THE RELATIONSHIP BETWEEN PREFERENCES FOR FAMILIAR DESIGN ELEMENTS AND PRINCIPLES AND PLACE ATTACHMENT OF WOMEN LIVING IN CONTINUING CARE RETIREMENT COMMUNITIES

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CHAPTER I

INTRODUCTION

According to the Administration on Aging, in 2006 approximately 37.3 million people in the United States were aged 65 or older, comprising 12.4% of the population. By the year 2030 this sector is expected to make up 20% of the total population of the United States (http://www.aoa.gov/prof/Statistics/statistics.asp). Of these Americans, the majority are women, outliving men by an average of 7 years (Older Americans, 2007: Key Indicators of Well-Being). Often, women in this cohort become unable to continue to live in their current homes for various reasons and may make a decision to move to a community living facility, such as a Continuing Care Retirement Community (CCRC). "Continuing care retirement communities permit residents to remain in one facility, while moving between levels of care as their needs require: independent living (IL), assisted living (AL), and nursing living (NL)" (Shipee, 2009, p. 418). Continuing Care Retirement Communities consist of varying levels of living options and normally include independent living, assisted living, and nursing and/or memory care facilities on the same campus (http://www.aarp.org/families/housing_choices/other_options/a2004-02-26-retirementcommunity.html). This study explores preferences for interior design elements and principles among residents of CCRCs living in independent living (IL) and assisted living facilities (ALF) only.

Older adults who choose to live in a community living facility typically select a facility that reflects personal preferences in the design of the facility, suggesting a personal connection to that facility. Women in particular experience a greater sense of belonging when they have a feeling of attachment to a place (Bernard, Bartlam, Sim & Biggs, 2007). These attachments are formed from familiarity with *building elements* incorporated into their environment (Regnier, 2002). Examples of building elements are fireplaces, columns, stairs and crown molding (Pile, 2007). Often these building elements are similar to those elements found in particular areas of their former residences, such as in entries, living areas and dining areas (Marsden, 2005). Building elements incorporate attributes known as interior design elements and principles. Design elements and principles can contribute to the ability to distinguish one space from another. Design elements and principles further define the building elements, providing a sense of uniqueness and character to the environment.

Interior Design Elements and Principles

A built environment can consist of many interior design elements and principles. The design elements and principles of color, light, line, mass, form, texture, pattern, shape, space, scale, proportion, balance, rhythm, emphasis, and harmony (Nielson & Taylor, 2007) are tools used in distinguishing overall characteristics of building elements (Aranyi & Goldman, 1980). Interior designers use these design elements and principles in conjunction with each other to generate solutions to design problems as well as in the evaluation of the outcome of designs. Aranyi and Goldman (1980) gathered data in long-term care residences on 11 components contributing to more successful design of

facilities. The data included the design elements and principles of space, scale, color and light which were included in the present study. Marsden's 2005 study of Assisted Living Facilities identified these and other elements and principles as important characteristics to successful facility design for older adults. These include texture, pattern, balance, proportion, emphasis, mass, and form which were included in the present study. Along with these previously mentioned elements and principles, line, rhythm, and harmony were considered as indicators of design in the present study.

Interior design elements and principles, and their role in defining building elements, may influence an individual's overall attitude toward a particular space. Familiar design elements and principles contribute to a feeling of environmental fit among older adults (Brent, 1999). Design elements and principles encourage or discourage use, promote socialization, and foster attachment to the place (Sugihara & Evans, 2000). "Geographical space is experienced as *place* through long-term involvement in a particular location. The experience of place is primarily defined by its affective character; a strong, long-lasting emotional attachment of the person to a location" (Giuliani & Feldman, p. 276-8). This study applies the constructs of preference for familiar design elements and principles (familiarity) and place attachment in Continuing Care Retirement Communities.

Theoretical Foundation

There are two components that comprise the theoretical foundation for this study, the Theory of Ecological Aging and the Continuity Theory. These theories were used to develop the rationale and need for this study.

Theory of ecological aging. The ecologic theory of aging was developed by M. Powell Lawton in an effort "to explain the impact of the environment on the adult aging process" (Wister, 1989, p. 269). More specifically, Lawton's primary concern was to inform the design of environments for the aging population in such a way that would assure that aging residents' needs would be met (Lawton, 1977). Lawton describes the needs of individuals in terms of *competence* and *environmental press.* Competence "describes essentially what lies within the person" (p. 8). Environmental press depicts "those aspects of the environment which are known to be behavior-activating to some individuals" (p. 8) and accounts for the effect an environment can have on fulfilling those needs. The balance that results from competence and environmental press working positively or negatively together is known as *environmental fit*. As Moore (2005) explains, environmental fit is a concept "which may be defined as the degree to which the needs of a person are congruent with the capability of the environment to meet those needs" (p. 331).

Place attachment is fostered in part through congruence of familiar cues of an environment. "The physical environment, e.g. spatial openness as well as enclosure and possessions, contribute to older adults' place attachment (Eshelman & Evans, 2002, p. 2). Proshansky (1978) further explains the meaning of place attachment as:

> those dimensions of the self that define the individual's personal identity in relation to the physical environment by means of a complex pattern of conscious and unconscious ideas, beliefs, preferences, feelings, values, goals, and behavioral tendencies and skills relevant to this environment (p. 155).

When the needs of the users of the space are in congruence with the demands of the environment, the resulting balance (positive fit) that occurs is directly related to the successful design of a built environment (Bunker-Hellmich, n.d.) which in turn can promote place attachment.

Continuity theory. Continuity theory, "is a theory of continuous adult development, including adaptation to changing situations" (Atchley, 1999, p. 1). As Hooyman and Kiyak (2005) explain, "according to continuity theory, individuals tend to maintain a *consistent* pattern of behavior as they age, substituting similar types of roles for lost ones and maintaining typical ways of adapting to the environment" (p. 289). Continuity theory suggests that over the course of time, individuals will successfully adapt to constantly changing circumstances through enduring patterns of personal constructs based on prior experiences (Atchley, 1999), also known as familiarity.

According to Marsden (1997), "familiarity results when characteristics of an environment have been frequently encountered before and there is a fit between current stimulation and an existing internal representation" (p. 29). Low and Altman (1992) contend that familiarity with the environment establishes a setting for connecting the past to the future. As Regnier (2002) explains, "Environments that use historical reference and solutions influenced by local tradition provide a sense of the familiar and enhance continuity" (p. 46.) Familiarity, therefore, may contribute to successful adaptation to a new environment through a continued use of familiar cues.

Purpose of the Study

Over 63% of the residents living in CCRCs are women (ARAMARK, 2002). Very little research has been done to investigate the *preferences* that women living in CCRCs have for interior design elements and principles incorporated into their new residences and the role *familiarity* plays in relation to on their preferences for those design elements and principles. There is a lack of research focusing on the role of interior design elements and principles in fostering *place attachment* of women who live in CCRCs. Therefore, the purpose of this study was to describe the preferences of female residents of CCRCs toward familiar design elements and principles as described in the context of place attachment. Familiar design elements and principles for both former and current living situations contributed to this description. The preferences were described in the context of place attachment of the women living in CCRCs.

Objectives

The objectives of the study were to:

1) Investigate female CCRC residents' preferences for design elements and principles in their former and current residences as a means for identifying familiarity with design elements and principles;

2) Examine the similarities and differences between the residents' perceptions regarding design principles and elements and principles of their former and current residences; and

3) Explore the relationship between the residents' perceptions of design elements and principles and place attachment of women CCRC residents based on Williams and Roggenbuck's (1989) Place Attachment Scale.

Research Questions

Based on the purpose of the study and the Q-methodology approach employed, the following research questions were identified.

1. Research Question One: What are the descriptions of design elements and principles for CCRC residents as reflected in their current and former residences?
2. Research Question Two: In what ways do perceptions of former residences relate to perceptions of current residences?
3. Research Question Three: Is there a relationship between participants' place attachment scores for their current residence and their preferences for elements and principles of design as reflected in the descriptions of design elements and principles (factors) that resulted from analysis of responses to Question One?

Assumptions

It was assumed for this study that persons surveyed would have an interest in the design and/or features of the CCRC in which they are living. It was also assumed that all persons surveyed were capable of recalling and clarifying their perceptions of the spaces that are the focus of the study.

Limitations

The limited number of CCRCs from which the sample was drawn is one limitation to the study; only three CCRCs in Oklahoma City, Oklahoma area were sampled. The small population surveyed is a limitation to the study. Conclusions resulting from the study are not generalizable to men, or to men and women in the larger Continuing Care Retirement Community population of the United States.

Definitions Related to Q-methodology

Q-methodology. A research methodology that "provides a foundation for the systematic study of subjectivity, a person's viewpoint, opinion, beliefs, attitude, and the like" (Brown, 1993; Van Exel, 2005).

Concourse. "A set of statements developed around a topic" (Smith, 2000, p. 323) as applied in Q-methodology process.

Q-set. Items to be sorted by the participant (Robbins, 2005) such as statements, or photographs.

Condition of Instruction. "The contextual statement against which the Q-set is sorted by respondents; for example, 'Most agree/Most disagree' or 'most like myself/Most unlike myself'" (Robbins, 2005, p. 209).

Q-sort. "The ordered ranking of the Q-set by an individual participant usually using a quasi-normal distribution, expressing the individual's ranking of individual statements/items relative to the condition of instruction (e.g. 'most agree')" (Robbins 2005, p. 209).

PQ-method. "PQ-method is a statistical program taylored to the requirements of Q studies." (http://www.lrz-muenchen.de/~schmolck/qmethod/index.htm)

P Set. "The sample of persons" (Smith, 2000, p. 333) in the Q-methodology study.

Definitions Related to Study

Aging in Place. "A transaction between an aging individual and his or her residential environment that is characterized by changes in both person and environment over time, with the physical location of the person being the only constant" (Lawton, 1990, p. 288).

Assisted Living Facility (ALF). A model of housing aimed at older adults who need some assistance, but not full-time care (Hooyman & Kiyak, 2005).

Continuing Care Retirement Community. A facility that provides a continuum of care ranging from independent living to assisted living to skilled nursing, allowing residents to age in place (Krout, et al, 2002).

Environmental Press. The potential of the environment to facilitate or impede activities that are sought, valued, or necessary for older people (Kendig, 2003).

Familiarity. Characteristics of an environment that have been regularly encountered before and result in "a fit between current stimulation and an existing internal representation" (Marsden, 2005, p. 39).

Place Attachment. "The strength and types of affective bonds between person and place" (Cutchin, Owen, & Chang, 2003, p. S236); "a process that provides personal

and group identity, fostering security and comfort with one's immediate surroundings" (Sugihara & Evans, 2000, p. 401).

CHAPTER II

REVIEW OF LITERATURE

Continuing Care Retirement Communities (CCRC), which include independent living, assisted living, and skilled care nursing, are becoming the fastest growing housing options for older adults in the United States (Sugihara & Evans, 2000). Several factors, such as an aging population, housing preferences other than nursing homes, a desire to live independently, and public policy regarding nursing homes, have contributed to the increased interest in CCRCs (Krout, et al, 2002). For the purpose of this study, only independent living facilities (ILF) and assisted living facilities (ALFs) were included. Within the CCRC, ILFs provide an independent living environment and within ALFs some services are provided for activities of daily living (ADLs)..

"Each level of care for a CRCC is regulated with the exception of the independent living"
(http://www.seniorliving.net/TypesOfCare/ContinuingCareRetirementCommunity). Based on a standard of long-term care, ALF is a philosophy of care rather than a building type. As such, ALF is a model of housing aimed at older adults who need some assistance, but not full-time care (Hooyman & Kiyak, 2005). Because ALFs are not federally regulated, defining them has been a challenge and definitions often vary from state to state.

In their model of ALFs, Hawes, Phillips, & Rose (2000) define assisted living as philosophical tenets "based on the premise that assisted living's goal is to meet customers' scheduled and unscheduled needs, promote independence, autonomy and dignity among consumers, and enable residents to age in place in a home-like environment". Imamoglu (2007) states "…in her model of assisted living, Wilson (1990) identified six such attributes involving privacy, dignity, choice, independence, individuality, and homelike surroundings. Thus, the concept of home would be expected to form the conceptual foundation of assisted living" (p. 248). This concept of home could also be applied to the independent living facilities of CCRCs as they are based primarily on the same premise as the ALF except they typically house those who are more active and require less assistance with ADLs. This study concentrates on various spaces of the CCRC's independent living and assisted living employed in home-like settings and on the residents' familiarity with design elements and principles of these settings.

