An Ethnography of Robotic Cat Therapy in a Manitoba Care Home

by

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Abstract

This research explored whether individual interactions with a robotic cat could improve quality of life for persons living with advanced dementia. The research was conducted with five women residents in a Manitoba personal care home. Theories of personhood, agitation, and nurturance provided the conceptual framework. Ethnographic research methods included video-recorded observations of each resident with the cat, semi-structured interviews with staff and family, participant observation and three sets of agitation inventories (CMAI). Findings suggested agitation was reduced, socialization increased and, with pet loving residents, nurturant behaviour was evident. The cat, as a device for increased social attention, created positive results with the non-pet lovers. Advanced dementia did not prevent the women from indicating choice. The study concluded that a robotic cat could be a useful resource for persons with advanced dementia, dependent upon prior life-style and personal choice.

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Foreword

As a young child, I frequently grew restless when chance encounters between my father and elderly members of his home community resulted in sidewalk conversations. On one occasion, after what I considered a particularily long and rambling conversation, I asked my dad how he could listen to these long stories. He responded, “Everyone has a story worthy of the telling, perhaps you’re not *listening like you should*.” That comment nurtured the emerging realization that meaning is conveyed by more than the words or the surface story. The story must be heard and understood in the context of the storyteller’s life experience and the current circumstance.

Ethnographic inquiry is “ listening like we should,” listening “through” the words into the perspective. Each story reflects a complex array of current and historical experiences that shape both the teller and the listener. An ethnographic inquiry into the lives of people living with advanced dementia in a long term care facility created the opportunity and the necessity to *listen like I should*. “Ethnographic experiences like this and the work of interpretation [are] at the heart of anthropology” (Van Esterik 2007).

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Chapter One

Introduction and Background

Creating good quality of life for the elderly, especially those isolated from their community due to significant cognitive decline and agitated or aggressive behaviours associated with advanced dementia, is an ongoing challenge for caregivers. The research presented in this thesis is an ethnographic study of the use of a robotic cat (hereafter termed *the cat*) to consider whether this device could have a positive impact on the lives of people in advanced stages of dementia. The experiences of five women who display incidents of agitation and aggression, behaviours common among people with advanced dementia, are the focal point of the research. Fieldwork was conducted at a personal care home (PCH) located in Manitoba. The home will be identified using the pseudonym White Spruce Senior Care Home (WSSCH) or White Spruce.

This research focused on two general intentions and four specific research questions which will be presented later in this chapter. One intention was to add to the understanding of people living with dementia, and the other was to consider the usefulness of *the cat* as an option to calm or prevent a cluster of symptoms referred to as the behavioural and psychological symptoms of dementia (BPSD). Psychological symptoms are long term or permanent changes that are normally identified by those familiar with the resident before dementia (Finkel et al. 1997:498). Shifts in the personality or emotional state of the individual, such as anxiety, depression, and psychosis, (delusions and hallucinations) are classified as psychological symptoms.

Symptoms categorized as behavioural are those that can be identified through observation of the resident over a relatively short period of time (Finkel et al. 1997:498). Actions considered culturally inappropriate, such as verbal and physical aggression, screaming, restlessness, wandering, and agitation, are included in this category. This research focused on observable changes in agitation and aggression.

Agitation Theory, one of the three theories that form the background for this research, addressed the underlying cause of agitated behaviours from the premise that agitations are attempts to communicate an unmet need (Kolanowski, Litaker and Buettner 2005, Kolanowski and Whall 2000, Talerico, Evans, and Strumpf 2002). Loss of speech is compounded by a lack of opportunity to develop relationships with caregivers due to frequent staff turnover, the high percentage of part-time staff, and the increasingly demanding work load expected of caregivers. Competing demands for caregiver attention and lack of long-term relationships between resident and caregiver can result in a tendency to expedite care by assuming responsibility for making decisions on behalf of the person with dementia (Kitwood and Bredin 1992, Kitwood 1997). This intrusion on personal autonomy by well-intended caregivers may contribute to an increase in frustration for people who are struggling to be understood. The frustration manifests in incidents of aggitation or aggression.

The second theory, Person-Centered Care, was first proposed by Thomas Kitwood in 1988. Kitwood wanted to develop an alternative to the clinical management of symptoms within the strict hierarchical structure of medicine. Central to person-centered care is personhood which Kitwood described as “a standing or a status that is bestowed on one human being by another in the context of relationship and social being”

(Kitwood 1997:8). Kitwood’s focus was on a holistic approach that recognized the personhood of each resident, fostered social relationships among caregivers and residents, respected each resident’s autonomy and promoted the resident’s self-reliance to the degree possible. Person-centered care, the operational care philosophy at White Spruce, has evolved to encompass four specific core values, *valuing* residents and caregivers, recognizing the *individuality* of each person, viewing situations from the *perspective* of the person with dementia, and fostering a positive *social environment* where each resident can experience relative wellbeing (Brooker 2003:216).

Nurturance, the centre of the third theory that informs this research, is variously defined as innate, universal, a driving need, a biological imperative, and culturally expressed (Van Esterik 2007, Panksepp1998:247). Without altruistic nurturance of the young, the human species would have failed to thrive. The same neurological processes that spur nurturant reactions toward children are responsible for feelings of friendship, love, and other social attachments (Panksepp 1998:247) based on the level of reciprocated social interaction (Greenberg Edelstein 1986). Within a PCH, nurturant care has a tendency to flow in one direction from caregiver to resident as work demands limit opportunities for meaningful social exchange. In general, residents with advanced dementia spend a significant part of their day without meaningful social engagement, despite the stated intention of person-centered care to create wellbeing through social experiences. If, as Nurturant Theory suggests, people have a driving need to care about and bond with others, does it follow that lack of opportunity to express nurturant feelings contributes to incidents of agitation? This research uses *the cat* as a social partner with each of the residents to consider whether there is an association between nurturance and agitation.

The relationship between the social person, nurturant needs, and experiences of anxiety were encoded in “Nurturing Anthropology,” a speech given by Penny Van Esterik (2007). According to Van Esterik the prevailing concept of the individual as an autonomous agent actually fosters violence and anxiety. Autonomy requires that the view of the other be different from self. In contrast, nurturance reflects interdependency structured on altruistic actions for another that cannot be monetarily quantified or reduced to a bartered commodity. The recognition of shared dependency and interconnectedness compels us toward non-violent and cooperative actions. Van Esterik posits that non-aggression is the original state of the human condition, “new humans first learn about the world through empathy and sympathy not violence and aggression” (Van Esterik, 2007). Van Esterik encouraged anthropologists to recognize that nurturance represents an under-theorized and neglected area of study.

> The practices of nurture have not been fully examined by anthropologists who have placed more emphasis on aggression, competition, fear and structural violence as basic to the human condition. Our intellectual fascination with aggression, suffering, violence and fear, perpetuates an androcentric bias that has devalued the study of care and nurture. Feelings of vulnerability and fear pervade our public spaces. We feel frightened of difference and look for technological solutions that don’t work. But as anthropologists, our theories continue to privilege aggression and violence

> (gendered masculine) over care and nurture (gendered feminine), when both are accomplished by men and women (Van Esterik 2007).

Van Esterik underscored the position occupied by nurturance as the common element that connects “biological/medical/cultural anthropology” and the intersection of “biology and history and culture and language” (Van Esterik, 2007), earning nurturance a unique status for inquiry in each of these areas.

Following Van Esterik’s inspiration, this ethnography uses nurturance as the entry point to observe the introduction and facilitated sessions between *the cat* and resident participants. The ethnographic approach emphasizes lived experience in a natural setting which is observed and experienced by ethnographers. Usually ethnographic studies such as this concentrate on a manageable number of participants and explore a number of influencing factors attempting to see as much as possible through the eyes of the participants and experience their lives by joining in various activities. Ethnographic data collection and analysis is labour-intensive and time-consuming when compared to discrete and controlled sets of conditions used in experiments or compared with the distinct set of questions and potential answers used in surveys. As a consequence, unlike experiments and surveys, ethnographies cannot generate statistical data nor can the findings be directly generalized to the wider population in other jurisdictions or circumstances. Instead, ethnographic research strives to describe and define events, attributes, and characteristics and offer an interpretation of these in context. Four aspects of the relationship between the women and *the cat* were addressed in this research.

Research Questions

Question One, In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with the cat?

Question Two, Will residents who have incidents of agitation, or who are socially withdrawn, experience a decrease in frequency or intensity of agitation or increased interaction in response to the cat?

Question Three, If there are observable changes in behaviour (agitation, interaction) does this suggest a change in the emotional state (cheering, calming, or upsetting)?

Question Four, Might interacting with the cat promote or instigate nurturing behaviours for resident participants?

The following section will provide a basic introduction to dementia, discuss two general strategies for managing the condition and place dementia within the context of the provincial response to the current and future needs of the elderly. This chapter concludes with an overview of the remaining sections of the thesis.

Defining Dementia

Many people experience memory loss as a consequence of aging. Normal memory loss, while challenging, does not necessarily impact autonomy or ability to live independently. For others, memory problems exceed age-related changes. Alzheimer's Canada defines dementia as a syndrome, a generic term for a cluster of brain disorders characterized by progressive cognitive decline and loss of ability to perform activities of daily living (ADL) (http://www.alzheimer.ca/en/About-dementia/Dementias/What-is-dementia). Some cognitive declines are temporary conditions, the result of an outside agent such as alcohol, a drug reaction, tumor, or vitamin deficiency. Once the cause is identified and remedied the symptoms of dementia are stopped. This research is directed toward people living with progressive non-reversible dementia, resulting from brain disease.

Alzheimer's Dementia (AD) represents sixty-four percent of all dementia diagnoses (www.alzheimer.ca/en/About-dementia/Dementias/Alzheimer-s-disease, 2013); Vascular Dementia represents a further twenty percent (www.alzheimer.ca/en/About-dementia/Dementias/Lewy-Body-Dementia, 2013). Lewy Body, Frontal Temporal, Huntington`s Disease and Creutzfeldt-Jakob are other commonly recognized dementias (http://www.alzheimer.ca/en/About-dementia/Dementias/What-is-dementia). Each of these diseases has unique causes resulting in physical changes to the brain, although they present similar symptoms.

