applied knowledge of spatial elements to identify relationship between spatial components and social interaction. Using my triangulated data maps, I identified areas of lowest and highest levels of interaction. Applying data in the form of a matrix, I was able to consider concepts of behavioral science and environmental study to analyze my findings.

Thematic Findings

Through this comparison, I can deduce that pathways play a role in limiting social interaction. This limitation may result from the flow of movement through circulation systems, which could prevent patrons from pausing to engage in social transactions. It is also feasible that, given patron proximity to one another, patrons experience stress from a breach in intrapersonal distance. Conversely, patrons exhibit high levels of interaction

around the coffee-counter, as they engage in interaction with the coffee-house staff. This type of engagement could result out of necessity, as patrons attending the coffee-houses are aware that this level of interaction is required of the experience. Expectation or awareness in this situation could translate into patron goals and feedback associated with the ordering process. In this case, a patron may experience flow, or homeostasis, as he or she achieves anticipated outcomes, or goals, associated with a social encounter (Csikszentmihalyi,1990). Goal attainment contributes to increased engagement and higher levels of social interaction (Rengel, 2007). Engagement could also be a result of sensory stimulation, occurring at the counter as a result of coffee preparation and visual stimuli.

Sensory stimuli may also be present at the tables due to the smell and taste of coffee and the types of activates undertaken by those patrons. Around seating groups, interactions seemed to occur at higher levels around areas of semi-fixed feature space. Individual patrons with lower levels of interaction typically selected fixed-feature seating with semi-fixed tables, which the often adjusted to accommodate personal comfort. This behavior is characteristic of territoriality; demonstrating a person's desire to change his or her surroundings and take ownership to meet personal needs.

Center

I identified three centers, or primary destinations: the counter, the pick-up area/ condiment station, and the seating areas. According to Roberto J. Rengel, Centers are places that offer patrons goals and feedback in a space (2007). They are "known places

where meaningful activities and social interactions take place" (Rengel., 2007, pp.46). In each of the five coffee-houses in my study, I identified the counter, condiment station/ pick-up counter, and tables as centers within each space. In these areas, goals are clear and feedback is immediate, encouraging users to engage in meaningful activities and social interactions (Rengel, 2007). In these areas, a user's senses are engaged; sensory experiences create a deep connection

Counter as Center

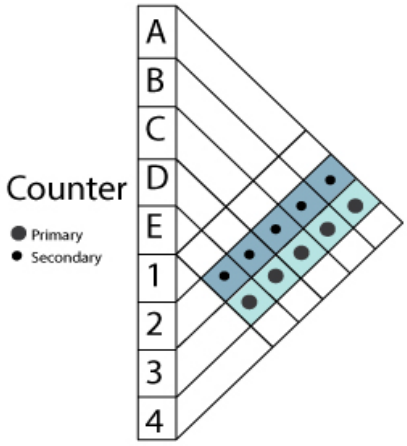

Figure 42. Counter Matrix

Patrons attending coffee-houses enter with predetermined expectations for the ways in which they will navigate the space. When they enter the space to purchase products, the counter represents the first primary interaction required of patrons. Considering data from each of the triangulated interaction maps, each of the coffee-houses was found to have medium to high levels of interaction occurring around the counter. The counter represents a balance between sociofugal and sociopetal space (Hall,

1969). This type of space helps to alleviate stress and promote comfort in consequent social transactions.

Condiment Station as Center

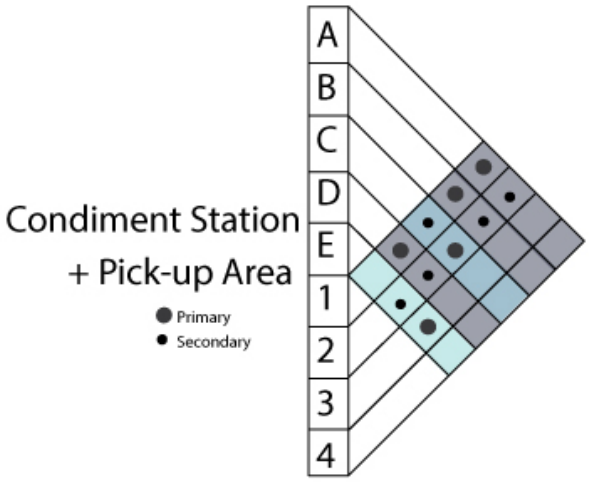

Figure 43. Condiment Station Matrix

Typically, these limited interactions occurred in areas of fluid circulation, including pathways and arrival space. Level one and level two interactions also appeared to occur frequently at tables situated along edges of the space. A lack of protocol in this space may contribute to mission goals. Likewise, individuals sometimes take coffee preparation and customization personally, as habits are personal to individual preference. The result of patrons waiting for one another to finish personalizing beverages. The stress experienced by this influence results from a lack of flow in the personas experience. Alternatively, this could be a basic response to unfamiliarity in present social situations.