Aging in Place

Recent studies point out that "the vast majority of Americans wish to remain in their homes and their communities as they age" (Lawler, 2001, p.48). This phenomenon, referred to as aging in place, is described by Lawton (1990) as "a transition between an aging individual and his or her environment that is characterized by changes in both person and environment over time, with the physical location of the person being the only constant" (p. 288). As changes occur, it may not be a viable option for older adults to

remain in their current residence either because of declining health, declining living conditions, or both (Regnier, 2002). Many older adults need assistance with activities of daily living (ADL). These ADLs are a measure of functional health and can include tasks such as walking, getting dressed, bathing, using the toilet, eating, and getting in and out of bed or a chair (Hooyman & Kiyak, 2005). For those not able to perform these tasks on a daily basis, some level of assistance may be required. These older adults have options for care such as help from family members, home health care, or moving to some type of congregate living facility that offers assistance, such as a CCRC (Mutchler & Burr, 2003). Choosing the home-like settings of assisted living facilities or independent living "…as a favorable alternative to traditional long-term care, with emphasis on its resident-centered philosophy and non-institutional environment" (Marsden, 2005, p.1) is increasingly becoming a viable option for many older adults. "A survey of consumer needs found that 69% of older adults would prefer to move to a place that provides care services rather than live with family or friends" (Marsden, 2005, p. 10;). Continuing Care Retirement Communities, therefore, have the potential to meet the needs of many older adults by providing housing that is conducive to a resident's independence, autonomy, privacy, and dignity in a residential home-like setting while still providing necessary levels of assistance when needed.

Women in Continuing Care Retirement Communities

The population for this study is women residents in assisted living facilities. Women make up approximately 63% of the population of residents living in CCRCs (Wilson, 2007). Regnier (2002) points out that "because women outlive men in this

country by nearly seven years, it is no surprise that the majority of people in assisted living are female" (p.15). Hawes and Phillips (2000) report that residents living in long-term care facilities were mostly white, widowed females who were relatively well-educated and relatively affluent. Of these residents, 70% had moved from their own home into a CCRC, and a large percentage of women in this age cohort were full-time homemakers. Most of the current literature on CCRCs has focused on non-gender specific data. "Although women represent the majority of the elderly population, they are generally overlooked in both gerontological literature and in provision of services" (Seipke, 2002, p. 6). The sample for this study, therefore, came from the population of these affluent, relatively well educated women, who are often disregarded as the sole focus of studies on assisted living.

The current cohort of older women has had strong ties to their homes and possessions largely because of the traditional gender role as full-time homemakers that many of these women held (Shenk, Kuwahara, & Zablotsky, 2004). Because of these strong ties, this cohort of women tends to identify itself closely with the home environment. Leith (2006) points out that older women incorporate a unique meaning of home through their past and current living environments. Hauge and Kolstad (2007) state "People express themselves and perceive others not only through behaviour or verbal statements, but also through possessions and physical environments (Goffman, 1959). As a result, a dwelling can be seen as an expression of identity, both for oneself and others" (p. 272-273). Women become attached to their homes as a result of strong emotional ties to their environment and therefore may hope to find a similar attachment when they relocate to a CCRC.

Familiarity with an Environment

One way that older women can identify with a new living environment is through experiencing a sense of familiarity with design elements and principles of that new environment. Familiarity is the process through which people acquaint themselves with their environment (Inalhan & Finch, 2004, p.123). Becoming acquainted with an environment may trigger recollections of past residences for women residents of CCRCs, which in turn may enable these women to feel more at home in the facility.

Feeling at home is described by Seamon (1979) as "the usually unnoticed, taken-for-granted situation of being comfortable in and familiar with the everyday world" (p.70). Creating a home-like design of shared social spaces can become a challenge given the fact that many residents with varying preferences will occupy the spaces. According to Rubinstein and Parmelee (1992) individuals construct their own ideas of home using general rules based on cultural meaning regarding "room function, furniture, decoration, and objects, thus yielding a very personalized place that nonetheless conforms to collective notions of the home" (p. 151). Finding a common ground with which residents can identify may be a key in determining the level of attachment the residents have toward their CCRC.

Since the interior environment can play an important role in establishing a sense of home, the interior design elements and principles of CCRCs may then become vehicles through which women living in CCRCs form a sense of familiarity. "Furnishings (furniture, fabric patterns, colors) with familiar sensory cues allow an older adult to immediately feel comfortable in a new surrounding" (Zavotka & Teaford, 1997, p. 4). Familiarity with one's surroundings leads to developing a sense of order which is a significant

characteristic of place attachment (Shenk, Kuwahara & Zablotsky, 2004). Familiar symbols of home, such as building elements characterized by specific design elements and principles, could contribute to female CCRC residents' sense of feeling at home in their current residence.

Place Attachment

Place attachment, according to Rubinstein & Parmelee (1992), "is a set of feelings about a geographic location that emotionally binds a person to that place as a function of its role as a setting for experience" (p. 139). Brown and Raymond (2007) suggest that place attachment is a measurable construct based on two factors, place identity and place dependence.

Place identity is an affective element signifying the meaning one derives from a place while place dependence is a functional element that reflects significance of a place in supporting the intended use of that place (Brown & Raymond, 2007). "Place identity (an emotional attachment) refers to the symbolic importance of a place as a repository for emotions and relationships that give meaning and purpose to life" (Williams & Vaske, 2003, p. 831). "Place dependence (a functional attachment) reflects the importance of a place in providing features and conditions that support specific goals or desired activities" (Williams & Vaske, 2003, p. 831). When place identity and place dependence are in equilibrium, there is an increased chance a person may form an attachment to a place.

According to Low and Altmann (1992), a stronger level of place attachment has been linked to greater residential satisfaction and adjustment among older individuals

after relocation. Researchers suggest the three processes of place attachment as seen in Zavotka and Teaford's social space attachment model can contribute to older adults' satisfaction with their residential environment. "Privacy, continuity with the past, and personalization have been used to explain place attachment in older adults through social-centered, person-centered, and body-centered processes" (Zavotka & Teaford, 1997, p. 5).

The social-centered process addresses issues of privacy "associated with the location of the space within the building (Regnier & Pynoos, 1987) and an individual's perception of privacy (Howell, 1976)" (Zavotka & Teaford, 1997, p. 5). Residents wanting to socialize with their family and friends often do so in their private rooms or apartments as an act of privacy (Zavotka & Teaford, 1997). This construct, for the purpose of this study, was used to determine a person's sense of privacy only in the social areas, since residents' private spaces, such as bedrooms were not assessed. A social area that supports a person's perceived ability to interact privately with others can bolster the social-centered process.

The person-centered process addresses the meaning of personal possessions as a link to the past, which includes objects that are reminiscent of residents' previous homes, such as accessories. The body-centered process addresses issues of familiarity of one's surroundings (Zavotka & Teaford, 1997). Rubinstein (1989) explains that the body-centered processes include visual cues such as the style of furnishings and the colors used in former homes. It is this body-centered process that allows many older adults to feel at home (Rubinstein & Parmelee, 1992). The person-centered and body-centered processes

are of particular interest to this study in that these factors connect familiarity to the interior design of a place.

Shenk, Kuwahara, and Zablotsky (2004) explain that attachments are made over a course of time. However, other indicators, specifically familiar objects and physical features, can act as catalysts in establishing a connection to a place in a relatively shorter amount of time. "The establishment of a sense of place attachment seems particularly important for older individuals who have left behind their residences, in some cases after a lifetime of inhabitance" (Sugihara & Evans, 2000, p. 401). Providing familiar interior elements characterized by specific design elements and principles in CCRCs may offer cues that women living in CCRCs identify as homelike and thus enable them to form an attachment to the environment in a shorter amount of time.

Continuing Care Retirement Community as a Product

Design elements and principles applied to the interior spaces of CCRCs communicate a particular character, enabling them to be marketed as a product to the consumer, typically potential CCRC residents and their families. "The living environment is an important selling feature of assisted living, with architectural elements designed to enhance marketability" (Carder & Hernandez, 2004, p. S63). The elements and principles that are reminiscent of former residences can provide a sense of familiarity to potential consumers.

Many older consumers delay moving as long as possible. When they decide to move, they want a place that is residential in character and provides a friendly and aesthetically pleasing atmosphere (Regnier, 2002). Design elements and principles

become important factors in establishing an aesthetically pleasing environment. The design of the CCRC, with its goal of providing a homelike environment, enhances the marketability of the CCRC product (Carder & Hernandez, 2004). Mature consumers who are aware of the various products offered by different CCRCs usually choose a facility based on the available features that they feel will enhance their standard of living (Gibler, Lumpkin & Moschis, 1997). Incorporation of design elements and principles in a CCRC that contribute to residents' perceptions of familiarity can play an important role in providing a more marketable product to older consumers.

Place attachment to a new surrounding occurs when the purpose and visual stimuli are similar to a resident's previous home (Zavotka & Teaford, 1997). Inalhan and Finch (2004) describe place attachment as both a product and a process. As a process, *place attachment* is dynamic, providing reasons for attachment as the previously mentioned social-, person- and body-centered processes express. It is "the appropriation of space via involvement with the local area" (Inalhan & Finch, p. 126). However, as a product, place attachment becomes an outcome through "an emotional bond with a specific place" (Inalhan & Finch, p. 126). Inalhan and Finch point out the importance of characteristics of a place that influence the feelings of attachment people develop to that place. Design elements and principles are characteristics that can determine the ambience of a place and may play a major role in the way a place is perceived, thus contributing to residents' attachment to that place.

Design Elements and Principles

The lack of federal regulation of CCRCs has produced a variety of different types of CCRC facilities. According to Imamoglu (2007), however, CCRCs have two main objectives: 1) to provide flexibility of care and, 2) to provide a homelike environment. Some CCRC residents may need some level of assistance with one or more activities of daily living (ADL) in order to remain somewhat independent. Physical building characteristics such as ramps, handrails, absence of stairs and increased lighting, of a CCRC environment contribute to meeting residents' needs of independence in a homelike setting (Kaya, Webb & Miller, 2005). However, those building characteristics, although useful to many residents, may not be familiar to residents who have moved from homes that did not include support elements and principles such as those described above. Incorporating design elements and principles to enhance those building characteristics may contribute to familiarity.

As previously stated, design elements and principles include color, light, line, mass, form, texture and pattern, shape, space, scale, proportion, balance, rhythm, emphasis, and harmony (unity and variety) (Nielson & Taylor, 2007). The following provides a brief explanation of each. For clarity, some elements and principles are defined in comparison to other elements and principles.

Elements

Color. Color is an emotional element of design and carries different meanings for different cultures. For this study, color will pertain to the culture of the United States. Color is considered to appear as warm or cool. Warm colors, such as reds, oranges and

yellows, tend to be stimulating and can energize a space. Cool colors, such as blues, greens and violets, tend to be more calming and soothing (Nielson & Taylor, 2007; Regnier, 2002). As a rule, lighter colors tend to make a space appear larger and darker colors will enclose a space. Zavotka and Teaford's (1997) model of color frequencies of CCRCs and older adults' former residences categorizes colors into three types of use in rooms, background, primary and secondary. The first, background color, was that color used in larger quantities, as on walls. The primary (or main) color, the second most used color, was found mainly in floor and window treatments. Secondary color was the third most prominent color and was typically used in furnishings. Utilizing colors consistent with former residences may lead to an increased sense of familiarity for residents living in a CCRC. However, providing some harmony between those familiar colors may tend to produce a more stimulating environment for the residents.

Light. Light affects all other elements and principles and can alter the perception of a space through its manipulation for effect or emotion (Kilmer & Kilmer, 1992). "Without light, there would be no visible form, color, or texture" (Slotkis, 2006, p.30). Spaces can appear larger or smaller, inviting or inhospitable depending on the type of light found in the space. Two types of light, natural light and artificial light, are found in interior environments. Natural light in the form of sunlight includes the full spectrum of colors. Though not predictable, sunlight is the most preferred form of light (Nielson & Taylor, 2007). As individuals age, both natural and artificial light becomes increasingly important for the safety and well-being of the users of the space. Warm light, such as natural or incandescent lighting, adds a residential appearance while fluorescent lighting

tends to appear institutional. However, a combination of both assists in supplying the proper light levels needed for older adults whose vision may be impaired.

Line. A connection between two points, line is considered to be the most fundamental element of design (Kilmer & Kilmer, 1992). Lines may be horizontal, vertical, straight, curved, angular, or any combination of these. Line encloses a space, conveys form, and can suggest direction and movement. Straight lines imply strength; diagonal lines suggest energy and activity; and curved lines suggest movement (Kubba, 2003). "A careful balance of line quality and direction is imperative to a room's feeling of comfort and harmony" (Kubba, p. 134).