Evaluating and Monitoring Dementia

The mini mental state examination (MMSE) and cognitive performance scale (CPS) are two resident assessment instruments (RAI) used to identify dementia and the abilities of people with dementia. MMSE, also referred to as the Folstein Test, was first introduced in 1975 as a screening tool to evaluate cognitive abilities of people with dementia by three researchers, M.F. Folstein, S.E. Folstein, and P.R. McHugh (1975). The MMSE proved to be a very effective and efficient grading system. The original eleven questions were expanded to a bank of thirty questions used to evaluate cognitive functioning in the areas of mathematics, memory, orientation to time and space, executive functioning and basic motor skills. The test is used to screen cognitive impairment and to monitor progressive loss. The cognitive performance scale (CPS), developed by Morris, et al. (1994) is used frequently in Manitoba medical clinics and long-term care centers. CPS measures ability to make decisions, express needs effectively, short-term memory skill, and ability to perform activities of daily living (ADLs) such as dressing, grooming, and eating. Although MMSE and CPS have different applications and monitor different abilities, there is a correlation between loss of memory, speech, and executive functions (decision making, learning, sequencing complex tasks) and cognitive performance. Appendix A provides a description of early stage, mid stage, late stage and end stage dementia, indicating the relationship between MMSE scores and CPS ratings.

In the early stages of dementia, while the individual still functions within the community, medical treatment is focused on delaying the progression of cognitive decline. As dementia advances and behavioural changes emerge, the focus shifts toward symptom management (Gellis et al. 2009: 29). Health services, delivered in the community, provide practical care and social support to the individual with dementia and to family caregivers. Pharmacological treatments that are effective initially in delaying the progression of dementia are ineffective in advanced stages. Furthermore, drug interactions may result in BPSD incidents (Gellis et al. 2009: 30).

Prevalence of BPSD

Ninety-five percent of people with dementia will experience BPSD, with depression emerging as the most common early stage symptom (Gellis et al. 2009:29). As dementia progresses other symptoms emerge creating a more complex set of demands on caregivers. Within the confines of a PCH, some forms of BPSD create stress for other residents and visitors, in addition to the caregivers and the person acting out the symptoms.

The six most prevalent expressions of BPSD are listed in Table 1 with indications of the percentage of people who display each form.

Table 1 Percentage of Most Frequently Displayed BPSD

BPSD	Agitation	Wandering	Depression	Psychosis	Screaming	Violence
%	75%	60%.	50%	30%	20%	20%

Source: (Mega, Cumming et al. 1996)

Among the ninety-five percent of the population with dementia who have BPSD, seventy-five percent will become agitated (Mega, Cumming et al. 1996). Agitated behaviours are considered to reflect feelings of anxiety characterized by restlessness or impatience. Wandering is the second most common behaviour evident in sixty percent of the population. In a PCH wandering is especially problematic when it results in entering other resident`s rooms, disorientation in a familiar environment, or attempts to leave secured areas. Depression, one of the earliest symptoms of dementia, will become a persistent state fifty percent of the time. Almost one-third of this group will experience psychotic episodes, including delusions or paranoia. One out of five residents will scream and an equal number will act out violently. Screaming and violence, although confined to a smaller portion of those with BPSD, contributes to a negative home environment which impacts other residents, caregivers and visitors.

Approaches to Managing BPSD

Incidents of BPSD may be managed following a medical model or may be approached from a person-centered perspective. The medical model reflects a clinical approach focused on monitoring the progression of dementia and on symptom management. Treatment includes a range of pharmacological options, physical restraints, and a variety of modalities or therapies that incorporate sensory stimulation. Under the clinical definition, *the cat* is considered a sensory stimulation technique. Person-centered Care, the model that guides this research, is an holistic approach to the needs of the individual, including a shift toward creating a richer more stimulating environment. Dementia becomes a factor in providing care, but the individual is the primary focus. Within the framework of PCC *the cat* is a social agent encouraging a relationship where the residents can express social personhood.

Future Issues in Dementia Care

The wave of aging baby boomers is projected to dramatically increase the number of people with dementia.. A report prepared for the Alzheimer Society (2009), estimates that the annual number of diagnoses of dementia is expected to more than double in the thirty year period from 2008-2038 as the baby boom generation ages followed by decline. According to the study, without the benefit of effective interventions or a cure, annual provision of care will result in a tenfold increase in costs, while the hours dedicated to informal care will triple.

Table 2 Comparing Dementia from 2008 to 2038

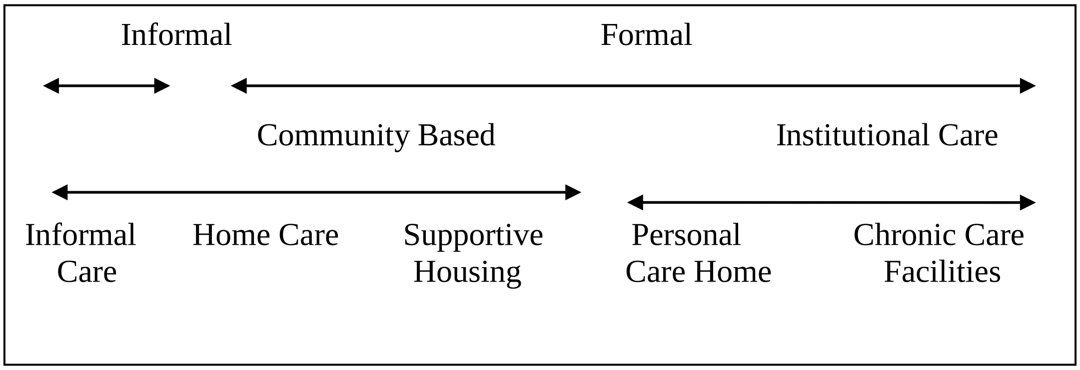
	2008	**2038**
New diagnoses	103,700	257,800
Informal care hours	231 million hours	756 million hours
Economic impact	$15 billion	$153 billion
Total # People with Dementia	480,600	1,125,200

Source: Rising Tide: The Impact of Dementia in Canada (Alzheimer Society 2009)

Table 2, Comparing Dementia from 2008 to 2038, indicates projected changes in four catagories, new diagnoses per year, informal care hours, economic impact, and total number of people living with dementia. Current and future care needs are addressed through government policies which set direction. Two Manitoba government departments, Healthy Living and Seniors and Consumer Affairs, and Manitoba Health cooperate to create the framework for social programs, services, and initiatives, which are operationalized at the local level by one of the five regional health authorities (RHA) that are responsible for implementing health care in their jurisdictions. The mandate for the Manitoba Department of Health reflects a policy vision for responsive health care, "To meet the health needs of individuals, families and their communities by leading a sustainable, publicly administered health system that promotes well-being and provides the right care, in the right place, at the right time" (www.gov.mb.ca/health/about.html). Community based programs enable seniors to function independently or with appropriate levels of assistance, while remaining autonomous agents. These services are of direct benefit to older Manitobans and of support to caregivers by providing them with various assessments, homecare, family respite, counselling, nutrition, and information programs. Some of the services are provided without cost, while others such as adult day care or respite care are on fee for service.

A care continuum is available designed to address the needs of an aging population (Figure 1). This specialised group of services exists in concert with general health care services available to all Manitobans. Figure 1 represents the care continuum available in Manitoba designed to address the needs of an aging population. This specialised group of services exists in concert with general health care services available to all Manitobans.

Figure 2: Manitoba's Continuum of Care



Source: (Chateau et al. 2012: 5.)

Care is defined both by where the recipient lives and who provides the care. Those who need care live either in community or are institutionalized. Care providers are classified as either informal or formal. Informal carers are family members, social networks or private arrangements. Formal care is provided through government services, frequently by people with specialized training. Formal care in Manitoba is available while in community as well as in health institutions. In community means in the family home or in an assisted living facility. Institutional care refers to ninety-eight proprietary (for profit) and non-proprietary personal care homes and chronic care facilities operating under the umbrella of a RHA. PCHs can be either secular or faith-based, and may focus on a particular ethnocultural or language group.

There are a total of 9,666 long-term care beds in Manitoba. 5,406 beds are in the Winnipeg Regional Health Authority (WRHA) with the remaining 4,260 beds in areas defined as rural locations regardless of the size of community (Chateau et al. 2012:9).

Current policy establishes a target for long-term beds at a ratio of 120 beds per 1,000 people over the age of seventy-five (Frohlich et al. 2002:2). Aging in place strategies enable people to remain in the community longer, which drives the need for community services, which offsets or delays the need for long term care. The provincial occupancy rate is ninety-seven and three quarters percent (Chateau et al. 2012:9). Women over the age of eighty-five years of age represent the majority of residents currently in long-term care (Chateau et al. 2012: 25). In predicting the need for long- term beds, changes in family structure need to be considered. Single childless people have a higher probability of entering a PCH at a younger age and remaining there longer (Chateau et al. 2012: 63).

The cost of long-term care is shared between the provincial government and the resident in care. Rates, calculated annually, are applicable to the twelve month period from August 1 to July 31. The daily rates for 2011-2012 ranged from thirty-one dollars to seventy-four dollars. The individual's portion of the daily charge is based on after-tax income using one of three calculation categories, single resident, resident with a spouse or partner living in the community, and resident whose spouse or partner is in long term care (www.gov.mb.ca/health/homecare/guide.pdf).

Admission to a Manitoba PCH is based on an assessment of the care requirements of a potential resident. Assessment requests can be made by the individual, a formal care provider, or a family member. The standardized assessment (Appendix B) is used to gauge the amount of assistance a resident requires in six areas divided between two categories, assisted daily living (ADL) and professional services. Four ADL areas are listed as bathing and dressing, assistance with meals, mobility issues, and elimination.

Professional services are the need for professional interventions (oxygen therapy, skin care, recording vital signs) and whether behaviour management or supervision is required. Each of the six areas is assigned one of five dependence ratings--independent, minimum dependence, partial dependence, maximum dependence, or chronic care. Care levels are derived from combinations of dependence ratings. A multi-disciplinary panel will review the assessment to determine whether institutional care is warranted.

Within institutions, staff time is budgeted, based on twenty-four hour cycles. Level I care is allocated thirty minutes per cycle. Level II increases to two hours. Levels III and IV are allocated three hours and thirty minutes. Admissions to a PCH, as a result of successful aging in place strategies, are currently later than in previous decades and require a higher level of care (Frohlich et al. 2002:5). Comparing data from 1990-1991 and 1999-2000 indicates a reduction from thirty-seven percent to twenty-eight percent in the number of admissions requiring Level II care, while Level III increased from six percent to thirty-three percent of the admissions and level IV increased from seven percent to thirty-three percent (Frohlich et al. 2002:5). Considering that Level III and IV require three and a half hours of personal attention daily compared to two hours at Level II, the increase in level of care increases the work load on caregivers, unless the caregiver patient ratio changes accordingly. Time pressures contribute to a reduction in work satisfaction and an increase in work stress for caregivers. The relationship between caregiver burnout and work stress (Wada and Shabata 2008) is discussed more fully in Chapter Two.