Seating Groups/ Tables as Centers

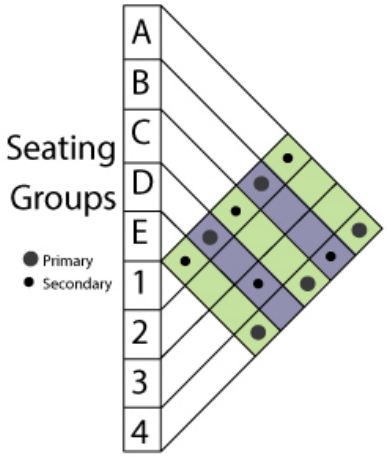

Figure 44. Seating Groups Matrix

Coffee-houses facilitate a sense of third place, which allows regular customers to develop a connection to the physical environment. Patrons with a connection to third place often demonstrate a sense of ownership over favorite tables or seating areas (Waxman, 2007). This ownership, or territoriality, grants individuals the comfort of belonging, which can be attributed to a feeling of trust (Hall, 1969). Over the course of my studies, I observed individuals leaving personal belongings at tables for considerable periods of time, in an apparent effort to define personal space. Juxtaposing this behavior with the concept of territoriality, personal belongings are used to establish and maintain territory (Hall, 1969; Waxman, 2009). Patrons connecting to third place are granted trust through a perceived sense of belonging, but may also develop territorial behavior from feeling of ownership in the space.

Pathways

Pathways in coffee-houses exist as both implied paths of circulation and corridors bounded by walls and fixtures. Pathways may be defined using lines, changes in color or texture, and various shapes on the floor or ceiling. Defined by elements of design, these features can serve the purpose of moving an individual into and out of a space or between centers within a domain (Rengel, 2007). The movement associated with pathways may reduce the opportunity to linger and reduce high levels of interaction.

Interaction Levels

Level One

Typically, these limited interactions occurred in areas of fluid circulation, including pathways and arrival space. At times of limited seat availability, individuals often arrived, surveyed the space, and then left the coffee-house without ordering. Level one interactions also appeared to occur frequently at tables situated along edges of the space. Individuals visiting the coffee-houses alone tended to gravitate to the abundant areas of small, unfixed seating groups.

With the understanding that furniture contributes to an individual's perception of territory in a space, I noted the types as locations of furniture being moved and shifted in the spaces. I noted that individuals move furniture to establish territory, which deters unfamiliar patrons from sitting too nearby. Individuals sitting alone often order a drink, place belongings at a table or seating group, and then return to the counter to retrieve the

drink. This highlights an effort to establish territory in a space, while exemplifying a feeling of trust in fellow coffee-house patrons. Fixed furniture allows an individual to claim a preset arrangement of furniture (Waxman, 2006), and individuals will arrange personal items around it to establish this claim. This said, elements in the space must be movable to promote sensory stimulation (Mau, 2010).

The stress experienced by this influence may also result from a lack of flow in the patron's experience. Alternatively, this could be a basic response to unfamiliarity in present social situations. To better understand the cause of level one interactions, a researcher may consider conducting an occupant surveys before the patron exists the space.

Level Two

The presence of level two interactions in each location seems to be attributable to different triggers. Commercialized coffee-houses do not offer a sense of third place. They are public entities, rather than being tucked away in communities. Much like other commercial coffee-houses, availability of the EUC Starbucks is restricted by the hours of operation for the building in which it is housed. Commercialized coffee-houses maintain a greater percentage of fixed features, lower ceilings, and lines in the floor and space. Collectively, these elements discourage visitors from spending time in the environment itself. Rather, spatial features efficiently direct individuals through the experience. In contrast to traditional coffee-houses, contemporary coffee culture is based upon this concept of efficiency- the experience is relative to a need for energy to speed an

individual through the day. This need is relative to changes in our society, with a growing need to accommodate the fast paced life-style of young generations. Commercial coffee-houses are often designed using fixed features and predictable design. The further from campus center, the more limited the interaction. Coffee-houses further from campus have more open space; however individuals appear to choose seating that is located along walls and on raised platforms. Smaller coffee-houses may more successfully offer a sense of belonging, or place, considering that reduced space results in less space over which to establish territory.

Level Three

Considering behavior in each coffee-house, level three interactions were most prevalent among individuals attending the coffee-house in a group or across the counter with staff. Patrons occasionally play board games that engage a larger group of individuals. Chess, in particular, was played at each of these places during my observational studies; groups of three or more individuals sometimes demonstrate relatively minimal interaction. Patrons were often preoccupied with computers or cell phones, or with papers and books.