Space. Space consists of open and closed areas created by walls, floors, ceilings, and furnishings, and can be either negative (open) or positive (closed) (Nielson & Taylor (2007). "Space has physical, visual, emotional, psychological, implied, functional, planned, and aesthetic connotations" (Kilmer & Kilmer, 1992, p. 97). According to Zavotka and Teaford (1997), if spaces do not function well, then residents are not likely to form an attachment to it, which in turn will deter residents from using that space.

Shape, form and mass. Shape is the two dimensional outline of an object, such as a circle, square or rectangle. Form is three-dimensional, having volume such as a cone, cube, or sphere. Mass is the three-dimensional form that exhibits volume, dimension, and weight (Nielson & Taylor, 2007). "The manipulation of space creates form, and, in turn, form gives space dimension and mass" (Kilmer & Kilmer, 1992, p. 104).

Texture. Texture, the surface quality of an object, includes tactile as well as visual characteristics (Kubba, 2003). Smooth surfaces tend to appear more formal and

rough surfaces tend to appear more casual. Using contrasting textures is preferable when the intent is to create a warm, welcoming interior (Nielson and Taylor, 2007), which is a desirable characteristic in CCRCs.

Pattern. Neilson and Taylor (2007) describe pattern as "the arrangement of forms or design to create an orderly whole" (p. 70). Pattern can be created by repetitive motifs and forms, as in printed or woven textiles, carpeting, wood flooring, floor tiles, bricks, wall coverings, and carved furniture (Kilmer & Kilmer, 1992; Nielson & Taylor). Patterns that are familiar to older adults allow them to feel more at ease sooner in their new surroundings (Zavotka & Taylor, 1997).

Principles

Scale. Scale is referred to as the relative size of an object in comparison to a standard, such as the human figure (Kilmer & Kilmer, 1992). According to Kubba (2003), color, texture, and pattern have an influence on scale. The scale of an object, for instance a chair, a pattern, or a room, can be defined as large, medium or small (Nielson & Taylor, 2007). When considering scale in a housing type such as a CCRC, Marsden (2005) emphasizes the importance of using a scale that relates to the consumers of the space.

Proportion. According to Kilmer and Kilmer (1992), proportion is closely related to scale. Proportion is the relationship of the parts of an object to the whole, while scale is the relationship of an object to other objects (Nielson & Taylor, 2007). Similar considerations to scale need to be addressed when using proportion in a CCRC.

Balance. Visual balance is "related to the apparent perceived relative weights of objects in architecture and interiors" (Kilmer & Kilmer, 1992, p. 114). Balance is achieved through the symmetrical, asymmetrical, or radial arrangement of components (Nielson & Taylor, 2007). Balance can promote stability and security in an environment.

Rhythm. Rhythm is defined by Nielson and Taylor (2007) as the "flow of elements, usually organized according to a scheme such as repetition or alternation, progression or gradation, transition, opposition or contrast, or radiation" (p. 58), and is considered a major part of surprise or emphasis through expectation and anticipation.

Emphasis. Also know as a focal point, emphasis creates a relationship of dominance and subordination when an area or object is accented more than others (Kilmer & Kilmer, 1992). According to Kubba (2003), each room should have only one major area or object of emphasis to create interest, thus preventing boredom.

Harmony. Harmony is attained through unity and variety to create a pleasing whole (Nielson & Taylor, 2007). Unity is oneness whereas variety is interest and diversity (Nielson & Taylor).

Style

"Popular culture is a term used to represent phenomena that are deemed to be preferred by informal consensus within the mainstream of a given culture" (http://en.Wikipedia.org/wiki/Popular_culture). Popular culture is manifested in preferences and acceptance or rejection of features in areas such as cooking, clothing, consumption, design and other areas (http://en.Wikipedia.org/wiki/Popular_culture). While there are classical definitions for features of furnishings, accessories, and other

interior products, there are also terms used in popular culture that are both commonly used and accepted by the consuming public. In the field of interior design, furniture is categorized into a particular style depending on its design characteristics. Traditional, provincial, transitional, modern and contemporary are some of the most recognizable names for furniture and design styles. Residential interiors often incorporate one of these as a dominant style. For the purpose of this study, regional popular culture descriptions, local to the Central Plains geographical area, were used to describe style . Only three of these familiar furniture styles, traditional, transitional, and contemporary, were addressed.

Traditional style. Traditional, or traditional style, is "a term usually applied to a style of a bygone age, in contrast to a contemporary or modern style" (Pegler, 2006, p. 265). As Elsasser (2004) notes, "traditional furniture designs are adapted from those of cabinetmakers and artisans of the 17th, 18th, and 19th centuries" (p. 220). In this region, Traditional style might be viewed as designs that imitate the works of historic periods (Pile, 2000) and in some cases may include features such as more ornamentation than one might see in contemporary style furnishings

Contemporary style. Contemporary style, as evidenced in the Central Plains geographical area, includes straighter and simpler lines and employs very little, if any, ornamentation. Advances in technology in the late 19th century made possible the use of a variety of materials such as wood, plastic, glass, chrome and steel to design furnishings that are "simple, graceful, versatile, and easy to maintain" (Elsasser, 2004, p. 221).

Transitional style. Transitional style "combines elements already established with those newly appearing" (Pegler, 2006, p. 265,). Regionally, transitional style is

often viewed as a combination of both traditional and contemporary styles. Clean straight lines are merged with warmer tones and materials to produce this simple yet elegant style.

Zavotka and Teaford (1997) clarify "that assisted living furnishings do not need to be exactly like residents' previous homes but simply may provide similar perceptions" (p. 4) and that many residents living in CCRCs have a greater familiarity with a traditional style than with contemporary style.

"The arrangement of furniture should be planned to accommodate appropriate activities in the amount of space available" (Nielson & Taylor, 2007, p. 210). Furnishings too large or too small for the size of the space and the intended function may fail to contribute to a residents' understanding of the purpose of the space which may in turn prolong any attachment to the place.

This study concentrated on the social spaces in CCRCs. Social space can include common spaces that are shared by residents as well as guests and staff, but also include spaces within an individual's residence that are used for socialization. Residents are encouraged to gather in social spaces for entertainment and socialization in order to develop a sense of becoming "at home" in the CCRC. Lounges, living rooms, dining rooms, or places in which individuals socialize become important avenues for adjustment to the new residence, which in turn can promote place attachment (Zavotka & Teaford, 1997, p. 2). According to Marsden (2005) social areas function best when familiar cues, such as furniture style and color, are taken into account.

According to the constructs of the theory of ecological aging, when environmental fit (the balance between environmental press and competence) is achieved, the needs of the residents are met. The ability of CCRC residents to adapt to their new surroundings using familiar cues through a balance of environmental press and competence may lead to place attachment. In continuity theory, over the course of time, individuals adapt to new environments through familiarity based on prior experiences (Atchley, 1999). Acting as cues for familiarity, application of the design elements and principles may, therefore, advance place attachment in residents of CCRCs.

Although recent scholarship has examined the meaning of consumerism in long-term care facilities (Carder & Hernandez, 2004), the literature is based on a consumer marketing perspective and not approached from an interior design perspective. The importance of the interior design of a CCRC is often overlooked in the research literature. This lack of literature covering the effect of design elements and principles on residents of these facilities suggests the need for and importance of this study.

CHAPTER III

METHOD

The purpose of this study was to describe the preferences of female residents of CCRCs toward familiar design elements and principles as described in the context of place attachment. Based on the purpose of this study, the following research questions were investigated.

1. Research Question One: What are the descriptions of design elements and principles for CCRC residents as reflected in their current and former residences?
2. Research Question Two: In what ways do perceptions of former residences relate to perceptions of current residences?
3. Research Question Three: Is there a relationship between participants' place attachment scores for their current residence and their preferences for elements and principles of design as reflected in the descriptions of design elements and principles (factors) that resulted from analysis of responses to Question One?

General Research Process

A sorting technique and its methodological strategies known as Q-methodology, together with a detailed demographic questionnaire and a place attachment questionnaire,

were used to achieve the purpose of this study. Introduced by William Stephenson in 1953, Q-methodology "entails a method for the scientific study of human subjectivity" (McKeown & Thomas, 1988, p. 12). As clarified by Brown (1993), Q-methodology allows for systematically quantifying subjectivity by correlating people rather than items. Stephenson maintained that "beliefs, feelings, opinions, and the like were concrete behaviors that could be communicated and systematically analyzed by Q-methodology" (Smith, 2000, p. 321). Q-methodology was selected for this study due to the nature of the operancy of Q-methodology that allows for exploring the subjectivity of preferences of familiar design elements and principles of women living in CCRCs. The demographic questionnaire included post-sort interview questions that captured comments provided by participants related to their concepts of elements and principles of design, which was instrumental in understanding participant subjectivity and interpreting results.

The place attachment questionnaire (Williams & Roggenbuck, 1989) is an ordinal scale instrument used in determining level of place attachment for each participant. Numerical data were ordered from strongly agree (2) to strongly disagree (-2) to maintain a consistent pattern with the Q-sort ranking for participants. However, the scoring system of the scale was maintained with a Likert-type scale of one (strongly disagree) to five (strongly agree). The dialogue of comments made by participants during the sorting phase of the study and the post-sort interview/questionnaire were used to support the interpretation of the factors generated by the Q-sort technique.

Methodological Steps

The steps used in the systematic process of Q-methodology as explained by van Exel (2005) consist of the following: a) development of the concourse; b) development of the Q-set; c) selection of the P-set; d) administering the Q-sort; and e) data analysis and interpretation.

Development of the concourse. In Q-methodology a concourse is "the possible range of opinions and subject positions on a specific topic" (Robbins, 2005, p. 209). Ten residents of CCRCs were interviewed to gather a concourse of statements regarding their preferences for the interior design of their existing residences as well as the interior design of their former residences. These informal interviews, conducted in two CCRCs located in two metropolitan areas in the Central Plains of the United States, included questions such as "What about this place makes it seem like home to you?" "What, if anything, do you specifically like about the interior design of this place?" "What, if anything, is similar to your previous residence?" Following these informal interviews, ideas and statements provided by the interview participants were organized using the construct of design elements and principles, which included color, light, line, mass, form, texture, pattern, shape, space, scale, proportion, balance, rhythm, emphasis, and harmony. Next, responses of the participants were reviewed to identify concepts (trends) common to multiple participants' responses. These identified trends were used to sample the concourse and were included in the next step, establishing the Q-set. It was determined that the most appropriate method for demonstrating multiple design elements for ease of sorting would be through the use of photographs characterizing familiar design elements and principles.

Development of the Q-set. The Q-set is a sample of the concourse and may consist of statements, photographs, or other objects to be used for ranking by participants (Robbins, 2005). Photographs, rather than statements, were used for the Q-set for this study for the purpose of visual identification. "Colors, photos, music and even odors have been used in Q-sorts to good effect, especially in the examination of aesthetics, environmental perception, and landscape preference" (Robbins, 2005, p. 212). Thirty-six photographs were purchased from an online stock photography source (Shutterstock.com®). The selection of photographs was based on information gathered from the comments and statements about design elements and principles by residents of CCRCs in Oklahoma during the interview stage. Various comments about design elements and principles were highlighted and were then incorporated into the photograph selection process to reflect familiar design elements and principles. Photographs combining each of the design elements and principles were chosen for the 36 item Q set. Each photograph was randomly assigned a number for use in the Q-sort.

Selection of the P-set. The sample of people in Q-methodology is known as the P-set and is not used as a means for generalization to a larger population but rather as a means for revealing all possible viewpoints about a topic (Smith, 2000). The P-set included only female residents of CCRCs. Women, on average, live longer than men and consequently more women than men live in CCRCs; therefore, the data were obtained from 18 female residents of metropolitan CCRCs in Oklahoma City, Oklahoma. Participants were identified as women aged 65 years or older who were capable of completing the instrument without full assistance. Participants who met the qualifications for this study were identified by the investigator using purposive sampling,

which is a nonrandom sample of participants who possess the necessary qualifications for the purpose of the study (Fraenkel & Wallen, 2003). This was followed by snowball sampling, in which, according to Fraenkel and Wallen, participants are selected as needed. In other words, participants were selected based on recommendations by participants who had completed the sorting process.

Administering the Q-sort and place attachment scale. The Institutional Review Board at Oklahoma State University reviewed and approved this study (Appendix A) for the protection of the rights of the study participants. Data were collected on-site at three Continuing Care Retirement Communities in Oklahoma City, Oklahoma during the spring of 2009. Eighteen participants were given consent forms (Appendix B) stating the importance of the study, the importance of their participation, and the assurance of their confidentiality in this study. Participants were informed that they had the right to withdraw from the study at any time without penalty to them.