Thesis Outline

The literature review in Chapter Two introduces the development and interpretation of the key concepts of personhood, person-centered care, nurturance, and agitation. Several studies are included that focus on changes in communication with advancing dementia. A number of the articles feature research using dolls, stuffed and live animals or robots. These articles are directly relevant to the research undertaken in this thesis. Chapter Two introduces concerns related to infantilization, the tendency to treat people with dementia as children, and several articles that explore the ethics of artificial companionship and vulnerable adults. A summary of the identified research gaps that are to be addressed by this research concludes with the literature review leading into Chapter Three describing the research design and methodology.

In Chapter Three, Methodology, the processes used for data collection and analysis are discussed. Standard ethnographic research tools, semi-structured interviews and participant observation are described, as are the video recorded sessions and the Cohen-Mansfield Agitation Inventory tool (CMAI) developed by Jiska Cohen-Mansfield (1991). *The cat* is presented with a discussion of its strength and weaknesses as a research tool. To complete this section, two additional tools developed to assist with identifying and defining nurturant behaviour are presented. The implementation plan detailing day-to-day research activities precedes the analysis process used to distil a significant amount of raw data into related themes clustered to address the research questions.

Chapter Four moves from process to the research arena and to the introduction of the participants. Access to White Spruce, the staff and residents was negotiated through two approval processes involving an application and an ethics review, one with the university and the other with the Board and management of White Spruce. The ethics review is the application of Canadian guidelines for research projects where human research participants are involved.

The participants are grouped into three participant categories, resident, caregivers and family. The resident participants are presented as a series of case studies with sufficient detail to provide a glimpse into the unique character and personality of the five female participants. The women are given the pseudonyms Victoria, Helen, Bridget, Jean, and Rhonda or are referred to collectively as the women or the resident(s). In contrast to the detailed individualized attention given to the residents, the participants in the caregiver and family categories are presented in aggregate or summary.

In Chapter Five, Findings and Discussion, sections are divided according to responses to the research questions, topics arising from the interviews, evaluation of the responses to the research questions and an evaluation of various aspects of the research including the research tools and processes. One portion of Chapter Five is devoted to the loneliness of adults in long term care, an emotional topic for caregivers.

Chapter Six, the concluding chapter, presents a summary of the project, returning to the initial purpose as stated by the four research questions and the theoretical framework that holds it all together. In the process of gathering and analyzing the data there were unexpected observations and insights which shaped the final conclusions about personhood and people living in advanced stages of dementia. These serendipitous discoveries influenced some of the recommendations and the final summation.

Chapter Two

Literature Review

The literature reviewed presents supportive and contrasting perspectives related to five primary topics, the perception of aging and dementia, personhood and person-centered care, nonverbal communication, agitation, and nurturance. Some of the literature is current, taken from proceedings from recent conferences, while articles written during the 1970s presented seminal work on nurturance and person-centered care. Studies similar to this research included people in dementia interacting with live or plush animals and dolls. Interactive studies were conducted in long term care facilities with groups of elderly residents with varying degrees of dementia. Concluding literature reviews are insightful commentaries on the ethics of using artificial animals with people who have dementia. Final paragraphs are a summary of the research gaps addressed by this ethnography.

Perceptions of Aging

Cultural constructs, while not the focus of my research, reflect the definition of the person as well as societal responses to the needs of the elderly. In Japan, for example, it is considered a moral and ethical responsibility for a citizen to take care of his or her own physical and mental wellbeing in order to avoid becoming a burden on the family or the government (Henderson and Traphagan 2005:272). A similar attitude is reflected in the term “successful aging” (Franklin and Tate 2009:6) introduced to Western cultures in the 1950s, indicating a move toward preventing illness and conditions that are associated with advancing age.

Among the various American Indians and Canadian First Nations peoples are cultural examples where age-related cognitive decline is viewed as a natural and positive state. Traditional First Nations cultures were respectful of the older generation, especially of wisdom gained through life experience. Consequently, cognitive changes are viewed with deference. No one, other than the elder, is expected to understand the actions of those nearing death (Henderson and Traphagan 2005:273). Behaviours considered abnormal at any other stage of a person's life, are deemed appropriate preparation for crossing over to the spirit world. Henderson and Traphagan used the term "supernormal" to define in an elder's life what in Western cultures would probably be labelled as BPSD. "Supernormal… indicate[s] that an extraordinary phenomena is taking place. An elder with a special condition has the capacity to access life after death prior to death" (Henderson and Traphagan 2005:274). Hallucinations, disorientation, language and communication problems are behaviors of dementia viewed as *supernormal,* while other aspects of dementia or aging such as incontinence and forgetfulness are classified as just unfortunate situations. The Shuswap people of British Columbia do not have a word in their language for dementia. Their closest term translates as "the lights went out…[It] indicates a spiritual state in which one's mind is travelling or one is speaking with the ancestors" (Hulko et al. 2010: 332).

A number of theories of aging have been developed to explain social engagement among aging people in the Western world. Gerotranscendence Theory and its predecessor Disengagement Theory are somewhat aligned with the North American aboriginal concept of old age as time in preparation for death (Tornstom 1997, Tornstom and *Törnqvist* 2000). Tornstom and *Törnqvist* (2000) refer to this as the older adult's "inherent drive to disengage from society" (Tornstom and *Törnqvist* 2000:18). Disengagement theory states that there is a natural division that happens refers to beneficial Gerotranscendental behaviour is characterised as a purposeful exclusion from the social or material world in deference to spiritual or contemplative pursuits. Older people display a greater need for solitude with past and present blending together (Tornstom 1997:151, Tornstom and *Törnqvist* 2000:15).

Activity or Engagement Theories stress involvement in the social world as integral to self-expression and maintenance of a sense of self (Franklin and Tate 2009:7; Tornstom and Tornqvist 2000:19). Although retirement frequently suggests undemanding activities, Continuity Theory posits that aging does not change the person. Behaviours, preferences, and essential aspects of self-expression remain evident throughout the life course (Franklin and Tate 2009:7; Tornstom and Tornqvist 2000:19).

Concepts of aging were impacted by post-WWII Canadian government policies intended to facilitate younger people entering the work force by encouraging older people to retire and by medical advances in diagnosis and treatment of dementia. Policies established by government sponsored low income retirement plans and mandated a specific retirement age. Many people who were encouraged to retire at the age of sixty-five were marginalized to the economic and social sidelines (Dewing 2008:4). Smaller mobile families, economic constraints, and underfunded social and health care services, and a rapidly aging population, became the "problem of the elderly" (Dewing 2008:4). As a result, *aging,* rather than a normal aspect of life, became a "serious contemporary social issue" (Dewing 2008:4).

In the late 1970s, technological and demographic changes, as well as cultural perceptions, significantly increased the number of dementia diagnoses. Advances in screening techniques made it possible to diagnose dementia at earlier stages (Dewing 2008:4). Secondly, Alzheimer's dementia, originally a young person's disease diagnosable only through post-mortems, was expanded to include older people and other forms of dementia. The rapid shift in the number of people with dementia created the stigma of a "global problem connected with aging" (Dewing 2008:4). This pandemic approach to dementia effectively moved all forms of cognitive decline out of the realm of natural aging and into the medical world of disorder and disease. The presence of dementia within the aging population became a stigma, "a category of differentiation, discrimination, and ascription of cultural values" (Henderson and Traphagan 2005:272). The result was a "malignant social psychology" toward people who are older or confused (Kitwood and Bredin 1992:284). Kitwood and Bredin stated that with the onset of dementia the "us/them" and "alright/damaged" dichotomies marginalized people with dementia, a gap that widened as symptoms progressed (Kitwood and Bredin 1992:272-3)

The medical model treats dementia as a disease, separating the person from the condition of dementia with the expectation that the disease will follow a predictable progression and prescribed custodial care (Taft et al. 1997:14). Clinical treatment focuses on controlling common behaviours, not the idiosyncratic displays of the individual. In institutional settings, custodial care can include the use of physical restraints or pharmacological options to manage problematic symptoms. There are a number of problems associated with medication as a means to control symptoms of agitation or aggression. Medications can interact with other drugs or have negative side effects. In addition, it is difficult to determine appropriate dosages for frail individuals and dispensing medications requires access to appropriately trained care-givers (Gellis et al. 2009). The reliance on clinical treatment coupled with smaller geographically distant families creates a growing demand for long term care in institutional settings. In the medical model, care reflected a loss of self determination for the resident and a range of services where seniors become passive recipients rather than active agents in their own lives (Dewing 2008:4).

Personhood

Thomas Kitwood (1997a) promoted the importance of active agency and social relationships throughout the life course regardless of physical or cognitive impairment. Care givers and families were encouraged to remember the person at the center of the aging process. Personhood is “a standing or status that is bestowed upon one human being by others, in the context of social being. It implies recognition, respect and trust” (a 1997:8). Kitwood’s (1997a) definition suggests that personhood is an achieved status which raises the question, does the person cease to exist in the absence of social relationships? Buron (2008) approached personhood from the perspective of growing awareness, cognitive development, and enculturation leading to the fullest expression of the self. Categories of personhood are defined as biological, individual, and social (Buron 2008:324). The following definitions of each stage of personhood suggest that personhood is an ascribed characteristic of all humans.

Biological personhood refers to a physical body with the aspect of sentience, the capacity of the senses to perceive, to experience pain, and to experience pleasure, as the essential condition. (Buron 2008:324). The second level, *individual personhood*, is characterized by self-expression and independent agency. This stage evolves as the individual develops cognitive function, temporal awareness and communication skills (Buron 2008:325). Over time, personality emerges, allegiance to the cultural value system becomes evident, and self-worth is defined within the cultural framework. The development of communication is considered key to self-expression. Buron's (2008) *social personhood* remains consistent with Kitwood's (1997a) definition that personhood is shaped by the social roles that have been ascribed or achieved during the life course (Buron 2008:325). Buron argued that personhood is lost, in dementia, in reverse order to that in which it was acquired (Buron 2008:325). *Social personhood* is lost first, followed by *individual personhood*. Loss of *biological personhood* occurs at the end of life. The loss of social personhood begins with the onset of memory problems. Initially, the social network will compensate for the individual's difficulty in fulfilling expectations in the social arena. Eventually, the individual becomes increasingly isolated. The social circle shrinks to include family and a few friends. The individual retains important social designations such as mother/father although the responsibilities associated with the roles are lost (Buron 2008:326).

Progressive cognitive decline frequently culminates in a transfer to a PCH where, as Buron indicates, the individual is physically as well as socially isolated (Buron 2008:325). Autonomy and choice are reserved for a few perfunctory options such as whether to have more tea. Loss of decision making authority is the beginning of the erosion of *individual personhood* (Buron 2008:325). While communication is still possible, personal relationships develop with other residents and caregivers. Care can be tailored to the individual's articulated preferences (Buron 2008:325). Reciprocal communication is vital for maintaining individual personhood just as establishing and maintaining a social environment is necessary for the expression of social personhood. As Buron (2008) points out, frequent staff turnover and limited time to spend with residents erodes the ability of caregivers to learn to communicate with the residents. When communication becomes a barrier between the resident and the caregiver, there is a tendency for caregivers to concentrate on tending to the obvious physical needs which then reduces the resident to a biological person (Buron 2008:325).