Level Four

Interactions typically occurred among groups of two to three individuals, and were typical of all five coffee-houses. These interactions occur around nodes and centers within the space, but rarely occur along pathways or in mixed-use space. These interactions appear to be products of sensory elements in the space- specifically activated

by touch, taste, smell, and auditory elements. Lighting appeared to play a role in table preference, with added importance of consideration by individuals working on group tasks or projects. According to the foundational theories developed by Vygotsky, social constructivism and learning are more impactful, effective, and meaningful. Because coffee-houses host social interactions indicative of social learning, they are inherently responsible from responding to the needs of patrons as informal learners. Groups tend to move furniture to accommodate the needs of the group. When individuals enter in groups, they pick up drinks or snacks and then select a table to sit at. If additional individuals join them, they typically place their belongings in their intended seats and then retrieve a drink. Groups of three or more that appear to visiting with social agenda often move furniture to accommodate the group size. Interestingly, these groups do not always select seating groups designed to accommodate larger groups.

Summary of Process

Collectively, my observations from each coffee-house revealed patterns in interactions relating to spatial elements. To better understand these in context, I analyzed my findings for commonalities and variances. Further, I applied theories of environmental psychology and spatial language as a means of understanding social interactions in terms of the physical environment.

Comparing the level of interaction to geographic proximity to UNCG campus, I found that the further from campus center, the more limited the levels of interaction. This applied most notably to the Green Bean and Glenwood coffee and Books. In each

location, I found a greater presence of level one level and two interactions, with a greater number of individuals working alone. These locations are typically busier on weekends, greatly influencing the types and levels of interactions to occur. During weekend days, groups of individuals gather and engage in level three and four interactions. Weekend nights are frequently dominated by scheduled entertainment, which adds an additional layer of social interaction for consideration. Coffee-houses further from campus tend to have more open space, but individuals choose to sit in the small, defined areas. It may be argued that coffee-houses with small and "cozy" interiors more successfully meet the needs of patrons than those that offer large areas of open space

CHAPTER V

CONCLUSION AND EVALUATION

This stage in my research allows me to consider the meaning of my data and further assess its larger meaning and relation to the world of design (Miles and Huberman, 1994).

Purpose of the Study

The patterns of interaction outlined herein provided a foundation for further understanding the ways in which learning environments can be supportive of user engagement. To develop this understanding, I studied the environments and patrons of five coffee-houses situated within a one mile radius of the Gatewood Studio Arts Building at The University of North Carolina at Greensboro (see: figure 5). I engaged in a phenomenological study of these coffee-houses as informal environments for the observation of the behavior of a controlled population.

Research Question

This investigation was approached in terms of interactions associated with informal activity. The primary question addressed in this thesis was, how does the experience of the interior environment of a coffee-house manifest itself in the observable social interactions among patrons?

Summary of Conclusions

The data gathered in my investigation of the five coffee-houses within a one mile radius of UNCG campus provided a foundation from which I was able to recognize patterns of interaction and evaluate user behavior. Interpreting patterns of interaction from my investigational study, I identified several environmental commonalities appearing to influence social interaction. These commonalities included four levels of interaction occurring along pathways and at centers within coffee-house setting. Considering the consistency of the reoccurring patterns in behavior, I was able to understand implications for ways in which interior environments could be programmed to accommodate particular types of interactions. The underlying concepts manifested in coffee-house interactions have implications in both the design community and the Greensboro community, at large. Collectively, these patterns have the capacity to comprise a pattern language specific to informal learning environments. Such a language could be extended to offer architects and designers a tool to improve the success of informal learning environment design, facilitating more meaningful experience and greater user engagement.

Evaluation of Study Process

In the execution of this study, I was cautious of how my observational techniques were projected to patrons. My goal in this study was to document natural interactions occurring within coffee-houses. Without care, I realized that I could draw attention to my observations and patron awareness heightened resulting in a behavior shift to a less

natural state. Despite my efforts to conceal my purpose, individuals sometimes took interest in my observational activity. In turn, people watched me, watching them, which influenced the dynamic in group interaction and affected individual behavior. This may be attributed to my heightened sense of attention to the environment and other patrons. Attention to my activity increased at times when I sat at tables that could be moved to accommodate larger groups. At one point, an individual watched me finish my coffee and asked if I was planning to leave, because they were interested in incorporating my table into a grouping of tables. This direct interaction speaks to the dominance of territoriality in the space. I recognized that I had captured the attention of my subjects after noticing that they moved chairs and tables to have a better view of me, or appeared to be distracted from task or conversation at hand. On one occasion, an individual stopped to observe the floor plan I was working on and inquired about my work. The interest this patron took in my activity demonstrated the power of informal and social learning. The nature of my activity in the coffee-house was clearly designed to be subtle, but drew a keen interest from fellow patrons.

Because my actions had affected the natural interactions and behavior of these patrons, I categorized the findings from this data as a separate, participant-user interaction. In testing the implications behind this investigational impact, I discovered that when I brought another individual with me, my target population did not appear to have the same suspicion of my activity. Similarly, a computer or phone were necessary to conduct study without being noticed. It appeared that, technology created a barrier between an individual and his or her surroundings.