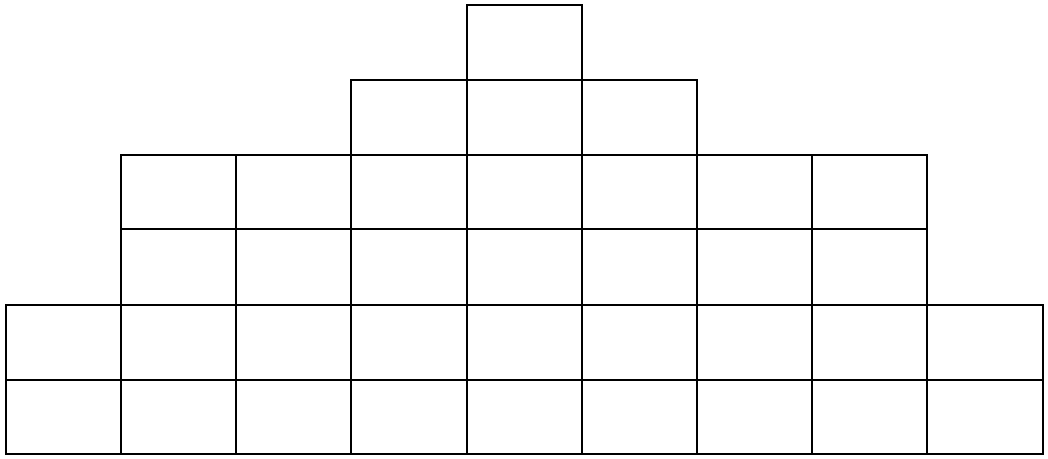
The investigator individually facilitated the Q-sort at each participant's residence. During the sorting process the investigator systematically recorded participant's comments with the intent that, as the participant was performing the Q-sort based on each condition of instruction, each participant would share her opinions and preferences for familiar design elements and principles.

Q-sort and demographic characteristics. The Q-sort method was used for assessing female residents' preferences of familiar design elements and principles found in the participants' current residences as well as in their previous residences. Digital photographs of social areas, for example, living rooms and dining rooms, were selected

based on the statements derived from the concourse. A dry-erase board was used as a Q-sort form board, a tool that was used by participants to arrange photographs according to conditions of instruction provided by the researcher (see Figure 1). The photographs were assigned random numbers and were rank ordered by the participants (the P-set) to determine residents' preferences for design elements and principles.

Two conditions of instruction were used for sorting by each participant: 1) "Sort the photographs according to those that are *most like* your previous home", and 2) "Sort the photographs according to those that are *most like* your current home*"* (McKeown & Thomas, 1988). For each condition of instruction, the participants were asked to sort the photographs into three piles ranging from most unlike, to neutral, to most like. Next, using a form board based on a 36-item table with a 9 point distribution of -4 to +4 (see Figure 1) the participants were asked to rank order the photographs by first placing the two "Most Like" photographs from the Most Like stack in the far right column. Next they were asked to place the two "Most Unlike" photographs from the most unlike stack in the left-most column. The participants were then instructed to continue to place four photographs in the next "Most Like" column and four photographs in the next "Most Unlike" column. They were then asked to continue this sorting procedure, ending with the six neutral photographs placed in the middle to reflect the participants' opinions. As the participants sorted, their comments regarding their preferences and opinions were recorded in writing. The field data were used to support the interpretation of the factors.

Sort I: Which photographs are most like your former residence?



Sort II: Which photographs are most like your current residence?

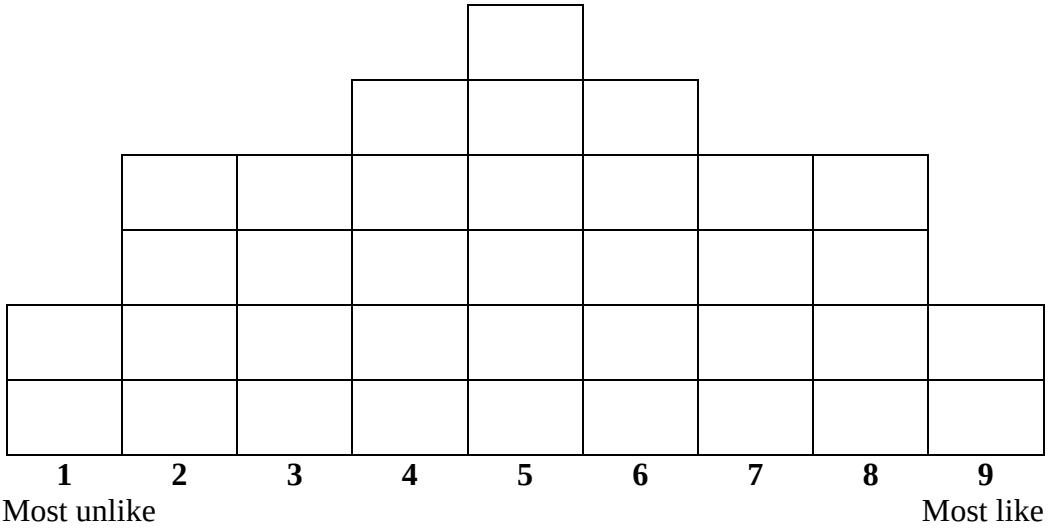


Figure 1. Sorting form board based on 36-item table using a nine-point distribution. One represents "Most unlike" their former/current residence with a distribution of -4, nine represents "Most like" their former/current residence with a distribution of +4, with 2 through 8 representing distributions of -3 to +3 respectively. Five represents the neutral distribution of zero.

Place attachment scale. After the Q-sort was completed a follow-up questionnaire was administered to determine the level of place attachment of residents to their current homes. The questionnaire, a modified Place Attachment Scale (Williams and Roggenbuck, 1989), was previously used in the Leisure Studies field. The scale (Appendix E) consisted of eight questions and included statements such as “This place means a lot to me” and “I enjoy living here”. Items were rated for each participant on a five-point scale to indicate the level of agreement (-2=strongly disagree, -1=disagree, 0=neither agree nor disagree, 1=agree, 2=strongly agree) and each of the eight items were summed, with the composite score for the total scale ranging from -16 to +16 for each participant. This ordinal rating system was used to determine a value of each possible response, with positive responses receiving a positive value, negative responses receiving a negative value, and neutral responses receiving no value.

Data Analysis Procedure

The Q-sort data were analyzed using the PQMethod 2.11 software program. PQMethod 2.11, a freeware program maintained by Peter Schmolck, is in the public domain and is available for free download at www.qmethod.org. Typically, Q-methodology involves three sequential sets of statistical procedures: correlation, factor analysis, and the computation of scores for statements within the factors (McKeown & Thomas, 1988). Correlation defines a comparison of every sort to all other sorts (Robbins, 2005). Factor analysis, "fundamental to Q-methodology since it comprises the statistical means by which subjects are grouped” (McKeown & Thomas, 1988, p. 49) was used to find patterns among the differences in values of the sorts (Vogt, 1999). Factor

analysis was executed using principal components. Factors emerge that represent groupings or trends of subjectivities that exist within a particular sample (Brown, 1980). Varimax factor rotation, a process of orthogonally aligning factors along a perpendicular axis to distinguish between high and low factor loadings (Robbins, 2005) was performed to better clarify the factors. From this rotation, three distinct factors emerged. Finally, to determine the structure of the photos within the factor, z-scores are calculated for each photo for each factor (See Appendix F).

Place attachment for each participant was estimated by calculating a composite score of all items of the Place Attachment Scale. The scores were totaled for each participant and the resulting scores were analyzed using the SPSS software program. In a previous study the original Place Attachment Scale by Williams and Roggenbuck (1990) produced an internal consistency alpha of 0.85.

The statistical analysis procedures used to test the research questions are as follows:

1. Research Question One: What are the descriptions of design elements and principles for CCRC residents as reflected in their current and former residences? A correlation matrix of every sort to all other sorts is used for the factor analysis. Factors are chosen theoretically and statistically to represent the most appropriate solution for the research question and participants' views. A factor array for each factor was employed based on the calculated z-scores for all statements. In other words, the participant's sorts of preferences for design elements and principles of their previous homes and their current

homes were used to describe overall participants' perceptions of similarity (most like, least like) with the interior design. Additionally, the interpretation of the factors included the field data collected through participant comments and post-sort interview.

2. Research Question Two: In what ways do perceptions of former residences relate to perceptions of current residences? A comparison of the ways that the women sorted their former residence with the current residence revealed the relationship of these two ways to view the concept of familiarity with design elements and principles.
3. Research Question Three: Is there a relationship between participants' place attachment scores for their current residence and their preferences for elements and principles of design as reflected in the descriptions of design elements and principles (factors) that resulted from analysis of responses to Question One? Correlation coefficient was employed to compare the relationship between design elements and principles (within factors) and place attachment.

CHAPTER IV

RESULTS

The overall purpose of this study was to describe the preferences of female residents of CCRCs toward familiar design elements and principles. Data were gathered using Q-methodology and a place attachment questionnaire. The Q-method included a Q-sort consisting of 36 photographs that were sorted to determine female residents' familiarity with and preferences for interior design elements and principles in CCRCs. Questions regarding demographics were included at the conclusion of the Q-sort. A follow-up questionnaire was administered to determine the level of place attachment of the participants with their current residences.

Description of the Participants

Participants in this study included eighteen females who were residents of a CCRC in the Oklahoma City metropolitan area. Each of the participants completed the Q-sort twice and answered demographic questions, followed by completing a place attachment questionnaire. Three age categories were represented in this study. Young-old age included those ages ranging from 65 to 74; old age included ages ranging from 75 to 84; and oldest-old age included ages 85 and above. The modal category of the participants' ages was the category of old age, 75 to 84 years. Half of the participants (nine) were married, eight were widowed, and one participant was divorced. The range

of time the residents had lived in their current home was one month to 16.5 years with the average length of time around four years. The average time the participants had lived in the area was 25 years. Seventeen of the 18 participants had been employed outside the home at some time during their adult lives. All participants had graduated from high school while 12 of the 18 participants had formal education beyond the high school level. Fifteen of the participants lived in independent living housing in CCRCs while three of the participants lived in the assisted living areas in CCRCs. Demographics and the total score of the place attachment survey for each participant are shown in Table 1.

Table 1

Participant Demographics

P-set	*Age Group	**Marital Status	Length in Current Residence	Length in Current Area	Place Attachment Score
1	O	W	1 Mo	4 Yr	9
2	O	W	10 Mo	1 Yr	16
3	OO	W	1.5 Yr	50 Yr	15
4	YP	M	3 Yr	9 Yr	12
5	O	M	5.5 Yr	44 Yr	16
6	YO	W	10 Yr	30 Yr	10
7	O	M	4 Mo	4 Yr	16
8	O	M	7 yr	7 Yr	15
9	YO	M	3 yr	3 Yr	9
10	O	W	2.5 yr	2.5 Yr	6
11	O	M	9 yr	61 Yr	16
12	O	M	3 yr	30 Yr	16
13	OO	W	9 yr	39 Yr	6
14	OO	W	2 yr	45 Yr	8
15	YO	D	2 yr	44 Yr	13
16	OO	W	16 yr	16 Yr	10
17	YO	M	1 mo	1 Yr	11
18	O	M	5 mo	44 Yr	11

***Age Group:** YO = Young old, 65-74 years of age; O = Old, 75-84 years of age; OO = Old old, 85+
****Marital Status:** M = Married; D = Divorced; W = Widowed

Data Analysis

Data for the Q-sorts were analyzed using PQMethod software (www.qmethod.org), which utilizes a three-step procedure. The first step is the correlation of the Q-sorts. Every sort is correlated with every other sort to obtain a correlation matrix. In the second step, the correlation matrix was analyzed using principal components factor analysis to distinguish groupings of participants' viewpoints. Eight factors were originally identified in an unrotated factor matrix. Principle components followed by a varimax rotation identified three factor groupings of participants' viewpoints with varying preference for particular design elements and principles. This three-factor solution accounted for 53% of the total variance.

Using a .45 significance level as a criterion for achieving significance on only one factor in order for a sort to define the factor, 17 sorts defined Factor One, seven sorts defined Factor Two, and four sorts defined Factor Three. Three sorts were considered non-significant as they showed no clear indication of significant loading on any of the three factors. Five sorts were confounded, meaning these sorts achieved significance (.45 or above loading) on more than one factor indicating multiple viewpoints of certain participants.

Finally, factor arrays, or model Q-sorts, were generated for each factor by using z-scores of all photographs replicating the sorting pattern ranging from +4 (most like) to -4 (most unlike) (see Figures 2, 3, & 4). These factor arrays are represented by the photographs with both an array position of +4 to -4 and a z-score (Appendix F). Q-sorts that significantly load on a factor were used to define each factor and were merged into an array using weighted z-scores that are compared to the whole numbers (+4 to -4) for

Figure 2. Factor One Model Array indicating "Most unlike" (1) to "Most like" (9) photographs.