Person-Centered Care

Person-centered care is described as care that "acknowledges the full personhood of the individual to ensure that people living with dementia are included, heard, and understood… and is provided through … knowing the resident in detail and … understanding the resident through empathy" (Buron 2008:326). Personhood and the foundations for person-centered care reflect a desire to develop a cohesive working theory of dementia care responsive to the individual resident's autonomy and adaptable to the resident's remaining cognitive ability (Kitwood and Bredin 1992:285). When the existing clinical approaches rely on psychiatric and psychological therapies such as Reality Orientation, the focus shifts to correcting mundane facts in an attempt to keep residents rooted in the present (Kitwood 1993:52). This type of therapy "makes the point abundantly clear...[t]he problem is located with *them*" (Kitwood and Bredin 1992: 272). Until a comprehensive theory was developed, person-centered care lacked credibility and remained a collection of "folklore and practical approaches adorned with the term 'therapy'." (Kitwood and Bredin 1992:269). The challenge for the creation of person-centered care was to dissolve the us/them divide as much as possible, while not losing sight of the genuine issue of pathological neurological damage (Kitwood and Bredin 1992:273). However, research conducted by Kitwood and Bredin (1992) with two groups of residents with comparable levels of cognitive impairment suggested neurological damage could be reversed. One group participated in forty hours of activities which included frequent assessments. The second group had severely limited access to activities and assessments. The experiment continued for an extended period of time. At the end of one year, further decline in cognitive abilities was noted in two people from the active group compared to nine from the inactive group (Kitwood and Bredin 1992:279). Positive outcomes for the stimulated resident group were the re-emergence of "social skills, independence and continence" which, Kitwood and Bredin stated, indicated restoration of aspects of the mind (Kitwood and Bredin 1992:279). Examination of the brains of rats who participated in a stimulated environment indicated new neurological development suggesting that the positive effects of person-centered care were emotional as well as physiological. The outcome of this aspect of the study indicates the potential for an aging brain to continue to learn and adapt to a stimulating environment (Kitwood and Bredin 1992:279). Success in person-centered care is predicated on caregivers who understand that "… personhood needs to be continually replenished… selfhood continually evoked and reassured" (Kitwood and Bredin 1992:285). Care approaches that reflect a positive regard for the resident and those which validate the resident's experience become mechanisms to uncover unmet needs articulated in actions and utterances (Kitwood 1993:53). Kitwood (1993) was among the first to promote the idea of body language as a communication tool, suggesting a direct link between action and an attempt to communicate need. Adapting care strategies to include nonverbal communication emerges as an important aspect of person-centered care.

Nonverbal Communication

The literature reviewed to this point focuses on cognitive function as the essential component to develop and to maintain social relationships necessary for bestowed social personhood. Nonverbal communication, which includes “body movement, facial expression, touch, physical appearance, personal space, and vocal communication such as pitch, intonation, and speech rate,” is credited with contributing as much as ninety-seven percent to the meaning expressed and understood in a spoken message (Hubbard et al. 2002:156). Pia Kontos (2004) in ethnographic exploration of selfhood in dementia confronts the assumption that self-expression is the sole domain of cognitive processes. The separation of body and mind typical of Western cultures, according to Kontos, results in the failure to acknowledge the kinetic aspects that are a vital aspect of communication (Kontos 2004:830). Selfhood, from Kontos’ perspective is an embodied experience and, through the acknowledgement and awareness of body language, people in dementia maintain individuality. Kontos was able to identify various ways the participants in her study continued to make personal choices and to interact socially (Kontos 2004:835). Anthropologist Janelle Taylor’s (2008) experience with her own mother supports Kontos’ (2004) research. Among Taylor’s colleagues and acquaintances, the most expressed concern related to her mother’s ability to recognize Taylor as her daughter and whether her mother called her by name (Taylor 2008:313). Taylor discovered that despite her mother's severely compromised cognitive function, she was able to care for her daughter. With the simple act of patting her hand and providing physical warmth, Taylor's mother connected emotionally and intimately, caring for her daughter (Taylor 2008:313).

An ongoing issue with research on dementia or cognitive disorders is the lack of the insider's perspective as researchers rarely directly experience the process. Jill Bolte Taylor (2006), neuro-anatomist, is an exception. Bolte Taylor suffered a severe left hemisphere brain hemorrhage which resulted in the total, albeit temporary, loss of left brain function. For Bolte Taylor this meant loss of all aspects of language. Not only could she not speak, but words had no meaning for her. However, her right brain remained intact and became her dominant interpretive hemisphere. Consequently, Bolte Taylor became more acutely aware of "subtle cues of language including tone of voice, facial expression, and body language" (Bolte Taylor 2006:34). Bolte Taylor reacted to her care-givers based on the way her right brain interpreted these subtle cues (Bolte Taylor 2006:83-84). Kitwood suggested that a similar hypersensitivity to the body language of others existed among the residents (Kitwood 1993:64).

Body language is an evolving means of communication for people with dementia, particularly as hearing loss and speech difficulties create reluctance to engage others in conversation (Hubbard et.al 2002). The loss of verbal cues places greater emphasis on body language as a shared system of communication (Hubbard et al. 2002:156). Residents with dementia used body language for practical reasons, such as patting a catheter bag to signal to caregivers that a trip to the bathroom was required, illustrating that the resident acted within a communication construct of shared meaning, because others interpreted the intention appropriately (Hubbard et al. 2002: 159 and 161). Understanding nonverbal communication requires attention to the local culture and social situation as well as sufficient familiarity with the person in order to recognize the nonverbal communication skills used by this individual. An examination of the behaviour in context leads to understanding (Hubbard et.al 2002:164; Kolanowski and Whall 2000:68).

Agitation

Agitation and aggression studies undertaken by Kolanowski, Litaker, and Buettner (2005), Kolanowski and Whall (2000), and Talerico, Evans, and Strumpf (2002) explored the relationship between the loss of verbal communication skills and the likelihood of unmet needs manifested as depression, agitation, aggression or passivity. Struggles to find alternative forms of communication can be misunderstood by caregivers and labeled as inappropriate behaviours or aggressive actions (Kolanowski et al. 2005:220). Two definitions for agitation, a clinical term for a group of symptoms associated with an underlying dementia, were identified in the literature review. The first definition reflects a clinical perspective. Researchers Howard, Ballard, O’Brien, and Burns (2001) identified pacing, wandering, aggression, and shouting among a cluster of behaviours associated with agitation which they define as “…excessive motor activity with a feeling of inner tension and … characterized by a cluster of related symptoms including anxiety and irritability, motor restlessness and abnormal vocalizations” (Howard et al. 2001:741). Howard’s research group concluded that not all displays of agitation required treatment, positing that some agitated responses may be appropriate based on the environment or situation (Howard et al. 2001:716). In situations where the agitated behaviour needs to be treated, Howard et al. (2001) proposed three key management goals. First, ensure that the environment is comfortable and functions well for the individual. Second, non-pharmacological solutions should be the usual response. Lastly, when pharmacological options are necessary, the lowest possible doses should be administered (Howard et al. 2001:715).

The second definition of agitation was developed in 1986 by Cohen-Mansfield and Billig. They defined agitation as "any inappropriate verbal, vocal, or motor activity that is not judged by an outside observer to result directly from the needs or confusion of the agitated individual" (Cohen-Mansfield 1991: 2). The Cohen-Mansfield Agitation Inventory (Cohen-Mansfield 1991) (CMAI) was developed to monitor changes in BPSD over a series of two week intervals (Appendix C). Identifying the types of agitation displayed by a resident can be a clue to psychological condition, assist with the identification of stressors, or indicate progressive dementia.

The Need-driven Dementia Compromise Behaviour Model (NDB) [1] is a framework in use by caregivers to evaluate potential causes for behavioural symptoms of agitation and passivity (Kolanoswski and Whall 2000). The model is a significant indicator of a shift in attitudes toward behaviours associated with dementia. "[The] model changes the prevalent pejorative view of these behaviors as disruptive or disturbing to that of behaviour as signifying potentially understandable needs, that if responded to

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[1] NDB is a similar approach to the P.I.E.C.E.S algorithm (sequence of steps) used at White Spruce to determine underlying causes for agitated behaviour. P.I.E.C.E.S will be

appropriately will enhance quality of life” (Kolanowski and Whall 2000:67). Within the model, behavioural symptoms are described as agitated or passive. Causal factors are classified as background or proximal. Background conditions slowly change behaviour. These conditions are “neurological factors, cognitive abilities, health status and physical functioning, and psychosocial factors, including pre-morbid personality” (Kolanowski, Litaker, and Buettner 2005:220). Proximal factors including “physiological and psychological need states and characteristics of the physical and social environment,” are apt to result in immediate and temporary changes to the residents’ behaviour (Kolanowski et al. 2005:220). Agitated behaviours, verbal, vocal or motor activities garner attention while passive behaviours including depression are easier to overlook (Kolanowski et al. 2005:220). Recent research conducted by the Talerico team (2002) analyzed various forms of agitated behaviours discovering a relationship between depression expressed physically and disorientation expressed verbally (Talerico, Evans, and Strumpf 2002:169). Combining the results from the research teams led by Kolanowski and Talerico implies that unmet needs are likely manifested as either agitated or passive symptoms. Agitated behaviours can be further divided between physical actions and verbal expression. Unmet needs that stem from depression will be a physical form of agitation, while needs resulting from confusion or disorientation will be verbalized (yelling, calling, screaming and chatter).

Summarizing the management of BPSD discussed in the literature reviewed to this point indicates that the process is complicated because the aetiology of agitated behaviours can be compound and varied, resulting from physical, psychological and environmental factors. Non-pharmacological treatments are diverse, with the objective of stimulating one or more of the senses of touch, smell, sight, and hearing. Therapy options include music, aromatherapy, light, massage, yoga, and pet. Pet-resident relationship is the focus of this research. Positive aspects of the animal-human bond for residents are well documented both in and outside of long-term care. Pet-related literature I reviewed was generally focused on attributes other than pleasure in the relationship of residents with live and artificial animals.