Considering the interest that coffee-house patrons took in my discrete methods of investigation, it is evident coffee-house patrons placed an emphasis on social contracts in the space. Even for those visiting the coffee-house alone, the actions and behavior of fellow patrons played an important role in the construction an interpretation of the overall experience. Social constructivism was in this capacity, exercised as a user used experience and sensory engagement to understand the world (Mau, 2001). Contemporary theories of social constructivism suggest that collaboration and social interactions occur alongside personal critical thought and interpretation (Sawyer, 2003). Whether observed or physical, interactions among coffee-house patrons facilitate more impactful learning experiences (Kozulin, Gindis, Ageyev, & Miller, 2003). Those engaged in these social constructivist experiences were presented with choices and had the ability to accept reason and acquire new information. Coffee-house patrons had an inherent ability to learn through observation, inducing and acquiring knowledge through patterns of other patrons' behavior. Whether deliberately or inadvertently, sensory conditions allowed visitors to observe and transpose the information from fellow patrons (Bandura, 1971). These concepts contribute to the behavioral expectations and social norms in the space. Divergence from these norms included my research techniques, causing patrons to evaluate my actions according to existing social contract.

Evaluation

Centers

The types of interactions occurring around coffee-house counters achieved a balance between sociofugal and sociopetal space (Hall, 1969). To facilitate this balance, the counter itself served as both a means of separating patrons and staff, and bringing them together through social interaction. Patrons' individual space, or territory, was defined by the spatial definition supported by this balance, alleviating stress and promoting comfort in consequent social transactions. Because the counter is a fixed feature in the space, patrons were granted feelings of security and predictability. Patrons were guided by protocol when they approached the counter, which presented them with clear goals and immediate feedback from the interactions associated with this space (Rengel, 2007). The challenges of the experience- determining what to order, how fast to speak, how much to pay- were matched by patrons' skills, allowing visitors to achieve the feeling of homeostasis, or flow (Csikszentmihalyi, 1990). Further, patrons became engaged thorough sensory arousal. Patron interest was amplified by the sensory experience in this area of the coffee-house; coffee aroma, direct lighting, tender exchange, and the sounds of grinding beans and steaming milk. The sensory connection in this experience is linked to cognitive constructivism, manifesting itself in place attachment (Powell & Kalina, 2009; Waxman, 2007). In combination, sociofugal/sociopetal balance contributes to achieving homeostasis, and sensory arousal

attributed to high levels of frequent interaction around the coffee-house counter (Hall, 1969).

In each of the coffee-houses in my study, I identified that the condiment stations and pick-up counters were within close proximity to one another. Low levels of interaction were typical of these areas. The overlap of spatial function resulted in a reciprocal mix of patron interactions. The consequential overstimulation contributed to an inability to establish territory or achieve an overall sense of place (Kopec, 2006).

The mixed-purpose and unstructured nature of these spaces contributed to a lack of protocol for patron interaction. Patrons struggled to identify goals in these spaces, as overlapping functions interrupted individual patterns of behavior and challenged expectations. In terms of Flow theory, the goals and actions were unclear to patrons, resulting in a failure to achieve homeostasis (Csikszentmihalyi, 1990). The quantity and density of patrons caused crowding in the area, which appeared to influence patron interactions (Kopec, 2006). Without necessary personal space, intrapersonal distance is defied. Likewise, the function and duration of activity differed for each patron in this space. Patrons using condiments are generally limited by time or the pressure of those looking on; patrons in this areas can be hesitant to reveal habits and tendencies to unfamiliar patrons surrounding them. While the opportunity to linger around a center facilitates opportunity for interaction, factors in this space inhibit user engagement and therefore prevent social interaction (Waxman, 2007).

Coffee-houses facilitate a sense of third place, which allows regular customers to develop a connection to the physical environment (Waxman, 2007). Patrons with a connection to third place often demonstrate a sense of ownership over favorite tables or seating areas. This ownership, or territoriality, grants individuals the comfort of belonging, which can be attributed to a feeling of trust (Hall, 1969). Over the course of my studies, I observed individuals leaving personal belongings at tables for considerable periods of time, in an apparent effort to define personal space. Juxtaposing this behavior with the concept of territoriality, personal belongings are used to establish and maintain territory (Hall, 1969; Waxman, 2009). Similarly, groups of individuals often manipulated semi-fixed furniture to generate a new seating arrangement, regardless of pre-existing group seating groups. This demonstration of spatial manipulation is consistent with application of critical theory work knowledge in the space (MacIsaac, 1996). In manipulating space, a patron exerts ownership to achieve a sense of belonging, or place (Waxman, 2007). Social constructivism plays a role in Patrons connecting to third place are granted trust through a perceived sense of belonging, but may also develop territorial behavior from feeling of ownership in the space. Further, small tables available in the space appear to help patrons establish territoriality over their immediate space. The limited nature of these interactions suggests that the user may be resistant to interaction due to territorial encroachment or proximal discomfort.