Figure 3. Factor Two Model Array indicating "Most unlike" (1) to "Most like" (9) photographs.

Figure 4. Factor Three Model Array indicating "Most unlike" (1) to "Most like" (9) photographs.

the purpose of interpreting the factor arrays (McKeown & Thomas, 1988). Comparing these scores to determine distinguishing Q-sort items is needed in order to contextually interpret the factors.

The eight-item Likert-type Place Attachment Scale was analyzed using SPSS, a statistical software package. Each participant's scores were totaled and analyzed for internal consistency using Cronbach's alpha ($\alpha = .84$). "Cronbach's alpha is a test reliability technique that requires only a single test administration to provide a unique estimate of the reliability for a given test" (Gliem & Gliem, 2003, p. 84). The participants' place attachment scores were then correlated with their factor scores to describe the relationship between the participants' preferences for particular design elements and principles and place attachment.

The Place Attachment Scale (Appendix E) only pertained to the participants' opinions of their current homes. The scale was used to determine if the participants perceived a sense of attachment, or environmental fit, to their current residence. A Likert-type scale was used for the place attachment questionnaire and items were rated for each participant to indicate their level of agreement (-2=strongly disagree, -1=disagree, 0=neither agree nor disagree, 1=agree, 2=strongly agree). A response to each of the 8 items was summed, with the sum score ranging from -16 to +16 for each participant. The participants' composite scores on the place attachment scale ranged from +6 to +16 (see Table 2). Descriptive statistics were employed using SPSS to identify how participants in each factor responded to the questions regarding their attachment to their current residence. The composite scores were categorized into the range corresponding to their respective response area (strongly disagree = -16.00 to –9.61; disagree = -9.60 to -3.21; neither agree nor disagree = -3.20 to + 3.20; agree =

+3.21 to +9.60; strongly agree = +9.61 to +16.00). All responses fit into two response categories, Agree and Strongly Agree. Accounting for one missing response from participant 17 on item 4, "I do not feel very attached to my current home," 72.4% of the responses corresponded to the Strongly Agree category and the remaining 27.6% corresponded to the Agree category.

As noted in Table 4, only slight variances were seen in place attachment between participants. Nine participants' Current sorts loaded on Factor One, Symmetrical Traditional (see Table 3). Five participants' Current sorts loaded on Factor Two, Naturalistic Rhythm, and three participants' Current sorts loaded on Factor Three, Individualistic Variety. Participant 9 was the only respondent in the Symmetrical Traditional factor who had a neutral opinion, neither agree nor disagree, on any of the place attachment items ("I would rather live here than any other place"); however,

Table 2

Factor Loadings and Place Attachment Scores

	Sort				Sort		
Participant	Former	Current	PA Score	Participant	Former	Current	PA Score
1	1	1	9	10	1	1	16
2	3	3	7	11	1	1	14
3	NS	NS	15	12	1	1	16
4	2	2	6	13	C	1	15
5	1	1	15	14	NS	NS	11
6	1	1	16	15	2	2	16
7	2	C	13	16	1	1	9
8	2	C	10	17	C	2	16
9	1	1	12	18	3	3	8

NS = Non-significant
C = Confounded

Participant 9 still had a high composite score (12) which indicates a high level of place attachment to her current home. Participants 1 and 16 each had a composite score of nine, which was the lowest score for any of the participants in the Symmetrical Traditional factor, but was high enough (Agree category) to indicate positive place attachment.

Research Question One

What are the descriptions of design elements and principles for CCRC residents as reflected in their current and former residences?

Factor descriptions. Photographs with higher positive or negative z-scores in one factor indicate differing viewpoints of participants. Participants significantly associated with a particular factor imply shared viewpoints (Watts & Stenner, 2005). Three factors emerged from the analysis of the Q-sort data representing unique viewpoints of CCRC residents' preferences for interior design elements and principles. The three factors were named according to their distinguishing characteristics of design elements and principles. Qualitative information recorded during the sorting was used to further understand the viewpoints. The factor rankings that denote the three model Q-sorts and the z-scores for each factor are shown in Table 3.

Comments made by the participants are included to further qualify each perspective. Style was a descriptor that was continually mentioned by participants.

Table 3

Factor Z-scores and Rank Positions

	Factor 1		Factor 2		Factor 3	
Photographs	Z –score	Rank Position	Z-score	Rank Position	Z-score	Rank Position
1	-1.60	35	-.070	22	0.56	10
2	0.84	9	0.57	13	0.49	11
3	-0.21	21	-1.53	35	-0.12	19
4	0.90	7	-0.21	23	1.04	7
5	-0.58	24	-2.15	36	1.25	5
6	-0.31	23	0.26	16	-1.23	34
7	-1.13	31	-0.03	21	-1.00	30
8	1.59	2	-0.96	28	0.06	17
9	-0.66	27	0.49	15	-1.56	36
10	-1.43	33	-0.83	27	1.64	3
11	-0.16	20	-1.36	33	-0.86	27
12	-1.99	36	-1.14	29	-0.17	21
13	0.88	8	-0.31	24	0.42	12
14	-0.86	28	0.84	8	0.69	9
15	1.06	6	1.40	3	-1.16	33
16	-0.87	29	0.07	20	0.08	16
17	-0.08	19	0.24	17	-0.14	20
18	0.36	15	1.22	4	-0.73	24
19	-1.37	32	0.80	10	0.37	14
20	0.58	13	-0.53	26	-1.48	35
21	0.69	11	-1.34	31	0.40	13
22	-0.58	25	0.52	14	2.05	1
23	1.23	5	0.17	19	-0.80	25
24	1.49	3	1.61	1	-0.88	28
25	-1.48	34	0.19	18	-1.08	32
26	-0.88	30	0.59	12	0.96	8
27	0.39	14	-1.33	30	2.01	2
28	0.27	16	-0.33	25	0.21	15
29	- 0.58	26	0.71	11	1.20	6
30	1.46	4	0.84	7	-0.47	23
31	1.76	1	1.11	5	-0.86	26
32	0.15	17	1.01	6	-1.02	31
33	-0.05	18	-1.34	32	-0.97	29
34	-0.25	22	-1.50	34	-0.27	22
35	0.80	10	1.51	2	-0.05	18
36	0.64	12	0.82	9	1.44	4

For example, Participant 1 noted that even though she had "always had traditional furniture, she wasn't opposed to other styles, like modern. It was just what I have always had." Participant 10 commented about traditional style by noting that she preferred a more "formal, provincial style." Participant 8 said she didn't care for anything that was "too modern or too contemporary." These comments indicate that participants identify with particular styles of furnishings and accessories, which suggests that consumers of design hold particular viewpoints and preferences regarding design elements and principles.

Factor one - Symmetrical Traditional. Factor One was named *Symmetrical Traditional*. Style is an important indicator for understanding this factor. Traditional style was the predominant presenting idea in the distinguishing photographs from Symmetrical Traditional. Symmetry was the most distinguishing element in the Symmetrical Traditional factor, with the elements and principles of line, light, color, ornament, and harmony also serving as defining elements and principles. The ten "Most Like" photographs for Symmetrical Traditional are shown in Figure 5 and the ten "Most Unlike" photographs for Symmetrical Traditional are shown in Figure 6. Traditional style, as seen in the Symmetrical Traditional factor, tends to be more formal. The characteristics of different styles depend in great part on the combination and use of the elements and principles throughout the design of a room. Generally, the application of design elements and principles that are strongly indicative of traditional style include the same elements and principles evidenced in Factor One.

1) Living room 31

2) Dining room 8

3) Living room 24

4) Living room 30

5) Living room 23

6) Living room 15

7) Dining room 4

8) Chair 13

9) Dining room 2

10) Living room 35

Figure 5. Factor One ten "Most like" photographs.

1) Sofa 1

2) Chaise 12

3) Dining Room 7

4) Living Room 19

5) Sofa 10

6) Living Room 25

7) Dining Room 9

8) Chair 14

9) Living Room 16

10) Living Room 26

Figure 6. Factor One ten "Most unlike" photographs.

Symmetry was prevalent in most of the high positive photographs. When strong symmetry is present, that is, when one side of the room is identical to the other, formality is implied (Nielson & Taylor, 2007). Symmetry indicates orderliness, refinement, and structure. Participant 10, whose sorts defined Symmetrical Traditional, stated that she preferred a "formal feel" to her home. In the photographs in Figure 5, Living Room 31, Dining Room 8, Living Room 24, Living Room 30 and Living Room 23, a strong presence of symmetry is evidenced in these traditional style rooms. There is a sense of structure, even leaning toward rigidity in some photographs. Symmetry is predictable which can indicate stability. There is a sense of security and comfort in a symmetrical interior (Pile, 2007). Participant 6 stated she preferred a comfortable, traditional home.

Traditional style that uses symmetry is passive, which means there are no surprises (Nielson & Taylor, 2007). Horizontal lines are passive and are dominant in most of the high positive photos and absent in the high negative photos. As seen in Figure 5, photographs Living Room 31, Living Room 24, Living Room 30, Living Room 23, and Living Room 35 strong horizontal lines are present in the trim work, bookcases, and/or crown molding. Horizontal lines are implied through the lines of the furniture. The sofas have strong horizontal lines in their overall appearance, particularly in the cushions and base of the sofas. Gently curving lines can also be indicative of traditional style. As shown in Figure 5, photos Living Room 31, Dining Room 8, Living Room 15, Chair 13, and Dining Room 2 have obvious curving lines. Chair 13, in particular, is a clear example of a traditional piece with its curved lines. However, the remaining photographs show more subtle curved lines, such as on the corners and arms of sofas, ottomans, and chairs. As a sharp contrast, photographs in Figure 6, showing the "unlike"

side of the model indicate crisper, cleaner lines, even in the photograph Chaise 12, which has strong curved but clearly delineated lines. These characteristics present in Factor One photos are clear indications of how the application of the design elements and principles contribute to the definition of the style.

Natural light is an important element in the Symmetrical Traditional factor. Natural light suggests warmth and openness, and can increase the appearance of space. Seven of the ten distinguishing photographs shown in Figure 5 (Living Room 31, Living Room 24, Living Room 30, Living Room 23, Living Room 15, Dining Room 4, and Living Room 35) have large open windows not closed off by window treatments, and two other photos (Dining Room 8 and Dining Room 2) suggest a presence of natural light. Several participants whose sorts correlated to this factor indicated the importance of natural light. Participant 5 stated that natural light from the windows was extremely important to her. Participant 12 particularly stressed the importance of "windows, natural light and views" in both her former and current homes so as not to feel "closed-in." Natural light is considered a "healthful, cheerful light necessary for living" (Nielson & Taylor, 2007, p. 102). Participants whose sorts are represented in the Symmetrical Traditional factor, whether consciously or subconsciously, clearly indicated the importance of natural light to the overall ambience of their homes.

Typically in traditional interiors, colors are neutral and understated with accents in patterns and accessories. It is clear that most participants preferred the neutral pallet. The strongest, most vibrant colors can be found in the +2 column, specifically Dining Room 4, Chair 13, and Dining Room 2, (see Figure 5) which denotes an interest in color as accent, but not as a distinguishing preference. Contrasting colors as accents were

predominant in photographs of Living Room 31, Living Room 24, Living Room 30, and Living Room 23 (see Figure 5). The accents were clearly visible though nonetheless muted and reserved colors as is indicative of traditional style. Participant 5 stated that a neutral color palette was one of the most identifiable elements and principles of her current home. She had a neutral color scheme with contrasting accents. Participant 10 commented on the green color in the photograph Living Room 23 as being most like her former and current home.

As noted previously, accents in patterns and accessories are indicative of a traditional interior. Patterns and accents can be considered ornamentation. Some ornamentation, although not in abundance, is present. Ornamentation can act as a buffer to the formality of symmetry by adding variety to the predictability of traditional style. None of the photographs presented to the participants included much pattern, but accessories such as plants, pillows, lamps and pictures were distinguishable. Living Room 31, Dining Room 8, Living Room 24, Living Room 30, Living Room 23, Dining Room 4 and Dining Room 2 (see Figure 5) are examples of ornamentation through the use of accessories. Ample wall space for paintings and wall hangings was preferred by participant 9 as well as shelving to display important mementos.

From the photographs, it is clear that everything is in order and everything appears to have a place without producing monotony. Harmony provides an orderly and pleasing ambiance through the use of unity (orderliness, uniformity) and variety (interest and diversity). Ambiance was an important quality to Participant 6, who stated the overall appearance of a room, the “feel, the ambiance,” was a key factor in whether or not she liked a room. Photographs in Figure 5, Dining Room 8, Living Room 24, Living Room

30, Living Room 23, Dining Room 4, and Living Room 35 manifest unity through the arrangement of the furnishings and accessories. The rooms are orderly and maintain consistency. Living Room 15 and Dining Room 2 provide harmony through variety (see Figure 5). There is a little more surprise and diversity to these rooms.