Pet Therapies

Greer, Pustay, Zaun, and Coppens (2001) explored two aspects of pet therapy relevant to my research. First, do people in dementia differentiate between plush animals and live cats? Second, does the presence of either impact on the amount of conversation among participating women? Six women in moderate stages of dementia participated. The participants were divided into two groups of three. Baseline data were collected in initial sessions without either live or plush cats present. The two groups alternated between two live cats and two plush cats with a withdrawal session interspaced throughout. One group started with live cats and the other with plush animals. Researchers were present during the interactions as passive observers. Data collection focused on utterances, measured meaningful information units (MIU), the number of words used and whether the participant initiated conversations. An acceptable MIU had to convey meaning relevant to the conversation and not be repetitive (Greer et al. 2001:170). Problems arose in the data collection process. Discounting sounds, repetition, sounds or phrases that were considered off topic may have resulted in unrealistic data expectations for people in moderate dementia. Greer et al. (2001) reported difficulty keeping the group who started with the live cat motivated. Several of the women from that group refused to continue with the research after the initial session. Participants from both groups appeared to “doze off” during the sessions (Greer et al. 2001:170). No explanation or hypothesis for this development was offered other than to conclude that active participation by the researchers would have been a benefit to keep the participants engaged.

Data was analyzed, based on group as well as individual results. An increase in communication was noted among the women who continued to participate, when compared to the baseline testing period. The initial interaction was deemed the most successful in generating MIUs. The increase in words continued after the cats were removed, although MIUs declined slightly. Interacting with the live cat had a higher number of overall MIUs, and Greer et al. (2001:165-167) attributed the increase to the cat’s ability to initiate interaction. Group data analysis indicated that both groups had an increase in MIUs with their first interaction regardless of whether they started with the live or plush cats. On average over both groups and with both stimuli, the live cat sessions resulted in a greater number of MIUs. Analysis of individual responses indicated that the two women who were in the most advanced stage of moderate dementia reacted well to both types of stimuli. Researchers concluded that at more advanced stages of dementia residents did not differentiate between live and plush cats and either option had positive results in MIUs (Greer et al.: 2001:169).

Ward, Vass, Aggarwal, Garfield, and Cybyk (2008) conducted a three year study of resident communication patterns. Although this study did not include live or plush animals, the researchers did measure communication. Ward et al. (2008) expanded their study to incorporate a wider range of motion and sound citing, as an example, one participant who repeatedly uttered the same two word phrase. Cues to her emotional state or physical need were indicated through her tone or expression (Ward et al. 2008:642). The results of this study indicated similar and unanimous “intentional, sustained and interactive self-expression” identified among the participants (Ward et al. 2008:643). Losing language skills is an expected consequence of advancing dementia. The idea of aging as a return to childhood has been endemic throughout history. A consequence of this position is to interpret sounds, repetition, and disjointed phrases as childish babble rather than as an adult attempting to communicate.

Coste (2003), author of Learning to Speak Alzheimer`s, devoted a chapter to understanding the voice of the person with AD. According to Coste, words needed to be mined for meaning, body language interpreted, and emotions acknowledged. Coste`s husband used the word *smish* for food (Coste 2003:79). Smish would not have been categorized as an MIU as defined by Greer et al. (2001), despite conveying meaning understood by Coste. Coste stressed that communication with a person with dementia needs to maintain the person`s self-esteem through the preservation of their dignity (Coste 2003:81). Browne and Shlosberg (2006) support Coste`s observations for understanding the communication of those affected by AD. Their research added another layer of depth to the concept of MIU. Browne and Schlosberg noted that the actual words spoken may be a code for an underlying emotion. As an example, the vocalized desire to return to the parental home may be a codified expression for feelings of insecurity (Browne and Shlosberg 2006:137).

The shift in focus from meaning and tone to emotion raises the question of whether emotions can be reliable conveyors of meaning, considering the damage to the brain characteristic of advanced dementia. Magai, Cohen, Gomberg, Malatsta, and Culver (1996) studied emotional responsiveness in mid to late stage dementia patients. Magai et al. (1996) concluded that by analyzing facial movements for some of the participants, it was evident that an intact and functioning emotional system existed even at late stages. One prominent example was that one third of all participants registered sadness at the end of a visit with their family members (Magai et al.1996:389). Spoken words, even among the cognitively able, relay only a small fraction of the message, while body language represents fifty-five to ninety-seven percent of communicated meaning (Hubbard et al. 2002:156). Person-centered care philosophy is redefining relationships between caregivers and residents, building more on "emotional, sensitive, and empathetic interactions rather than on verbal expressiveness" (Hubbard et al. 2002:164).

Robotic Pet Therapy

Social commitment robots[2] were devised as a substitute for live pets in therapy. These interactive devices create the opportunity to provide "the mental benefits of joy, happiness, relaxation…through physical interaction" (Wada and Shibata 2008:259). While the calming effect of interacting with robots is an important consideration when working with people with dementia, many of the research articles in this section focused as well on the robot's ability to encourage communication among residents. A selection of robotic pets, a seal pup named Paro, a cat named NeCoRo, and an interactive doll

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[2] Roger, Guse, Mordoch, and Osterreicher (2012) used the term "social commitment robots" (Roger et al 2012:88) rather than "mental commitment robots" the term used by Japanese researchers (Wada and Shibata 2008:259). Social commitment is the term adopted for this thesis.

named My Real Baby, are presented in the following literature reviews. Appendix D includes a picture of these interactive devices, including Yume Neko *the cat*, used for my research. NeCoRo used by Liben and Cohen-Mansfield (2004) is an earlier version of a robotic cat then the one used in my research.

NeCoRo and the My Real Baby doll were able to move their heads and make sounds but unable to respond to the degree of a sophisticated robot like Paro (Kidd, Taggart, and Turkle 2006:3976). Paro was used by the Japanese research teams (Wada and Shabata 2008; Wada, Shibata, Saito, and Tanie 2004, Wada et al. 2006) and American research teams (Kidd et al. 2006; Turkle, Taggart, Kidd, and Dasté 2006; Taggart, Turkle, and Kidd (2005)). The data from Taggart et al. (2005) contributed to a paper discussing the roll of robots with children and older adults, authored by Turkle et al. (2006). Recently, Roger, Guse, Mordoch, and Osterreicher (2012) presented an overview of a series of their pilot studies engaging students, residents, and adult family members interacting with Paro to explore clinical applications for social commitment robots in Canada.

Libin and Cohen-Mansfield (2004) considered that there would be situations where a live animal would not be the preferred option for a care home. The presence of a live animal in a care home requires staff time to tend to the animal, danger of allergies to animals with some residents and staff, and potential for injury to the resident, staff, or animal (Libin and Cohen-Mansfield 2004:111). Their research compared the reactions of cognitively impaired Americans when interacting with a plush toy cat and with NeCoRo in three areas using quantitative analysis. What effects would occur? Is the robot more effective than the plush cat? To what degree does the communication between the robotic or plush cat and the resident depend on the resident’s cognitive ability? (Libin and Cohen-Mansfield. 2004:112). The nine women in their study were between the ages of eighty-three and ninety-eight, with age -related dementia ranging from mid to late stages. The cats were similar in size, weight, and outward appearance. Each resident had one ten minute interaction with each of the cats. Statistical analysis suggested a significant change from the baseline ratings of pleasure and interest. Seventy-five percent of the residents chose to hold the plush cat, while only twenty percent of the residents held NeCoRo, but there was slightly more interaction with NeCoRo (Libin and Cohen-Mansfield 2004:113). When age and cognitive function were taken into consideration, there appeared to be a propensity for older residents to pay less attention to the robot than younger residents; residents with more advanced dementia were less interactive with either option. However, all of the residents interacted with the cats (Libin and Cohen-Mansfield 2004:113).

Paro, a robotic seal pup developed in Japan, exhibits the most advanced robotics used to date in this context. Paro is sufficiently padded to hide its mechanical structure and has a series of sensors all over its body that enable it to respond to touch. Its movements are soundless. Additional sensors allow Paro to detect orientation, perceive light, and turn its head in the direction of sound. Paro can vocalize pleasant and defensive sounds, fall asleep, move its flippers and can learn to respond to key words such as its name. It is powered by a rechargeable battery that resembles a soother plugs into its mouth.

Research published by Japanese teams presents analysis of sub-sets of data from a longitudinal study at an assisted living facility where study participants were residents of the home or participated in a day program. Twenty-three elderly Japanese residents participated in the studies. Fifteen residents were cognitively intact, three participants had mild dementia, three had moderate dementia, and two were classified with severe dementia (Wada and Shabata 2008; Wada et al. 2004, Wada et al. 2006). In the base study (Wada and Shabata 2008; Wada et al. 2004; Wada et al. 2006) participants were divided into two groups, one with eleven participants and the other with twelve. Each respondent group had one person with severe dementia. Nursing staff were asked to collect data using three different methods to record changes in mood, self-rated face scales, short questionnaires, and urinary tests to monitor stress hormones. The results of the face scale and the questionnaires indicated that the participants rated their mood to have improved after interacting with Paro. Analysis indicated that, although the starting mood continued to be lower than the ending mood, the starting moods did not return to the low level indicated on day one (Wada et al. 2004:1785). Nursing staff provided observational support for the participants' self-rated improvement in mood. There was a one week hiatus from Paro after six weeks of continuous interaction. In the interim period the residual elevation in mood was maintained, supporting the position that the effect of Paro was sustained (Wada et al., 2004:1786). Urine tests were administered before and following sessions with Paro to monitor levels of stress hormones. Urine analysis indicated that the physiological reaction of the body to stress was reduced (Wada et al.. 2004: 1786). A correlation between physical wellbeing and an improvement in emotional health was evident. Researchers noted that relationships among the participants changed with the introduction of Paro. Residents moved throughout the home more frequently, interacting with others in a more conversational manner and establishing new friendships

(Wada and Shibata 2008:272). Caregiver wellbeing was included in the study to consider whether the presence of Paro could have an impact on the caregivers. Six members of the nursing staff, two men and four women, were monitored for staff burn-out, defined as a syndrome of emotional detachment from the residents. A questionnaire was filled out by the participant nursing staff one week before the introduction of Paro and continued weekly until the final week of Paro research. Analysis of the data indicated that the nursing staff experienced fewer burnout symptoms during periods when Paro was present (Wada et al. 2006, 2004:1784).

Wada Shibata, Musha, and Kimura (2008) studied neuropsychological effects using electroencephalogram head pieces worn by the twelve participants, four men and eight women, as they interacted with Paro (Wada, Shibata, Musha and Kimura 2008:53). The participants had an average MMSE score just below seventeen (Wada, Shibata, Musha and Kimura 2008:57) indicating their dementia had recently progressed into the mid-stage classification. Seven (approximately seventy-five percent) of the residents improved. One resident improved to “normal” cognitive function and two others improved to “subnormal”[3] (Wada, Shibata, Mush and Kimura 2008:57). The impact of the cognitive improvement lasted more than the year of the study (Wada, Shibata, Musha and Kimura 2008:53). The long-term effect appears consistent with the improvement in social skills and cognitive function evident with residents in the stimulating environment of the Kitwood and Bredin (1992) research discussed previously in this chapter. The study included residents interacting with a deactivated Paro as well. While the residents

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[3] The term subnormal is not defined by the authors. Possibly this indicates an improvement from mid-stage to early-stage dementia.

were less enthusiastic about interacting with Paro when it was turned off, those who did, received positive stimulation, but not to the same degree as recorded with the activated Paro (Wada, Shibata, Musha, Kimura 2008:58). Several of the residents expressed reluctance to interact with Paro. With some residents this indicated apprehension around animals. Men and women interacted differently with Paro. Women were willing and enthusiastic, while most men preferred to watch. One man refused stating,”It is boring because it is not a real animal.’’ The authors add, “Moreover, males generally feel that playing with plush toys is girlish” (Wada, Shibata, Musha and Kimura 2008:58). The idea that there is a gendered bias toward robots and stuffed animals will be discussed in more detail in the next section of the literature review.