Pathways

Pathways of circulation are arousal-activators in coffee-houses, as interest and arousal are sparked in conjunction with an individual's emotional load (Rengel, 2007). While pathways offer goals to achieve and suggested actions, they do not offer immediate feedback, resulting in failed homeostasis. Likewise, main pathways do not typically require user engagement. In this case, the user's skills are not met with challenge and boredom results. Pathways of circulation influence the way in which people interact; they have the capability to cause a conversation to start, continue, or stop abruptly (Kopec, 2006; Hall, 1969; Costa, 2011).

Theories associated with territoriality suggest that circulation in a space should not funnel individuals directly into face-to-face confrontation; rather, side-by-side interactions are less forceful and allow an individual to determine his or her comfort in a situation (Kopec, 2006). Likewise, directionality of an individual's orientation appears to influence the probability of social interactions. When individuals are forced to participate in unplanned interactions, stress may result. Stress in an environment can be a result of environmental triggers (Rengal, 2007), or stress can result from unfamiliarity in social situations (Csikszentmihalyi, 1990).

Main Pathways

When clearly defined in a space, main pathways can communicate directional requirements to a patron, in lieu of signage or graphics. Signage was not used as a means of directing customers in any of the coffee-houses in my investigation; rather, the implied

route for circulation caused users to access the various centers along the path. The main pathways through each coffee-house encouraged individuals to follow protocol associated with the order of actions, speed of movement, and proximity to fellow patrons. The presence of spatial direction reduced the number of decisions required of each user, therefore lessening patron anxiety. In this case, the patron is then able to focus on establishing and meeting personal goals associated with his or her collective experience (Kopec, 2006). Very few interactions occurred along main pathways in the coffee-houses; those that did occur typically did not exceed level 2 interactions. Pathways, especially main pathways, lack static space, which eliminates a user's ability to establish territory or ownership. Pathways in these coffee-houses were all situated around destinations, which attracted a relatively large number of patrons to a single area. As a result, in crowding could generate tension among patrons, with close proximity encroaching on each patron's varying intrapersonal distance zones (Kopec, 2006). The low levels of interaction could also result from a lack of personal control as a patron is directed through the space (Rengel, 2007). Without freedom of control autonomy is removed and a user experiences his or her proverbial existentialist hell.

Regardless of the level of interactions occurring along main pathways of circulation, the paths leading to centers are important to consider as tools for grouping individuals (Rengel, 2007). It is important to recognize that individuals enter pathways of circulation with cognitive agendas, which affect the degree to which they will interact with others (Connell, 2011). When individuals have the opportunity to follow a shared path, they are sharing the same goals with the same actions, expecting the same feedback

(Csikszentmihalyi, 1990). This similarity has the capacity to spark competition and angst, or manifest itself in social norms in the space (Hall, 1969). In this case, patrons express trust in the guidance of the space and forging a social contract with unfamiliar individuals around them (Kopec, 2006).

Secondary Pathways

Conversely, secondary paths carry individuals off of the main pathway to select seating, access the trashcan, or visit the restroom (Rengel, 2007). The decisions associated with secondary paths of circulation cause a user to think about his or her direction, speed, and physical presence. The individual must establish personal goals to achieve in his or her experience; an introverted process of spatial processing. Goal processing required of patrons accessing secondary pathways sometimes cause a user to feel stressed, further separating them from potential interpersonal interaction. Allowing and individual to follow paths of their choosing adds disorganization to a space, triggering stress in individuals navigating the space.

Implications and Questions Raised

This study is unique and specific to Greensboro, North Carolina, which is located in the Southeastern United States. Culturally, the area of study is still influenced by its historic southern roots, contributing to distinct proxemic zones and levels of interaction. Further, 35% of Greensboro's population holds a higher education degree; a demographic that is represented in the four colleges and universities within immediate proximity to my area of study (US Census, 2010). The diverse populations attending these colleges and

universities represented the target population in my study. For these reasons, this investigation is unique to this region and does not allow me to draw conclusions applicable to world at large. Rather, I am able to use findings from this study to suggest specifically, by research, additional questions I am led to consider:

1. How do findings from this investigation compare in the context of a cross-cultural comparison?
2. How has the paradigm of public versus private space in American coffee-houses shifted from that of historic coffee-houses?
3. What is the intentionality of each coffee-house and how does this manifest itself in the interior environment? In keeping with this, how does the owner's agenda impact the types of patrons and behavior typical of the space?
4. Considering the desire to be alone in public space, is there a shift occurring in human nature?
5. What role do coffee-houses play as filters for over-stimulation resulting from constant social interaction through cell phones and social media?