The photographs in the "Most Unlike" side of Factor One, Symmetrical Traditional (see Figure 6) tell an important part of the story. Those participants with sorts defining Symmetrical Traditional unmistakably dislike Contemporary Style. Contemporary Style, as defined by popular culture of the Central Plains geographic location where the study was conducted, consists of distinct, usually straight lines, with a minimal use of accessories or decoration, often appearing stark in contrast to Traditional Style. Four of the six photographs from the -4 and -3 ranking scores (see Figure 3) are asymmetrically balanced, which is in direct opposition to the symmetrical balance of the "Most Like" side of the sort. Straight, clean lines are the most distinguishing element in this factor, and there is not a clear emphasis on horizontal line as in the "most like" photographs. In the 'Most Unlike" photographs shown in Figure 6, Chaise 12, Living Room 19, Dining Room 7, Living Room 26, Living Room 16, Chair 14, and Dining Room 9, natural light is present but is not a predominant feature of the room. There is also a lack of ornamentation. The ornamentation that is evident is minimal, which is a characteristic of contemporary style. Harmony exists in the photographs, but in a different application. Unity is found through the simplicity of the rooms, but there is very little variety in the rooms.

Nine of the ten distinguishing photographs include group seating. This may indicate the social nature of the participants. Several of the participants in the

Symmetrical Traditional factor stated they enjoy entertaining family and friends. The seating arrangements in the living rooms are L-shaped or U-shaped sociopetal arrangements that tend to encourage conversation. Three dining rooms included in, suggests an interest in conversation and entertaining.

Factor two – Naturalistic Rhythm. Factor Two was named *Naturalistic Rhythm*. The important indicator in understanding this viewpoint was the presence of natural materials, particularly wood. Rhythm in the form of repetition was the most distinguishing element in the Naturalistic Rhythm factor. Other distinguishing elements and principles in Naturalistic Rhythm are light, line, color, and harmony. The ten "Most Like" photographs for Naturalistic Rhythm are shown in Figure **7** and the ten "Most Unlike photographs for Naturalistic Rhythm are shown in Figure 8.

Style was not as important in Factor Two, Naturalistic Rhythm as it was in Factor One, Symmetrical Traditional. The use of natural light and natural materials seemed more significant than characteristics defining a particular style. However, Transitional style was more prevalent in this factor than were Traditional style or Contemporary style. One participant who sorted her view of her current home defined Naturalistic Rhythm and her view of her former home defined Symmetrical Traditional commented that she had always had traditional furnishings, but decided to replace everything with a more casual style when she moved to her current home. Transitional style is a more casual, relaxed style that still maintains a sense of order. The distinguishing application of elements and principles of transitional style include rhythm, light, color, line, and harmony, which were predominant in the distinguishing photographs.

1) Living room 24

2) Living room 35

3) Living room 15

4) Living room 18

5) Living room 31

Living room 32

6) Living room 30

7) Chair 14

8) Living room 36

9) Living room 19

Figure 7. Factor Two ten "Most like" photographs.

1) Dining Room 3

2) Chair 5

3) Chair 21

4) Chair 33

5) Chair 11

6) Chair 34

7) Sofa 10

8) Dining Room 8

9) Chaise 12

10) Sofa 27

Figure 8. Factor Two ten "Most unlike" photographs.

Rhythm is a visual element that causes the eye to follow a path or pattern (Neilson & Taylor, 2007). One way rhythm can be achieved is by repetition, which is repeating one or more elements and principles to create movement and interest. The continued use of line creates patterns, as seen in various photographs. In the photographs in Figure 7, Living Room 18, and Living Room 36 show wood beams repeated on the ceilings to create patterns. The repetition of the wood beams adds visual interest and presents a more casual feel to the rooms. The shelves in the bookcase in photograph Living Room 30 are a form of repetition and repetitive patterns are seen in the windows as in photos Living Room 24, Living Room 35 Living Room 15, Living Room 18 where the wood trim is repeated (see Figure 7). While not strong enough to be considered a focal point (emphasis), there is still enough movement to draw the eye toward the windows. Repetition is also seen in the photo Chair 14 through the repeated use of wood slats in the arms of the chair.

Ample natural light is evident in all but one of the photographs (Living Room 36). Natural light, in this context, creates a comfortable ambience that reinforces the more casual transitional style. Participant 8 stated that natural light was an important element that was present in her former home and she made sure she also had large windows that allowed a lot of light in her current home. She preferred a more casual style home and felt the natural light enhanced that atmosphere.

The neutral color palette seen in the photographs is indicative of Transitional style. Warm, neutral colors with splashes of stronger accent colors create a warm, comfortable atmosphere as seen in the use of wood flooring in all the “Most Like” photographs.

Simple but not stark lines are strong indicators of Transitional style for this Naturalistic Rhythm perspective. The use of straight lines with softer corners tends to give a more casual character to the rooms in the "Most Like" photographs (see Figure 7). A combination of vertical and horizontal lines produces interest without adding too much stimulation or movement. Harmony is achieved in the photographs through a blend of elements and principles that are typical in Transitional Style. By applying elements and principles such as rhythm, line, light, and color successfully, a harmonic quality is attained.

Group seating is important in the Naturalistic Rhythm factor. One important difference between Factor One, Symmetrical Traditional and Factor Two, Naturalistic Rhythm is that Naturalistic Rhythm does not include any Dining Rooms in the "Most Like" photographs. All the furniture arrangements are group seating with the exception of Chair 14, which upon close inspection includes part of a second chair, which suggests a more casual interest in entertaining or socializing. As seen in Figure 8, the "Most Unlike" side of the model sort, all the photographs except Dining Room 3 and Dining Room 8 are individual chairs or single sofas not displayed in a seating arrangement. Isolation is not an important quality to Naturalistic Rhythm. The preference for a casual atmosphere is reinforced by the placement of three formal dining rooms in the "most unlike" side. Not only are the dining rooms formal in style, but they also represent a formal seating arrangement.

The Naturalistic Rhythm factor represents a casual, relaxed environment. Overall the combination of preferred design elements and principles that characterize Naturalistic Rhythm are less rigid than those found in Symmetrical Traditional. The use of natural

light and natural materials contribute to the relaxed ambience found in those photographs. Each of the rooms is naturalistic, organized, and sophisticated without being formal, and uncomfortable.

Factor three – Individualistic Variety. Although only two participants (4 sorts) correlated to the Individualistic Variety factor, it is important to point out the features of these sorts that set this factor apart from the other two viewpoints. According to Brown (1980), one of the three statistical criteria in determining factors is at least two sorts in each factor with significant loadings (Siler, 2009). All but two of the distinguishing photographs of Factor Three, Individualistic Variety (Living Room 36 and Living Room1) were significant at $P < .01$ and all were significant at $P < .05$. The individualistic nature of each of the four sorts was instrumental in defining this factor. Robbins (2005) explains that the statistical analysis is only a part of the process of determining factors. The theoretical relevance of a factor has significance as it may "reflect strongly the views of a single, important individual and therefore be retained for a full and robust examination" (Robbins, p. 213). This was determined to be the case in Individualistic Variety in which the four unique sorts were representative of a diverse set of preferred elements and principles.

The distinct variety of preferences for elements and principles of Factor Three, Individualistic Variety over-powered any particular style. Color was the most prevalent element linking the photographs in the model for Individualistic Variety. Other defining elements and principles for Individualistic Variety are line and pattern. The ten "Most

Like" photographs for Individualistic Variety are shown in Figure 9 and the ten "Most Unlike" photographs for Factor Three are shown in Figure 10.

Although there was a varied color scheme for the Individualistic Variety factor, color appears to be a significant element in this factor. About half of the "Most Like" photographs (see Figure 9), Living Room 22, Sofa 27, Living Room 29, Dining Room 4, and Living Room 1, had neutral grounds with intense accents. Two photographs (Sofa 10 and Chair 5) had intense backgrounds and accent colors, and three photographs (Living Room 36, Living Room 26, and Chair 14) had neutral backgrounds and neutral accent colors. Even though there is no particular color scheme or consistent pattern, it is important to note there is unifying theme in the use of color. The warm hues that emerge in all the photographs appear to be significant. The two "most like" photographs in Figure 9, Living Room 22 and Sofa 27, have an overall warmer palette than do the two "most unlike" photographs under column 1, Living Room 20 and Dining Room 9 which have a cooler feel. The equal mix of color preferences clearly reinforces the individualistic variety of this viewpoint of perspectives of place.

Lines are used in a combination of ways in Factor Three, Individualistic Variety. The variety of horizontal, vertical, straight and curved lines does not signify a particular line preference, although in each of the top ten "Most Like" photographs (see Figure 9), the strong use of line is evident. In Living Room 22, the combination of lines is in contrast to those vertical lines seen in Chair 5 or the horizontal lines in Living Room 36. Lines are apparent in these photographs as they are in Living Room 26 and Chair 14, but line is more implied in Living Room 10, Living Room 29 and Living Room 1. This

1) Sofa 27

2) Living Room 22

3) Sofa 10

4) Living Room 36

5) Chair 5

6) Dining Room 29

7) Dining Room 4

8) Living Room 26

9) Chair 14

10) Living Room 1

Figure 9. Factor Three ten "Most like" photographs.

1) Living Room 20

2) Dining Room 9

3) Living Room 32

4) Living Room 25

5) Living 15

6) Dining Room 6

7) Chair 11

8) Living Room 24

9) Chair 33

10) Dining Room 7

Figure 10. Factor Three ten "Most unlike" photographs.

again reinforces the individualistic nature of those participants whose sorts loaded on the Individualistic Variety factor.

Pattern is varied but evident in Factor Three, Individualistic Variety. Referring again to Figure 9, in photograph Living Room 22, pattern is created by the wood frames used on the wood wall and similarly, pattern is created by the wood trim on the windows in Living Room 26. Sofa 27 shows the use of pattern on the wood paneling and the tufted fabric of the sofa. The wood beams used in Living Room 36 suggest a horizontal pattern on the ceiling while the stripes in the wallpaper in Chair 5 and the wooden slats used in the arms in Chair 14 show vertical patterns. The chair backs in Dining Room 4 are in a diamond pattern. This diverse use of lines again reinforces the individual variety of Factor Three.

In Figure 10, the ten "Most Unlike" photographs again support the individualistic variety of the participants by indicating a uniqueness of preferences. There is not a distinguishing style or any particular distinguishing element or principle that defines the "Most Unlike" photographs for Individualistic Variety.

Summary of Factors

Each factor had its own distinct model array with distinguishing photographs that sets each factor apart from the other two factors (see Figures 2, 3, & 4). Both the positive and the negative ranking scores are used to determine the differences between each factor. Consensus photographs, those that do not distinguish among the factors, show the similarities between each of the factors and are used to highlight the connection of the factors. There were only two consensus photographs in this study that did not seem to be

enough to add merit to the similarities between the three factors since the z-score of the photographs was a low position or negative score. Thus each of the three views was unique and distinct in conveying differences in preferences for design elements and principles between each viewpoint.

Research Question Two

In what ways do perceptions of former residences relate to perceptions of current residences?

Eighteen participants were instructed to sort photographs according to two conditions of instruction, "What was your former home like?" (Former) and "What is your current home like?" (Current). Three factors emerged from the analysis of the 36 sorts (see Table 4). Factor One, Symmetrical Traditional included 17 sorts, included seven sorts, and Individualistic Variety included four sorts. All other sorts were either non-significant (4) or confounded (4).