Kidd et al. (2006) compared Paro with My Real Baby as a stimulant for conversation and socialization. The data for My Real Baby came from work conducted by Turkle et al. (2005) where My Real Baby was introduced to agitated residents and later removed (Kidd et al. 2006:3976). Kidd et al. (2006) collected Paro data from two American nursing homes. Home A residents had high levels of cognitive ability, while many of the residents in Home B were diagnosed with schizophrenia and dementia. Several residents had both conditions. Sixteen participants were selected from Home A and seven from Home B. This research, similar to the work of the Japanese researchers presented earlier, is weighted toward participants with a high level of cognitive ability. A second similarity with the Japanese studies was using Paro in a group activity. The groups assembled by Kidd et al. (2006) consisted of Paro, three participants, a staff member, and a research assistant for a total of five people. Paro was deactivated for half of the sessions and active in the remainder to enable the researcher’s to evaluate Paro’s responses as a factor in resident responses. Kidd et al. (2006) stated that sounds emanating from My Real Baby and Paro were ‘deeply evocative’. The residents assigned meaning, intention, and emotion to the sounds made by both devices (Kidd et al. 2006:3976). In general, social interaction was not found to be as spontaneous as expected on the basis of Japanese research results, but considered to be an improvement over the silence that surrounded other activities at the homes (Kidd et al. 2006:3974). Participants who had pets in the past responded to Paro more positively than other participants. A comparison of Paro with My Real Baby revealed that either option evoked similar emotional reactions from some participants (Kidd et al. 2006:3975). Kidd et al. (2006) identified inhibiting factors associated with the design and concept of a baby seal that were not mentioned in the Japanese studies. This discrepancy might suggest cultural differences in the way Paro was perceived by the participants. Some American participants wanted to place the baby seal in water. Other residents viewed the seal as an undomesticated animal and were concerned that it might bite. Paro was too heavy for frail participants to lift and hold. Lastly, maintenance of the robot and the doll added to the work load of caregivers (Kidd et al. 2006:3974). The questionnaire used in the study was found to be ineffective for gathering data. The resident participants frequently selected the extreme ends of the Likert scale as their response to the questions, causing researchers to doubt the accuracy of the information obtained (Kidd et al. 2006.3976).

Paro was the focal point for three related pilot studies conducted in a major long-term care and rehabilitation facility located in Manitoba. The research was in part an opportunity for students from a variety of disciplines to experience working in fields of aging, dementia, and long-term care (Roger et al. 2012:90). Visiting and resident family members and caregivers participated in the pilot projects. The first study collected data from three residents in private sessions with Paro. Assessments occurred at the start and end of the research. Residents used a self-rating face scale to indicate their mood. A simple short verbal interview designed to identify depression was conducted with each resident. Family members were asked for their perceptions of mood change in their family member and for their evaluation of Paro (Roger et al. 2012: 91). The second study interviewed health care workers and recorded their perception of robot therapy. The third study explored the potential for Paro to stimulate conversations between visiting and resident family members. Four family pairs participated in this phase of the study (Roger et al. 2012: 91).

Two of the participants in the first study experienced positive results, while the remaining resident was apprehensive and did not want to engage with Paro (Roger et al. 2012: 91). "Physical fatigue, discomfort, and poor scheduling of the intervention" were identified as possible factors interfering with a positive session with Paro (Roger et al. 2012: 91). In the second study, results indicated caregivers generally held positive regard for Paro, identifying residents with anxiety or pain as the most likely to benefit from this form of intervention (Roger et al. 2012: 91). Practical concerns about keeping Paro clean in a hospital setting and whether some residents might be afraid were brought forward (Roger et al. 2012: 91). Family members who participated in the third pilot study identified five ways Paro contributed to the family members' experience of each other. Paro stimulated communication (often in the form of reminiscence), humorous and playful emotions, created a new topic for the family to discuss, was a comforting and joyful experience for the residents and, lastly, as the object for positive touch or tactile stimulation could be helpful in reducing loneliness and increase feelings of connection (Roger et al. 2012: 91). The following section will explore research into the emotional attachment between residents and various animal substitutes.

Attachment and Infantilization

Research conducted by James, Mackenzie, and Mukaetova-Ladinska (2006) monitored the use of dolls and teddy bears with a group of thirteen male and female residents over a twelve week period. Data was gathered in four areas, memory stimulations, bonding, tactile stimulation, and communication. Each resident selected either a doll or a bear. There was an unstated assumption that men would select bears and women would select dolls and that would return them to the “special years” and retrieve memories of motherhood (James et al. 2006:1095). Two men and ten women selected dolls; the gender of the person who selected the bear was not specified. The remaining twenty residents of the home served as a control group. Each participant formed a unique bond with his or her chosen item. Many of the women tried to feed, dress, or bathe their dolls. A group of women sat together with the dolls and socialized to a greater degree than they did prior to the arrival of the dolls. One resident, a retired doctor, frequently ‘examined’ his doll as though it were one of his patients (James et al. 2006:1096), supporting the idea that “special years” with children is not the exclusive domain of women. Another resident became overly possessive of her doll and frequently took dolls from other participants. She refused to part with the dolls at meal times or when it was time for her bath (James et al. 2006:1097).

James et al. (2006) supported the use of dolls in the care homes as the research had successfully highlighted positive results in memory stimulation, bonding among participants and with their dolls. Tactile actions had increased as had communication among the residents. The unexpected experience of possessive attachment indicated the potential for dissension among residents and that an over-attachment or concern for the wellbeing of the dolls could result in residents subsuming their own needs to tend to the perceived needs of the doll. The researchers had not anticipated resistance from some family members, other residents, and staff to the use of teddy bears and dolls. One staff member observed, “Some (residents) know they are dolls and so are critical of others using them” (James et al. 2006:1097). Those who were opposed viewed the use of teddy bears and dolls as demeaning, a form of infantilization of elderly people. One family member insisted that his mother be given a bear in exchange for the doll she had for the first seven weeks of the study (James et al. 2006:1097).

Overall, the majority of the participants in the literature reviewed to this point appeared to form satisfying emotional connections to the various devices to which they were introduced during the research. However, there were exceptions, Roger et al. (2012), Wada, Shibata, Musha, and Kimura (2008), Kidd et al. (2006), Greer et al. (2001), and Libin and Cohen-Mansfield (2004) commented on the reluctance of some of the participants. A common thread among some studies was the frequent use of the terms ‘toy’ and ‘play’. Perhaps, the use of terms associated with childhood may have created an unintentional negative emotional response from some participants, but not in others.

Ethical Considerations

Ethical questions arise when we try to position the robot within the context of care and personhood. Is there anything wrong with using “Darwinian buttons (making eye contact, for example) that cause people to respond as though they were in relationship?” (Turkle 2007:503). The question of authenticity and truthfulness is part of ethical concern when robots interact with people who may be incapable of making the distinction between live animals and robots. Robots appear to compel a nurturance response normally reserved for a living entity. “We connect to what we nurture” (Turkle et al. 2006:349). The pretext of responsiveness from the robot implies that a form of social reciprocity is occurring and that a mutual relationship is being forged. A sophisticated interactive device is an active experience that can fill an essential emotional need, especially in situations where personal relationships are strained or the object of the affection is unavailable (Turkle et al. 2006:359; Turkle 2006:2). Should people be told that the object of their interest is not real in the sense that it is not alive? “If our experience with relational artifacts is based on a fundamentally deceitful interchange…can it be good for us? Or might it be good for us in the “feel good” sense, but bad for us in our lives as moral beings? What kind of people are we becoming as we develop increasingly intimate relationships with machines” (Turkle 2006:3). The answer to these important questions was partially addressed by Taylor (2008). When Taylor’s mother held a doll it was irrelevant whether it was a real baby or not, as Taylor stated, “She does not need to have all of the details sorted out in order to ‘care’ for me. The impulse to care, the habit of caring, the embodied knowledge of how to take care…run deep in my mother” (Taylor 2008:329). Possibly nurturance is a stronger imperative or driving need for some than it is for others. Johnson and Meadows (2010) equated most of the success of a dog walking program to the participants' belief that the dogs "need us to walk them." (Johnson and Meadows 2010:387).

Nurturance

Despite universal and cross-cultural reliance on nurturance, nurture is not well researched other than in the areas of child-rearing or in psychological disorders caused by poor nurturance. Anthropologist Penny Van Esterik refers to nurture as an "unexamined and undervalued power" (Van Esterik 1997:341). "[Everyone] alive in the world today survives by virtue of being fed and nurtured…first by mothers, then by others. We survive as individuals, as societies…even as a species, because of the nurturant care and feeding practices of others. So much for modernity's rational autonomous individual!" (Van Esterik 2007). Nurturance is generally considered a feminine attribute or, at least, a responsibility relegated to women and to the domain of the home. The urge to nurture does appear to be a stronger imperative in some people than in others and nurturance crosses the gender bar. Van Esterik positions nurturance and care at the "crux of personhood" located at the "intersections between biology and history and culture and language" (Van Esterik 2007). The importance of nurturance should not be understated or taken for granted. Survival as individuals, societies, and as a species is predicated on the nurturance provided by others (Van Esterik 2007). Kitwood concurred with the description of nurturance as both a cultural and biological directive stating "perhaps every human being yearns to be truly cared for and to care. We are actually endowed with instinct like tendencies to develop strong and affectionate social bonds." (Kitwood 1997b:3). Van Esterik held the same view of nurturing, referring to it as an empathic process where the boundaries of self and others are blurred, requiring a sense of social responsibility for others (Van Esterik 2007). Kitwood and Van Esterik linked nurturance and care as an entity rather than separate directives. “Nurture implies caring for, caring about, and acting with (relational) rather than acting on. There is a custodial feel to nurture, one that is intimately connected with personhood” (Van Esterik 1997:341).