The findings from this study inform scholarship in interiors by contributing the body of knowledge regarding human interactions in the built environment. The data gathered through this study indicates the existence of the possibility for linking patterns of interaction present in coffee-house environments with those of other informal learning

environments. The resulting understanding developed in this study will inform the way in which designers can program interior design for user interaction.

Designers and architects can use the theories connected in this study as a means of programming designs for specific interactions. Consideration of the data in this thesis can help designers produce environments better suited for the activities occurring within them. The evaluation methods outlined provide a technique for measuring levels of interaction in a space, offering designers a means of gauging the need for improved engagement in existing spaces. Designers can use this data to better relate interior design to its intended function, facilitating greater engagement and meaningful connection between a user and an environment.

To further evaluate the observations outlined in this study, additional environmental factors should be considered. Because of the relationship between sensory arousal and meaningful social interaction, a study documenting acoustic zones could be cross-referenced with preferred seating groups to determine how this influences table selection.

Likewise, a detailed lighting analysis could be used to identify the influence of natural and artificial lighting. While researching patterns of behavior, I noticed that lighting appeared to affect individuals' orientation and seat choice in each coffee-house. I was surprised to discover that individuals did not necessarily situate themselves around windows where they were present in Coffeeology, and there are no windows in the EUC Starbucks. However, patrons consistently tables directly below the windows at Glenwood

Coffee and Books. To gain a complete understanding of the affects of lighting in each coffee-house, I would recommend an in-depth light study be used to measure the quality and impact of natural and artificial light.

With the influx of computer-based engagement by coffee-house patrons, it is clear that access to electrical sockets influences where individuals situate themselves. This appears to influence both table selection and directional orientation. An electrical plan should be cross-referenced in the expanded environmental study to determine if seating selection is influenced by access to electrical power.

Tate Street Coffee House and The Green Bean host scheduled live music and comedy performances, while Glenwood Coffee and Books hosts plays, and serves patrons of its adjacent music venue. Further, the operating hours of Glenwood Coffee and Books are extended to accommodate scheduled entertainment. When live entertainment is present, I recognized that the patron behavior is atypical of traditional coffee-house interactions. Further studies should be conducted to observe the difference in behavioral patterns resulting from external influence in the space.

Coffeeology, Tate Street Coffee, and The Green Bean offer outdoor seating areas, which were not factored into my study of coffee-house interiors. Because my study was conducted during months when outdoor seating experienced little use, a similar observational study could be conducted to determine how patterns interaction shift with increased circulation in and out of the interior space. Likewise, a cross-examination of exterior factors and coffee-house interactions could reveal the role of nature or biophilic

elements in coffee-house interactions. These elements could be translated into coffee-house interiors to facilitate similar types of interactions.

REFERENCES

Alexander, C., Silverstein, M., Jacobson, M., Fiksdahl-King, I., and Angel, S. (1977). *A Pattern Language: Towns, Buildings, Construction.* Oxford University Press, Oxford.

Bandura, A. (1971). *Social Learning Theory.* General Learning Press, New York City.

Barrell, J. (April 01, 2004). Coffee□House Politicians. *Journal of British Studies, 43,* 2, 2 206-232.

Biderman, B. The Social History of Coffee. Retrieved from http://www.cafemagazine.co.uk/blackapollo01.html

Bitgood, S. (2002). Environmental Psychology in Museums, Zoos, and Other Exhibition Centers. *Handbook of Environmental Psychology.*

Borchers, J.O. (2001). A Pattern Approach to Interaction Design. *AI & Soc, 15,* 359-376.

Boren, S., Connell, M.W., Stefl, B. (2010) Proceedings from ACM Interactivity '10: *How the Brain Wants to Learn: Cognitive Science Informing Interactive Exhibit Design.* St. Paul, MN..

Bowen, S. (2010). Critical Theory and Participatory Design.

Buchanan, R. (1991). Review: *Flow: The Psychology of Optimal Experience* by Mihaly Csikszentmihalyi. *Design Issues*, *8 (1)* 80-81.

Betchel, R.B. (1977). *Enclosing Behavior.* Dawden, Huchenson, & Ross, Inc.

Costa, M. (2012). Territorial Behavior in Public Settings. *Environment & Behavior*, *44*(5), 713-721.

Creswell, J.W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Method approaches*. (3rd ed.) Thousand Oaks: Sage Publications.

Creswell, J.W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches.* (2nd ed.) Thousand Oaks: Sage

Cross, N. (2001). Designerly Ways of Knowing: Design Discipline Versus Design Science. *Design Issues,* 17, (3), 49–55.

Csikszentmihalyi, M. (1990). *Flow: The Psychology of Optimal Experience.* New York: Harper Collins.