Of the 17 sorts in the Symmetrical Traditional factor, only Participant 13 sorted differently on her Former sort (Confounded) and her Current sort (Symmetrical Traditional). The other eight participants' sorts (16 total sorts) loaded significantly on the same factor for their Former and Current sort. This indicates that those participants in Symmetrical Traditional construed their former homes and their current homes as having the same or similar design elements and principles. This supports the theoretical perspective of the Ecological Theory of Aging. According to the Ecological Theory of Aging, when environments for the aging population are designed in such a way that

Table 4

Factor Matrix with an X Indicating a Defining Sort

QSORT	1	2	3	QSORT	1	2	3
1	**0.6070X**	0.0807	0.0123	19	**0.7067X**	-0.2313	0.2798
2	**0.5313X**	0.2728	0.1673	20	**0.6193X**	0.0064	0.1112
3	-0.2221	-0.0068	**0.4896X**	21	**0.8488X**	0.0204	-0.0867
4	0.1129	-0.0979	**0.5406X**	22	**0.7634X**	0.1323	-0.1571
5	0.3280	-0.0047	0.3867	23	**0.4684X**	0.0285	0.3630
6	0.2564	0.4002	0.4377	24	**0.4980X**	0.1625	0.0844
7	0.1429	**0.6571X**	-0.1871	25	0.6186	0.4937	0.0403
8	0.2131	**0.7664X**	-0.3257	26	**0.7903X**	0.1837	0.1841
9	**0.8753X**	-0.0688	-0.0363	27	0.3127	-0.1782	0.3896
10	**0.7553X**	0.1980	-0.2689	28	0.4450	-0.4829	-0.2668
11	**0.7311X**	0.0999	0.1165	29	0.1318	**0.6926X**	-0.2058
12	**0.6077X**	0.2297	0.0222	30	-0.2416	**0.7839X**	0.1093
13	-0.0550	**0.6830X**	0.0923	31	**0.7348X**	0.1096	0.0481
14	0.4979	0.6626	0.2428	32	**0.7566X**	0.0428	0.0120
15	0.4429	**0.5544X**	0.0432	33	0.7392	0.4665	-0.0561
16	0.4775	0.5727	0.2006	34	0.3302	**0.6561X**	-0.0525
17	**0.7069X**	0.2488	-0.0616	35	0.3506	0.3259	**-0.5943X**
18	**0.7794X**	0.2339	-0.1162	36	-0.0224	0.2171	**0.5540X**
				% Explained Variable	30	16	7

assures that aging residents' needs of competence and environmental press are met (Lawton, 1977), environmental fit is achieved. Those participants defined in the Symmetrical Traditional factor had similar former homes and current homes and high place attachment scores. These findings suggest that the needs of the participants are being met. These participants, through their preferred design elements and principles, appear to have a sense of environmental fit.

Participants with their place view of Factor Two, Naturalistic Rhythm, were not so assured of the similarities of preferred design elements and principles between their former homes and their current homes. Five participants' sorts loaded at least partially

on the Naturalistic Rhythm factor. Unlike the participants in the Symmetrical Traditional factor, the majority of participants in Naturalistic Rhythm were split between their sorts. Only participants 4 and 15 had both Former and Current sorts that loaded on Naturalistic Rhythm. Sorts for participants 7 and 8 loaded on Naturalistic Rhythm only for the Former sorts, but had confounded sorts between Symmetrical Traditional and Naturalistic Rhythm on their Current sorts. Participant 7 noted that her "current home is more traditional than her former home." Participant 8 "had stone in her former home as well as a Spanish dining table and chairs, but does not have those in (her) current home." However, their place attachment scores were still positive (10 and 11), indicating they feel at home in their current residence. Participant 17 was confounded in her Former sort and was in the Naturalistic Rhythm factor on her Current sort. She stated that her "current home is different than her former home. (My) current is less formal, simpler, less cluttered and has warmer colors." This aligns with Atchley's Continuity Theory in which adults continue to adapt to their changing environments. The use of familiar cues can contribute to their ability to adapt to their environment as it changes. So while their current homes may not reflect the exact same design elements and principles as their former homes, these participants seem to have the ability to adapt, perhaps through similarities based on familiar cues as found design elements and principles.

Two participants, 2 and 18, had both Former and Current sorts that loaded on Factor Three, Individualistic Variety. Participants in Individualistic Variety had clear cut indicators distinguishing this factor, but were more unique than the other two factors, which explains the name of the factor. As will be discussed in more detail later, participants in the Individualistic Variety factor did not score as high on their place

attachment scale as did participants in Factors One and Two. So even though there is consistency and uniqueness to this factor, a certain amount of ambiguity is present. Individualistic Variety participants appear to fit into the Ecological Theory of Aging perspective. Their sorts confirm that their needs are being met (environmental press), though not necessarily through familiar design elements and principles. They have a sense of being attached to their homes, but not as strongly as those in the Symmetrical Traditional factor. This lends itself to the idea that they also fit into the Continuity Theory perspective in that they have adapted to their current residence. This factor seems to include a combination of influences. No one distinguishing style emerged, but it is still important to note because this factor has a clear uniqueness with its Individualistic Variety.

Research Question Three

Is there a relationship between participants' place attachment scores for their current residence and their preferences for elements and principles of design as reflected in the descriptions of design elements and principles (factors) that resulted from analysis of responses to Question One?

The three factors discussed above define preferred design elements and principles by combining the participants' former and current sorts. A modified place attachment scale (Appendix E) based on a place attachment scale previously used in the Leisure Studies field developed by Williams and Roggenbuck (1989) was used to determine if the participants consider themselves to have a sense of attachment to their current residences.

Table 4 shows the participant's viewpoint and their corresponding composite score on the place attachment scale in relation to their current residence. Included in this analysis are those participants whose sorts were either non-significant or confounded. A sort is deemed non-significant when the sort does not have a high enough score to load on any one factor. A confounded sort loads highly on more than one factor, not displaying any particular, distinguishing view. Non-significant sorts and confounded sorts are not typically included in the model factor arrays because the purpose of the array analysis is to identify and describe groups of differences.

Factor Two, Naturalistic Rhythm had three participants whose composite place attachment scores ranged from six to 16. One participant's score was 6 (Agree category) and two participant's scores were 16 (Strongly Agree category). These scores, while somewhat diverse, are positive scores, signifying at the least, a positive level of place attachment.

Factor Three, Individualistic Variety included two participants whose composite place attachment totals were 7 and 8. Their place attachment totals were lower than participants' totals in the other factors, including the non-significant and confounded groups. These lower but still positive place attachment totals may help to explain Factor Three, Individualistic Variety.

One participant in the non-significant factor category and three participants in the confounded category all had sums greater than 10. This indicates that for these participants, place attachment includes more than only the interior design of their home. They have a sense of attachment to their current home, but the elements and principles are not the sole indicators of what determines their place attachment.

Summary

Each of the participants had a positive place attachment. Each participant had a total score of seven or higher signifying they each viewed themselves as having an attachment to their current residence. A theoretical perspective relevant to this study reinforced each factor.

The length of stay for each participant in their current residence did not appear to be an indicator of positive or negative place attachment. The place attachment scores varied between the lengths of stay in the current residences (see Table 1). For example participants 5, 11, 13 and 16 had been in their current residences longer than other participants but did not show similar scores. Participant 5 had been in her home for ten years and had a place attachment score of 16. Participant 11 had been in her home for nine years and had a place attachment score of 16, while participant 13 had been in her home for nine years, yet had a place attachment score of 6. Participant 16 had been in her home the longest (sixteen and one half years) and had a place attachment score of 10. This pattern is typical of all participants in that there was no consistency to the place attachment scores relative to the length of stay in their current residences.

CHAPTER V

CONCLUSION

The population of older adults in the United States is steadily increasing, particularly among females who outlive men by an average of seven years. This rise in population is creating an increased demand in viable housing options for older adults. Although many older adults report they prefer to age in place, for a growing number this is not a feasible option. Instead, those who can afford to are choosing to move to CCRCs for their end of life housing option where they can stay on the same campus as their needs for care increase. CCRCs offer housing options ranging from independent living to assisted living to nursing and/or dementia care thus allowing for residents to move from one to another as their levels of care change. This study focused on independent living and assisted living facilities within CCRCs.

The findings from relevant literature indicate that persons with a preference for the design of a facility are more apt to feel connected to that facility. Design elements and principles contribute to the overall design of a facility and various combinations of design elements and principles define the style of that facility. Familiarity is formed

through continued exposure to design elements and principles and the style of a facility. Place attachment, the bond that a person develops with a particular environment (Cutchin, Owen, & Chang, 2003) can be instrumental in an individual's attachment to an environment (Inalhan & Finch, 2004).

The purpose of this study was to determine the preferences of female residents of CCRCs for familiar design elements and principles as described in the context of place attachment. This study first set out to determine if design elements and principles were similar between the former and current homes of female residents of CCRC. Next, the significance of the similarities between the preferences for design elements and principles between former and current homes was addressed. Finally, determining if design elements and principles played a role in the level of place attachment of female residents of CCRCs was investigated.

Two theoretical constructs served as the foundation for supporting the purpose of this study. The first, M. Powell Lawton's Ecological Theory of Aging (1977) addresses the influence of the environment on the aging adult. The second, Robert C. Atchley's Continuity Theory (1989), addresses the ability of the aging adult to adapt to his or her environment. Both theories are related to the environment and its role in the aging process. The Ecological Theory of Aging addresses the impact of the environment on the person, whereas Continuity Theory addresses the role that the individual plays in adapting to the environment. Residents such as those living in the independent living areas of CCRCs, whose needs are met through their environment, tend to feel attached to their environment (Kopec, 2006), which supports the Ecological Theory of Aging. On the other hand, residents of CCRCs who do not always have control over the design

elements and principles of the social spaces of their environment, may still develop an attachment to the environment through adaptation, which supports the Continuity Theory. Place attachment is a significant indicator of the success of the environment by meeting the needs of individuals through positive or negative fit, or through one's ability to accept and adapt to a new environment.

Discussion

The three distinct viewpoints identified in this study were defined as: Factor One, *Symmetrical Traditional*; Factor Two, *Naturalistic Rhythm*; and Factor Three, *Individualistic Variety*. Study participants sorted photographs of interior space and furnishings. This step was followed by conducting factor analysis as part of the Q-methodology process. Each factor (or viewpoint) identified through factor analysis had distinguishing features. Symmetrical Traditional represents a traditional style that shows a preference for more formal and symmetrical applications of design elements and principles. Style was an important feature in Symmetrical Traditional, although style was not as distinguishable in Naturalistic Rhythm and Individualistic Variety. The elements of symmetry, natural light, and line were also important, distinguishing elements and principles contributing to Symmetrical Traditional. The second viewpoint, Naturalistic Rhythm, represents a more relaxed transitional style preference using natural light and natural materials. Rhythm through repetition was the most distinguishing design principle in the Naturalistic Rhythm viewpoint. , Individualistic Variety, represented the uniqueness of each of these Q-sorts. One singular defining style was not evident.

However, there was a common preference for color, line, and pattern in a variety of applications.

According to the defining sorts as seen in Table 3, 12 of the 18 participants' sorts defined the same factor for both their Former and Current sorts among all the factors. The conditions of instruction for the sorts were, "Sort the photographs according to those that are *most* like your previous home" (Former) and "Sort the photographs according to those that are *most like* your current home" (Current). Considering these conditions of instruction, having both sorts define the same factor indicates that two-thirds of participants viewed the design elements and principles in their former homes as being similar to the design elements and principles in their current homes. What is of consequence is the idea that the majority of participants whose sorts loaded on a particular factor in their first sort did so consistently on their second sort. Photographs that participants felt reflected their former homes contained the same or similar design elements and principles as those in photographs reflecting their current homes.

Among the three views identified in the study there is a clear indication that the majority of participants' opinions about the design elements and principles were consistent between each of their two sorts, showing that preferences for design elements and principles in their former home and current home were similar. Six participants had sorts that defined different factors for each sort or had sorts that did not load significantly on any factor at all. Both sorts for participant 3 (sorts 5 and 6) were at a non-significant level, although loadings remained high and mixed. The first sort (Former) for participants 13 and 17 (sort 25 and sort 33, respectively) and the second sort (Current) for participants 7 and 8 (sort13 and sort 15, respectively) were confounded, meaning they

had significant loadings on more than one factor in that sort. This signifies that these participants view their former home or their current home as represented by two viewspoints rather than one single factor. For these participants, either their former or their current homes were a combination of Traditional style and Transitional style. Overall, the majority of participants clearly indicated their design elements and principles in their former homes were similar to design elements and principles found in their current homes.

The analysis of the place attachment questionnaire used for this study showed that all participants had a positive level of place attachment to their current home. As described previously, two-thirds of the participants clearly indicated the design elements and principles were similar in both their former and current homes. Given the positive levels of place attachment among all participants and the number of participants who were in concurrence between their sorts for their former and current homes, the indication is that design elements and principles are associated with place attachment. How much design elements and principles contribute to place attachment, however, was not the focus of this study so this construct was not measured. According to Zavotka and Teaford (1997), familiar cues, such as design elements and principles, contribute to a person's feeling comfortable in his or her surroundings. Low and Altmann (1992) suggest that people who are satisfied with their environment tend view themselves as having place attachment. Therefore, it appears that preferences for familiar applications of design elements and principles may contribute at some level to place attachment.

These findings raise interesting questions for future study. For example, "Did these residents choose their current CCRC based partially on their familiarity with and

preference for design elements and principles exemplified in the design of their current CCRC?" "Do consumers of CCRCs consciously or subconsciously choose residences that 'feel familiar' to them?" "Might marketers of CCRCs use the constructs of familiarity and place attachment as tools to better communicate about the interior environment as they market their products?" "Would a larger population of aging adults living in CCRCs in varying geographical locations generate similar findings?" These and other questions offer examples of possibilities for the extension of the current study in order to result in greater understanding of how older consumer choose and relate to interior environments.