Nurse anthropologist Madeleine Leininger provided insight about nurturance from a caregiver’s perspective and an understanding of nurturing from cultural and social perspectives within the framework of nursing care, declaring it to be “the direct (or indirect) nurturant and skillful activities, processes, and decisions related to assisting people ” (Leininger 1988:4). Nurturant care is provided through a network of empathy, support, compassion, protection, and various other behaviours based on the perceived needs of the other (Leininger 1988:4). Leininger posited that nurturance was one of ninety cultural constructs of the globally expressed concept of care, defining twenty-eight of these in taxonomy as major constructs of care (Geissler 1990:74).

Ruth Greenberg-Edelstein separated nurturing and caring, positing that nurturance, unlike caring, may exist in an environment devoid of emotional foundations (Geissler, 1990:74). Exchanges between participants that may be classified as “aiding, comforting, confiding, nursing, exchanging, fondling, establishing solidarity, or promoting development and growth” are examples of nurturing behaviours (Greenberg-Edelstein; 1986:1). Greenberg-Edelstein (1986) defined five levels of nurturance among participants in group therapy. Nurturance moves from one directional contact to increasingly more personal exchange (Greenberg-Edelstein 1986:13; Geissler 1990:74).

Neutral nurturance at level one is characterized by lack of reciprocity. One party displays nurturing behaviour to a passive other. At level two the recipient responds to the initiator with a small gesture of acknowledgement such as eye contact or a smile. At level three the exchanges are social in nature with the recipient exchanging social pleasantries in classic or formulaic patterns: How are you? Fine, how are you? These are neither an emotional exchange, nor necessarily an expression of genuine interest in the health of the other. Personal revelation is noted in level four. Nurturance at this level has the potential to be therapeutic and more emotional. Level five reaches a new level of intimacy where both parties reveal personal feelings or information. Greenberg-Edelstein defined the fifth level of nurturance as a profound experience with the potential for one or both parties to gain perception and understanding (Greenberg-Edelstein 1986:15). Negative reciprocity was also defined as a five level approach, hinged to positive reciprocity at level one and moving toward a minus five. Negative reciprocity moved from apathy at level one to level five where extreme physical harm was evidenced. Harm was defined as the antithesis of nurturance and the complete lack of regard for the other (Greenberg-Edelstein 1986:22).

The literature reviewed in this chapter encompassed both theoretical and applied research. The foundations to personhood and person-centered care are integral to creating a focus on the uniqueness of each person, despite the loss of cognitive abilities. Research establishing BPSD as an attempt at communication creates an imperative to find respectful ways to interpret these events. Applied research projects addressed issues of communication defining the importance of understanding body language in order to hear past the words. Finally, the use of intermediaries such as robots, plush bears, and dolls provided strong indications of the usefulness of these devices, simultaneously raising important ethical concerns. Chapter three presents the mechanics of my research describing the linkages among the theories, the literature reviewed and the research questions to be addressed. The information required to address the questions determined the type of data to be collected, which in turn defined the appropriate data collection methods and research tools. The process used to store, code, and analyse the various sources of information is presented.

Chapter Three

Methodology

Theoretical Foundation

This research was structured around a theorization of the concepts of personhood, agitation, and nurturance that shape current practices regarding how to provide quality care for people with dementia who are living in a PCH. Personhood states that an individual is more than his or her neurological impairment; an effective and respectful approach to caring for the individual with dementia must be person-centered, holistic and evolving to maintain an individualized focus on the abilities of the person in care (Davis 2008, Kitwood 1997, Kitwood and Bredin 1992). Agitation theory and models such as Needs Driven Behavior (NDB) posit that agitated events are an attempt to communicate unmet needs (Kolanowski, Litaker, and Buettner 2005, Kolanowski and Whall 2000), placing an onus on the caregivers to decipher these coded messages and address the needs. Threads of personhood are woven into nurturant theory which posits that people, as social beings, have a driving need to nurture (Van Esterik 2007). Further, personhood considers that it is in social relationships that the *person* is created (Kitwood and Bredin 1992). If, as nurturant theory suggests, people have a driving need to care for those other than themselves, could it follow that lack of opportunity to socially connect with others through nurturant acts contributes to incidents of agitation?

White Spruce operates from a stated person-centered care philosophy creating a suitable environment to conduct ethnographic field research intended to address agitation from the emic perspective rather than from a medical or clinical focus. Guided by the ethnographic and qualitative research methods described by Hamersley and Atkinson

(2007), my research considered whether residents in advanced stages of dementia would be interested in *the cat*, whether changes in agitated behaviour would coincide with a series of guided interactions between a resident and *the cat,* and, whether the residents interacted with *the cat* in a manner that suggested nurturing behaviours.

In designing a research strategy to include the residents, two considerations needed to be addressed. I did not want to reduce the role of the residents to *the observed,* nor did I want to subject them to research methods that exceeded their current abilities.[4] A combination of passive and active participation was chosen for the residents relying on family members and staff to fill in details residents were not able to provide. Where the resident's active participation was required, I incorporated *ability based activities*[5] into the research design or participated with them in routine events, including church services and folding laundry where each resident participated to the level of her ability. I define residents' passive participation as unobtrusive observation of residents in quiet times or as they participated in various scheduled activities. The second challenge to the research design was to find a method and coding process that could record each resident's "voice" regardless of verbal ability and compensate for the wide range of verbal skills among the residents. Video recordings of *the cat* sessions supplemented with tape recordings and

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[4] Working with vulnerable people, such as those in advanced stages of dementia, required ethics approval. The topic of ethical guidelines for research with human participants and how those guidelines were incorporated into the research process will be covered in detail in Chapter Four.

[5] Activities that are modified to match the abilities of person with dementia while retaining the characteristics of the activity that give meaning to the individual. A simple example of an abilities based activity would be to escort residents to the sessions with *the cat* rather than expecting them to independently follow a schedule.

field notes provided a reliable record that could be scrutinized for nonverbal forms of communication alongside articulated responses.[6] Greer et al. (2001) focused on *meaningful units of information.* This approach placed the observer as arbiter of *meaningful communication*. Greer's research did not consider whether the utterances had meaning to the speaker (Coste 2003) or that cues to emotional state or physical need were coded within tone and expression (Ward et al. 2008). Using either words or body language or in weighted combination minimized the need to *judge* meaning or appropriateness. Familiarity with the participating residents' behaviors and verbal ability was an asset in identifying changes or intended meaning. The approach I used to address communication issues was to establish a context for understanding the residents and their unique ways of functioning. Participant and passive observation of the residents was augmented with information gleaned from semi-structured interviews to develop the contexts. The formal structure of the research questions determined the scope of the data to be collected, which in turn contributed to selecting research methods appropriate for tasks established by the questions.

Research Questions

Question One asked, In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with the cat?

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[6] Only common forms of body language easily interpreted without in-depth training in deciphering nonverbal communication were coded. For example disinterested body language included Helen turning her back to *the cat* and Bridget sliding *the cat* off to the side.

The purpose of this question was simply to determine whether *the cat* appealed to the participating residents and whether the initial level of interest or disinterest changed with repeated exposure to *the cat*. The primary methods of data collection were video recordings of each resident's sessions with *the cat* and participant observation. The scope of the data collected to address this question encompassed the residents' responses to the invitation to attend each session, followed by their reactions to and interactions with *the cat* during each session. Lists of verbalized and demonstrated responses were generated originating from these observations.

Questions Two and Three asked, Will residents who have incidents of agitation, or who are socially withdrawn, experience a decrease in frequency or intensity of agitation or increased interaction in response to the cat? and *If there are observable changes in behaviour (agitation, interaction,) does this suggest a change in the emotional state--cheering, calming, or upsetting?*

Responses to these questions required a systematic process to identify and monitor the observable agitated behaviours displayed by resident participants. The literature review indicated possible options such as urinalysis, face recognition scales, questionnaires, participant observation, and agitation inventory forms. Urinalysis was used to monitor levels of stress in a study group before and after interacting with a robotic seal pup (Wada, Shibata, Sito, and Tanie 2006, 2004; Wada and Shibata 2008, 2007, 2006). While this may have provided useful scientific evidence, medical testing was beyond the scope of my project. Self-rated face recognition scales and questionnaires required participants to have higher functioning cognitive skills than were present with my group.The face recognition scale is a series of pictures of faces going through a range of emotions from sad to joyful. Roger et al. (2012) reported that the residents had difficulty identifying the emotions depicted on the faces and felt that the scale was an ineffective tool (Roger et al. 2012:91). The Cohen-Mansfield agitation inventory (CMAI) forms (Libin and Cohen-Mansfield 2004) were a more appropriate fit for this project and had proven their effectiveness in monitoring observable agitation in PCH environments. Several RNs at White Spruce were already trained to use these forms. Participating family members and staff provided additional support through their observations of the residents.

Question Four asked, Might interacting with the cat promote or instigate nurturing behaviours for resident participants?

Nurturance is neither well-defined as a concept nor as a definitive list of actions or behaviours, nor is it possible to determine with complete assurance the underlying intention of someone under observation. In advance of coding and analysis, I developed a taxonomy of ten nurturant behaviours based on Leininger's care construct (Leininger 1981, 1978; Geissler 1990) and Greenberg-Edelstein's (1986) definition of levels of nurturance, *compassion, protection, empathy, comforting, confiding, nursing, exchanging, physical contact, establishing solidarity*, and *promoting development*. Standard definitions were used for five terms, *compassion* (feeling sympathy), *protection* (to defend or guard), *empathy* (stepping into the emotional world of the other), *comforting* (to soothe or console), *and confiding* (to give information or a confidence). The term *nursing* (feeding, cleaning, and healing) was defined narrowly as tending to physical wellbeing or bodily needs. The definition of *exchanging* (trading information) is similar to confiding except for the expectation of a reciprocal response of information or expecting answers in return. I used *physical contact* defined as stroking or caressing lovingly, where Leininger had used fondling. *Establishing solidarity* (creating a unit or an agreement) encompassed any action that created a sense of “us” or the starting points of friendship. The last term, *promoting development and growth* (activities that would teach a skill or an encouragement) was intended to encompass a parent-teacher-mentor role. The video records were the major source of data coded, using the taxonomy as a guide.

Research Instruments and Data Collection

The Cat

The cat (Appendix D) is a moderately interactive robot capable of creating an experience similar to interacting with a live cat. The three pound adult-sized *cat* is covered with white synthetic fur. Blinking eyes, twitching ears, head movement, changing position, and tail swishing are randomized actions adding to the appearance of spontaneous choice rather than offering a programmed response. *The cat* is capable of two postures, sitting on its haunches, and sleeping with its paws tucked under its chest. *The cat* will meow as if for attention, purr contentedly when stroked, and yowl if mishandled. Unlike Paro, *the cat* cannot move its head in the direction of sound and, further, when *the cat* is sitting up-right on the table, its head is slightly higher than the seated residents. The combination of the inability to track sound and to orient itself to the direction of the sound tends to create the impression that it is fixated on something behind the speaker. The mechanical sounds that accompany changes in position serve as a constant reminder that *the cat* is not real.