Csikszentmihalyi, M. (2004). Mihaly Csikszentmihalyi: Flow, the secret to happiness. Retrieved from http://www.ted.com/talks/mihaly_csikszentmihalyi_on_flow.html

Csikszentmihalyi, M., and Csikszentmihalyi, I. S. (1988). *Optimal Experience: Psychological Studies of Flow in Consciousness*, Cambridge University Press, New York.

Csikszentmihalyi, M. (May 2011). *Rules of Engagement.* TEDxU Chigaco. Retrieved from http://tedxtalks.ted.com/video/TEDxUChicago-2011-Mihaly-Csiksz

De Young, R. (1999) Environmental Psychology. In D. E. Alexander and R. W. Fairbridge [Eds] Encyclopedia of Environmental Science. (pp. 223-224) Hingham, MA: Kluwer Academic Publishers.

GAUDIO, R. (2003). Coffeetalk: Starbucks & trade; and the commercialization of casual conversation. *Language in Society, 32,* 5, 659-691.

Goodwill Installs Cafes. (2001). *Retail Merchandiser. 41(8)*, 14.

Groat, L., & Wang, D. (2002). *Architectural Research Methods*. John Wiley & Sons, New Jersey.

Hall, E.T. (1969). *The Hidden Dimension.* Anchor Books, New York.

Handon, J., Zako, R. (Eds). (2005). Proceedings from 5th International Space Synta Symposium. Delft, NH.

Hein, G. (1998). *Learning in the Museum.* Routledge, New York.

Hillier, B. (1999). The hidden geometry of deformed grids: or why space syntax works, when it looks as though it shouldn't. *Environment and Planning B: Planning and Design, 2*, 169-191.

Hillier, B., & Hanson, J. (1989). *The Social Logic of Space.* Cambridge University Press, London.

Hillier, B. (2007). *Space is the Machine.* Space Syntax, London.

Kaya, N., & Burgess, B. (2007). Territoriality: Seat Preference in Different Types of Classroom Arrangements. *Environment and Behavior, 39,* 6, 859-876.

Kozulin, A., Gindis, B., Ageyev, V.S., Miller, S.M. (2003). *Vygotsky's Educational Theory in Cultural Context.* Cambridge University Press, UK.

Klinger-Vartabedian, L., & Vartabedian, R. A. (1992). Media and discourse in the twentieth-century coffeehouse movement. *Journal of Popular Culture, 26,* 3.

Kopec, D. (2006). *Environmental Psychology for Design.* New York City.

Kovalik, C., King, P. Design Elements and Principals. *Visual Literacy.* Retrieved from: http://www.educ.kent.edu/community/vlo/index.html

Lang, J., Burnette, C. Moleski, W., & Vachon, D. (1974). *Designing for Human Behavior.* Dawden, Hutchinson, & Ross.

Laurier, E., & Philo, C. (2007). A parcel of muddling muckworms': revisiting Habermas and the English coffee-houses. *Social and Cultural Geography, 8,* 2, 259- 281.

Lerner, R.M. (2002). *Concepts and Theories of Human Development (3rd Eds.).* Lawrence Erlbaum Associates, Inc. Mahwah, New Jersey.

Le Clus, M. & Volet, S. (2008). Affordances and constraints on informal learning in the workplace. *Proceedings of the 11th International Consortium for Experiential Learning (ICEL) Conference* , Sydney Australia.

Lorsbach, A., & Tobin, K. (1997). Constructivism as a Referent for Science Teaching. Retrieved from http://www.exploratorium.edu/ifi/resources/research/constructivism.html

Mackenzie, N., & Knipe, S. (2006). Research dilemmas: Paradigms, methods and methodology. *Issues In Educational Research,* (16)2, 193-205.

Marsick, V.J., & Watkins, K.E. (2001). Informal and Incidental Learning. New Directions For Adult & Continuing Education, (89), 25.

Marsick, V. J., and Watkins, K. (1990). *Informal and Incidental Learning in the Workplace.* London and New York: Routledge.

Manzo, L.C., ad Perkins, D.D. (2006). Finding Common Ground: The Importance of Place Attachment to Community Participation and Planning. *Journal of Planning*

Literature, (20)4, 335-350. Retrieved from http://www.informedesign.org/Rs_detail.aspx?rsId=3100

McFall, B. S. (1998). *Personal Resource Systems Management (PRSM): A Proposal for Interactive Practice*, Unpublished Master's Thesis, Virginia Polytechnic Institute and State College, Blacksburg.

McFall, B.S. and Williams, S. (2004). Systems Language for E-Democracy: Personal Resource systems Management (PRSM) as Model and Action Research

McFall, B. S. (2003). *Future Promise: Designing Personal Resource Systems Management as a Platform for Quality of Living and Learning*, Unpublished Doctoral Dissertation, Saybrook Graduate School and Research Center, San Francisco.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks: Sage Publications.