Implications

This was an exploratory study using Q-methodology and a place attachment questionnaire. No previous research could be found using these techniques as applied to interior design elements and principles and place attachment. The Symmetrical Traditional viewpoint represented perceptions of the majority of participants in this study. This finding may have been influenced by the geographical location of this study, which was a metropolitan area in the Central Plains of the United States. However, it is important not to discredit the other two viewpoints. Factor Two, Naturalistic Rhythm included seven sorts and Factor Three, Individualistic Variety included four sorts. Together, these comprise almost one-third of the total sorts, a significant number of opinions to consider regarding the comprehensive design of a CCRC. The importance of being cognizant of the various preferences for design, as in design elements and principles and style, is essential for ensuring that the residential design needs of the

greatest number of residents are met, which in turn may contribute to some degree to a sense of place attachment for residents. Those involved in the design and construction of CCRCs, such as interior designers, architects, general contractors and facility administrators, can gain a better understanding of the role of design elements and principles in relation to the overall importance of the residents' ability to perceive personal connections to their environment. Further findings could determine if this connectedness relates positively to overall healthy life expectancy.

Q-methodology is a method for measuring subjectivity which employs both qualitative and quantitative steps. Certain aspects of interior design, such as aesthetics and/or satisfaction with an environment, are considered subjective, making these constructs difficult to quantify or measure. Preferences, in particular, are subjective opinions and are difficult to measure. Q-methodology is a unique method that lends itself to studies on these subjects as it allows for quantifying subjectivity. This exploratory study provides an initial test of employing Q-methodology in interior design-related research studies and provides the foundation for future application of the methodology in design disciplines. Industry professionals may find that the Q-methodology process provides a systematic process for use in gaining direct input from consumers who represent their target markets during the design phase of projects in order to more effectively achieve evidence-based design.

Limitations

The use of photographs as the Q set was limiting. Considering the age of the P-set, it was important to keep the photographs to a manageable number (Q-set=36). Thus,

the use of photographs may not have comprehensively represented general style, element, and principle examples found in all CCRCs. If such a study were conducted in a different geographical location having greater diversity in the population (e.g., South Florida), developing a concourse of photographs to effectively represent viewpoints of the diverse participants might be very challenging. Geographical location was also a limiting factor of the current study. The location of the study may represent only those viewpoints of older adults in a Central Plains state of the United States and may not be representative of other geographical locations.

Future Research

This exploratory research is significant for design education and research as well as having promising applications within the design industry. Little research has been done in this area of study. The lack of seminal work indicates a need for further research regarding consumer preference, design elements and principles and place attachment. Design educators and researchers may apply the Q-methodology process to study preferences of design consumers beyond the scope of the current study. Not only is preference important to the residents of CCRCs, but it is has implications within other populations as well. Looking at preferences of design elements and principles and place attachment in other residential facilities such as group homes and institutions could lead to determining the preferences of different population groups. Also, conducting a similar study in different geographical locations may present different viewpoints, resulting in different sets of factors for different areas.

Conclusion

This exploratory study provides findings which suggest the importance of design elements and principles to aging adults who reside in CCRC facilities. In addition to design-related findings, the research method employed in the study, Q-methodology, was found to offer the opportunity for design researchers to measure the subjective preferences of consumers of design. This unique opportunity alone warrants further exploratory work within the interior design field as well as within other design disciplines. The diverse nature of the three factors (i.e., viewpoints) that emerged from this research reflect the importance of design elements and principles in relation to place attachment. This study suggests that in order for older females to more easily transition to CCRCs, more attention to incorporating familiar design elements and principles into the design of CCRC interior spaces may aid the transition.

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APPENDICES

Appendix A

Oklahoma State University Institutional Review Board

Date:	Friday, March 27, 2009
IRB Application No	HE0913
Proposal Title:	The Relationship Between Preferences of Multiple Interior Design Elements and Level of Place Attachment of Women Living in Assisted Living Facilities
Reviewed and Processed as:	Exempt

Status Recommended by Reviewer(s): Approved Protocol Expires: 3/26/2010

Principal Investigator(s):

Melinda Lyon
437 HES
Stillwater, OK 74078

Shiretta Ownbey
101 HES
Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 219 Cordell North (phone: 405-744-5700, beth.mcternan@okstate.edu).

Sincerely,

Shelia Kennison, Chair
Institutional Review Board

Appendix B

744-5053, or by email, shiretta.ownbey@okstate.edu

If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-1676 or irb@okstate.edu.

Participant Rights:	Your participation is voluntary and you may choose to stop participating for any reason at any time during the sorting procedure without any penalty to you. Your withdrawal from participation in this research study poses no risks.

Signatures:

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

_____ _____

Signature of Participant Date

I certify that I have personally explained this document before requesting that the participant sign it.

_____ _____

Signature of Researcher Date

Appendix C

Researcher's Script: Directions for Sorting Q Statements

Thank you for agreeing to participate in this study. Please make sure you have the materials in front of you. You should have a Form Board and an envelope containing 36 photos each of rooms and/or furniture. You will need a pencil later.

Step 1: Please look at the photos thoroughly and sort them into three (3) piles according to the question: **"Which of the photographs are most like your former home?"**

The pile on your right are those photos that are **most like** what you think about the question and the pile on your left are those photos that are **most unlike** what you think about the question. Put any photos that you don't have strong feelings about in a middle pile.

Step 2: Now that you have three piles of photos, start with the pile to your right, the "most like" pile and **select** the two (2) photos from this pile that are **most like** your response to the question and place them in the two (2) spaces at the far right of the Form Board in front of you in column 9. The order of the photos within the column-that is, the vertical positioning of the photos-does not matter.

Step 3: Next, from the pile to your left, the "most unlike" pile, **select** the two (2) photos that are **most unlike** your response to the question and place them in the two (2) spaces at the far left of the Form Board in front of you in column 1.

Step 4: Now, go back to the "most like" pile on your right and select the four (4) photos from those remaining in your **most like** pile and place them into the four (4) open spaces in column 8.

Step 5: Now, go back to the "most unlike" pile on your right and select the four (4) photos from those remaining in your **most unlike** pile and place them into the four (4) open spaces in column 2.

Step 6: Working back and forth, continue placing photos onto the Form Board until all of the photos have been placed into all of the spaces.

Step 7: Once you have placed all the photos on the Form Board, feel free to rearrange the cards until the arrangement best represents your opinions.

Step 8: Record the number of the statement on the Response Sheet.

Step 9: Now CLEAR your Form Board. Look at the photos once again, thinking about the question: **"Which photographs are most like your current home**?"

Repeat Steps 2 through 8.

Finally, please complete the survey attached to the Response Sheet and add any comments. Thank you for your participation!

Appendix D

Demographic Survey

1. What is your age?
   _____65-74 years
   _____75-84 years
   _____85 or older

2. What is your marital status?
   _____Single, never married
   _____Married
   _____Widowed
   _____Divorced

3. How long have you lived in your current residence? _____months _____years

4. How long have you lived in this area? _____months _____years

5. What is the highest degree that you completed (check one)?
   _____High School Diploma
   _____Associate's Degree
   _____Bachelor's Degree
   _____Master's Degree
   _____Doctorate Degree
   _____Other, please specify: _____

6. Did you ever work outside the home? _____yes _____no

7. What else would you like to say about the ideas on the statements you sorted?

Code Name:_____Phone Number:_____

Appendix E

Place Attachment Scale

Please Share Your Opinion

Instructions: For each statement below, circle the response that best indicates how you feel about your *current residence.*

1.	I identify strongly with my current home.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
2.	I get satisfaction from living here.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
3.	My current residence means a lot to me.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
4.	I do not feel very attached to my current home.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
5.	I would rather live here than any other place.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
6.	I feel no commitment to my current home.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
7.	I enjoy living here.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree
8.	My current home means a lot to me.	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree

Appendix F

Photographs with Z-Scores and Array Positions

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Sofa 1	-1.60	35	-.070	22	0.56	10
 Dining Room 2	0.84	9	0.57	13	0.49	11
 Dining Room 3	-0.21	21	-1.53	35	-0.12	19
 Dining Room 4	0.90	7	-0.21	23	1.04	7

Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Chair 5	-0.58	24	-2.15	36	1.25	5
 Dining Room 6	-0.31	23	0.26	16	-1.23	34
 Dining Room 7	-1.13	31	-0.03	21	-1.00	30
 Dining Room 8	1.59	2	-0.96	28	0.06	17

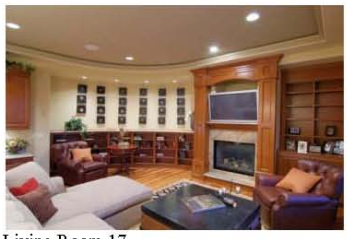
Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Dining Room 9	-0.66	27	0.49	15	-1.56	36
 Sofa 10	-1.43	33	-0.83	27	1.64	3
 Chair 11	-0.16	20	-1.36	33	-0.86	27
 Chaise 12	-1.99	36	-1.14	29	-0.17	21

Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Chair 13	0.88	8	-0.31	24	0.42	12
 Chair 14	-0.86	28	0.84	8	0.69	9
 Living Room 15	1.06	6	1.40	3	-1.16	33
 Living Room 16	-0.87	29	0.07	20	0.08	16

Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Living Room 17	-0.08	19	0.24	17	-0.14	20
 Living Room 18	0.36	15	1.22	4	-0.73	24
 Living Room 19	-1.37	32	0.80	10	0.37	14
 Living Room 20	0.58	13	-0.53	26	-1.48	35

Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Chair 21	0.69	11	-1.34	31	0.40	13
 Living Room 22	-0.58	25	0.52	14	2.05	1
 Living Room 23	1.23	5	0.17	19	-0.80	25
 Living Room 24	1.49	3	1.61	1	-0.88	28

Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Living Room 25	-1.48	34	0.19	18	-1.08	32
 Living Room 26	-0.88	30	0.59	12	0.96	8
 Sofa 27	0.39	14	-1.33	30	2.01	2
 Living Room 28	0.27	16	-0.33	25	0.21	15

Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Living Room 29	-0.58	26	0.71	11	1.20	6
 Living Room 30	1.46	4	0.84	7	-0.47	23
 Living Room 31	1.76	1	1.11	5	-0.86	26
 Living Room 32	0.15	17	1.01	6	-1.02	31

Appendix F (continued)

Photographs	Factor 1		Factor 2		Factor 3	
	Z-Score	Rank	Z-Score	Rank	Z-Score	Rank
 Chair 33	-0.05	18	-1.34	32	-0.97	29
 Chair 34	-0.25	22	-1.50	34	-0.27	22
 Living Room 35	0.80	10	1.51	2	-0.05	18
 Living Room 36	0.64	12	0.82	9	1.44	4

VITA

Melinda Wallace Lyon

Candidate for the Degree of

Doctor of Philosophy

Dissertation: THE RELATIONSHIP BETWEEN PREFERENCES FOR FAMILIAR DESIGN ELEMENTS AND PRINCIPLES AND PLACE ATTACHMENT OF WOMEN LIVING IN CONTINUING CARE RETIREMENT COMMUNITIES

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Institution: Oklahoma State University Location: Stillwater, Oklahoma

Title of Study: THE RELATIONSHIP BETWEEN PREFERENCES FOR FAMILIAR DESIGN ELEMENTS AND PRINCIPLES AND PLACE ATTACHMENT OF WOMEN LIVING IN CONTINUING CARE RETIREMENT COMMUNITIES

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Scope and Method of Study: The purpose of this study was to describe the preferences of female residents of CCRCs toward familiar design elements and principles as described in the context of place attachment. Eighteen residents of Continuing Care Retirement Communities participated in the study. Q-methodology was used to explore the opinions of residents regarding their preferences of familiar interior design elements and principles based on their former and current residences. An eight-item Place Attachment Scale was also used in this study to determine participants' positive or negative place attachment.

Findings and Conclusions: Three factors were identified using PQMethod 2.11 for analysis. Seventeen sorts were defined by Factor One, *Symmetrical Traditional*; nine were defined by Factor Two, *Naturalistic Rhythm*; and four were defined by Factor Three, *Individualistic Variety*. The first factor, *Traditional Symmetrical* was defined by a combination of symmetry and a strong use of line, natural light, color, ornamentation, and harmony incorporated into a formal, traditional style. The second factor, *Naturalistic Rhythm,* was defined by a combination of rhythm, natural light, line, color, and harmony incorporated into a relaxed, casual transitional style. The third factor, *Individualistic Variety*, was defined by a combination of color, line and pattern, but was not indicative of any particular style. All participants had positive place attachment, concluding that design elements and principles may contribute to place attachment.

ADVISER'S APPROVAL: Shiretta Ownbey