Moss, P. (2002). *Feminist Geography in Practice: Research and Methods*. Malden Mass.: Blackwell Publishers, Oxford UK.

Nussbaumer, L.L. (2009). *Evidence Based Design for Interior Designers.* Fairchild Books, New York.

O'Donnell Wicklund Pigozzi and Peterson, Architects Inc., VS Furniture., & Bruce Mau Design. (2010). *The third teacher: 79 ways you can use design to transform teaching & learning*. New York: Abrams. Patton, M.C. (2002). *Qualitative R\ Research and Evaluation Methods.* Sage Publications, Inc.

Patton, M. Q. 2005. Qualitative Research. Encyclopedia of Statistics in Behavioral S Science.

Powell, K.C., & Kalina, C.J. (2009). Cognitive and Social Constructivism: Developing T Tools for an I Effective Classroom. *Education, 130(2).* 241-250.

Rainbolt, G.N, Benfield, J.A., & Loomis, R.J. (2012). Visitor Self-Report Behavior Mapping as a Tool for Recording Exhibition Circulation. *Visitor Studies, 15(2),* 203-216.

Rendell, J., Penner B., & Bornen, I. (2000). *Gender Space Architecture: An Interdisciplinary Introduction*. Routledge.

Rengel, R. (2007). *Shaping Interior Space (2nd Eds.).* Fairchild Publications, New York.

Romme, A.G.L. (2003). Making a Difference: Organization as Design. *Organization Science, 14(5),* 558-573.

Salingaros, N.A. (2000). The Structure of Pattern Language. *Architectural Research Quarterly, (4)*, 149-161.

Sawyer, R. (2003). *Creativity and Development*. Oxford University Press.

Sommer, R. (1969). *Personal Space: The Behavioral Basis of Design.* Prentice Hall, Inc. New Jersey.

Steup, M. (2011). Epistemology. *The Stanford Encyclopedia of Philosophy.* Edward N. Zalta (ed.). Retrieved from http://plato.stanford.edu/archives/win2011/entries/epistemology/

Sully, A. (2012. *Interior Design Theory and Process.* A & C Black, *London.*

Swann, C. (2002). Action Research and the Practice of Design. *Design Issues*, *18(2),* 49-61.

Thurmond, V. (2001). The point of triangulation. *Journal of Nursing Scholarship, 33*(3), 254–256.

Tumanan, M. A. R., & Lansangan, J. R. G. (2012). More than just a cuppa coffee: A multi-dimensional approach towards analyzing the factors that define Place attachment. *International Journal of Hospitality Management, 31(*2), 529-534.

US Census.2010. *State and Country Quick Facts: The City of Greensboro.* Retrieved from: http://quickfacts.census.gov/qfd/states/37/3728000.html

Waxman, L. (2006). The Coffee Shop: Social and Physical Factors Influencing Place Attachment. *Journal of Interior Design, 31(3),* 35-53.

Wurgaft, B. A. (2003). Starbucks and Rootless Cosmopolitanism. *Gastronomica: the Journal of Food and Culture, 3,* 4, 71-75.

APPENDIX A

INTERACTION ANALYSIS

A. Levels of interaction

Level 1: No interaction or brief eye contact/ smile

Level 2: Single word interaction

Level 3: Brief Conversation

Level 4: Complex interaction or lengthy conversation

B. Initiation Points:

1. Holding door at entrance/exit
    a. Level 1: Polite smile
    b. Level 2: Verbal expression of gratitude
2. Cashier greets customer
    a. Level 2: Brief verbal acknowledgement from customer to cashier
    b. Level 3: Cashier engages customer for order
    c. Level 4: Customer has questions or concerns during order process
    d. Level 3-4 : Barista has questions or comments about order
3. Customer waits for order
    a. Level 1: The customer picks up order without further interaction
    b. Level 2: The customer and Barista verbally express gratitude or pleasure
    c. Level 3-4: The customer or barista verbally expresses concern

4. Condiments station
    a. Level 1: Customer independently prepares beverage
    b. Level 2: Customer verbally acknowledges another patron or individual
    c. Level 3: Customer engages in brief conversation with another patron
5. Customer takes a seat
    a. Level 1: Customer sits in silence or physically acknowledges neighboring patrons
    b. Level 1: Customer engages attention in television or personal computer.
    c. Level 2: Customer pardons his or herself or exchanges brief verbal acknowledgement with another patron.
    d. Level 3: Customer engages in brief conversation with anot her patron.
    e. Level 4: Customers engage complex conversation with fellow patron or patrons.
6. Customers discard trash
    a. Level 1: Customers discard trash in silence or acknowledge those around them.
7. Customer visits restroom facility
    a. Level 1: No interaction occurs
    b. Level 2: Customer excuses him or herself from his or her party.
    c. Level 2: Customer acknowledges passerby waiting in line.

Level 3: Customer engages in brief conversation while waiting in line.