Data Collection

Four data collection methods were used in the course of the fieldwork. These were participant observation; video-recording of sessions with residents, both with and without *the cat*; semi-structured interviews with residents, family and staff; and Cohen-Mansfield Agitation Inventory forms. Field notes arising from use of these methods provided a valuable record and resource. Each approach contributed unique information that independently, or in combination with other methods, addressed the research questions or defined the context for better understanding the residents and agitation. Standing on the sidelines, passively viewing and recording events would not have provided me with the insider experience necessary for an adequate appreciation of what I was observing.

Participant observation, a hallmark of ethnographic research, provided the opportunity for me to become actively involved in appropriate activities with the residents. A benefit of participant observation is the potential for a comfortable relationship to develop between the ethnographer and the participants, as it did in this research. Although the participating residents were the focus of the study, they mingled within the general population of residents, caregivers, service providers and visitors in the usual rhythm of the day. Within this setting, I was able to observe the residents in solitary times, social moments and while participating in scheduled events. Only those who had agreed to participate in the study were included in the data collected.

Participant Observation

I used participant observation to gather background and ongoing data about the residents while spending time within usual activities of the PCH and as a participant in the *faux cat* (without *the cat*) practice video sessions to gather baseline data and again in the sessions with *the cat*. In the first instance, field notes were the record of choice; I relied on the video record for the details of a *faux cat session* and for the sessions with *the cat*. Meal times were an opportunity to observe social behaviors. The residents sit at assigned tables and have an opportunity to develop a relationship with the other person or persons at their table. Often a staff member is present at the table in order to encourage residents to eat or to assist those who require help. On several occasions, I sat with participants during the midday meal to observe socialization at the table among residents who sit together at each meal.

I accompanied one resident to her hair appointment at the main floor hair salon, another to a St. Patrick's Day concert, and accompanied several others when they went bowling on the main floor. Attending Protestant and Catholic Church services with three residents provided surprising insight into the positive relationship between memory and ritual. Working with the residents as they folded clean wash cloths delivered daily from the laundry was an exercise in folding precision and indicated a desire to be useful. Each event provided more understanding of capabilities, friendships, ability levels and the impact of life-long habits.

Video Recorded Sessions

Guides were prepared for the *faux cat* practice session (see Appendix I] and for the series of sessions with *the cat* (see Appendix J), as well as a protocol to use if a resident became highly agitated (see Appendix K] while in a session.[7] The purpose for the guides was two-fold. First, as a staff participant recruitment aid, the guides were an example of the two types of video recorded sessions staff were invited to participate in as facilitators. Second, the guides standardized the sessions by outlining the process, starting with inviting the resident to a session, hand cleaning, engaging with the cat, ending a session and extending an invitation to come again.

The initial video recording of the *faux cat* sessions was a precursor to the sessions with *the cat,* providing the resident and staff member with the experience of a session while I honed the recording process. Baseline data regarding each resident's communication style and social interaction was gathered.[8] Two caregivers and four residents participated in these initial sessions. In two of the sessions a book of animal photography was used to focus the conversations with the resident. With the other two residents, the birds housed in large cages by the window served as the topic for conversation.

During the first sessions with *the cat*, it was evident that my non-participatory presence behind the camera was a distraction. Residents frequently looked my way or engaged with me in conversation. Some staff members were uncomfortable if I was reluctant to communicate with them or the resident. Participation in the sessions seemed

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[7] The staff members deal with agitated residents daily. The value in the review of the protocol was that it clearly defined that I was not in charge and would follow the staff member's direction. When we had an agitated event in one of the sessions with *the cat*, the staff member took control, sent me from the room, and the resident care manager was alerted. The staff had the resident calmed within a short time.

[8] Unfortunately I did lose one set of video sessions with *the cat* due to equipment malfunctions.

prudent, especially considering that Greer et al.(2001) felt maintaining an observer role was a flaw in their research design. Consequently, I was present at the table and participated in all but two of *the cat* sessions. On several occasions, at the start of a session a staff participant was called away or unable to attend and the resident and I proceeded rather than lose the opportunity to conduct the session.

Agreement to attend the sessions was given by all of the residents each time they were invited to attend *the cat* sessions. Two residents found fifteen minutes too long to remain in the room. As per the guidelines for the sessions, the residents were free to leave at any time. One resident, who is constantly mobile, left the sessions on her own volition; the other asked to be returned to her room. Session times for these two participants ranged between one minute and nine minutes. Three residents appeared to be willing to stay longer than the allotted fifteen minutes. On two occasions, one resident intentionally joined sessions with others that were in progress. Rather than interrupt the session, I allowed this resident to remain in the room and noted the social interactions between the new arrival and the other resident.

When it became evident that one of the residents was not interested in interacting with *the cat*, a fifth resident was added to the study in the second week. With a small sample size, losing one resident participant impacts the quality of the study results by limiting the range of responses and restricting the potential for meaningful discovery. Including another pet-loving participant ensured that the study had a balance between people pre-disposed to animal interactions and those who were not. A total of four *faux cat* and twenty-two sessions with *the cat* were recorded.

Semi-Structured Interviews

To simplify identification of the various participants, the following terms will be used. The five participating residents will be referred to as residents, or the women, or by their pseudonyms, Helen, Jean, Bridget, Victoria, and Rhonda. To provide a layer of anonymity, participating family members, friends, and companions will be identified as family or family members. Staff participants are termed staff or caregivers, regardless of whether or not they are healthcare workers. Exceptions will occur where it is necessary to clarify a relationship to a resident or to identify a specific skill set such as Registered Nurse (RN).

Semi-structured interviews were conducted with participants from the family group (family and friends) and the staff group (staff and healthcare workers). The recruitment process and criteria will be discussed in Chapter Four when the participant categories and participants will be introduced. An advantage of the semi-structured interview is the use of open-ended questions that encourage the respondent to expand his or her comments. In contrast, scripted or structured interviews with a list of precisely worded questions limit responses to the confines of the question.

Interview guides provided a loosely structured template, ensuring that respondents addressed the same general themes while providing flexibility to explore topics raised by participants and to return to the original line of inquiry. Keeping interviews on topic and on time, as Bernard (2006) points out, conveys preparedness and competence, but not excessive control of communication. Unique guides were developed for initial and exit interviews with family (Appendix G1 and G2) and staff (Appendix H1 and H2). Private thirty minute interviews were completed in the first week and, where possible, again during the fourth week of the research.

Family and Friends

Initial interviews with family members and friends were intended to develop an understanding of the personality and preferences of the resident prior to moving into White Spruce. The interviews began by gathering demographic or background information, such as relationship between the speaker and the resident, age of the resident, family background and resident's type of occupation. To further understand the resident, I asked family members how nurturance was expressed by the resident, her hobbies and pastimes, and whether the resident was a pet person. The respondent was asked to describe how they spend time together at White Spruce. *The cat* was present during these initial interviews to provide the family member with an opportunity to evaluate *the cat*, including offering an opinion about *the cat*'s potential impact on the resident family member.

Exit interviews were conducted with family members who were present throughout the research period. Family members were asked whether there were any observable changes in the behavior or mood of their resident over the research period. Participants were asked to comment on the usefulness of *the cat*. Family members available for initial interviews but unable to spend time with their family member during the research period were not interviewed a second time. A total of ten interviews were conducted with eight family participants. Three family members gave initial and exit interviews.

Staff and Healthcare Workers

Staff members and healthcare workers' initial interviews gathered general information regarding the staff member's job and degree of interaction with the residents. Each interviewee remarked on each of the resident participants with whom he or she was familiar, providing information about the level of dementia and the assistance provided for personal care and activities of daily living. Those who engaged regularly with the residents gave anecdotal accounts of various ways agitation is expressed and approaches used to resolve these incidents. Spontaneous evaluations of *the cat* and its potential were discussed at this point. Exit interviews with staff participants covered many of the same areas. The significant overlap in information gathered from the two groups ensured that I had exit information about all of the residents. The final question posed to the staff was an evaluation of the utility of *the cat* and whether or not they would continue to use *the cat*. Management, who did not interact with the residents on a daily basis, did not participate in the exit interviews. Eight staff members participated in the interviews resulting in eight initial and six exit interviews. One staff member did not have direct on-going interaction with the residents and completed only the initial interview. One staff member was unavailable for the exit interview. The final data set of interviews numbered twenty-four. In addition to the scheduled interviews, spontaneous discussions occurred during the course of the study.

Cohen-Mansfield Agitation Inventory (CMAI) Forms

The standard CMAI form records the frequency of twenty-nine common types of agitation over a two week interval. Seven items were added to monitor behavior important to the study or regarding a particular concern for a resident. The added items were loss of appetite, increase in appetite, visible sadness, sobbing, visible happiness, purposeful self-exclusion, and increased socialization. The revised CMAI form (Appendix C) lists the complete set of thirty-six areas to be monitored. Each inventory item was rated, based on the frequency of occurrences. A seven point scale is used where one indicates no occurrences and seven means that behavior occurred several times an hour.[9] The point scale was modified to use zero for never.

Fifteen CMAI forms, three per resident, were completed over the study period. The three sets of forms reported observations over a total of six weeks. The first form reported on the time period of the *Pre-Cat Phase,* the two week time period prior to *the cat* sessions. This time block included one week prior to the on-site research. The second form covered the *Cat Phase*, the two weeks when the residents interacted with *the cat* and the final form reported on agitation in the two weeks following the removal of *the cat*. This time period, the *Post-Cat Phase,* included the last week of field work and the following week. The nurse designated to complete the forms used information that combined her recall of the previous two weeks supported by information shared among staff at shift change briefings[10] and notes to residents' daily records. One person completing all of the forms reduced the potential for conflicting interpretations, which are more probable when several people complete subjective evaluations. Use of a single

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[9] Part way through the field research I became aware that there was a more sensitive version of the CMAI forms. This form monitored intensity of agitated events. I felt it was too late to switch to the alternate version.

[10] There is an overlap of staff at each shift change. This is used to brief the new team on various topics including updates on the residents. I did not attend these sessions other than when I originally introduced the research proposal and recruited staff volunteers.

respondent does not completely eliminate the possibility of unintended positive or negative bias toward the outcome.

Field Notes

The field notes I created more closely resemble a combination of *jottings* and *diary* as described by Bernard (2006) than the richly detailed description of events associated with ethnography. The use of digital and video recordings of interviews and resident sessions with *the cat* reduced reliance on thick ethnographic field notes. My collection of notes was the only record of casual conversations and the daily activities of the residents as they spontaneously and voluntarily socialized with other residents or with staff or participated in organized events or when they were alone. The field notes were primarily used to add to the profile of each resident and to create a baseline of abilities and preferred ways of functioning.

Notes on social interaction included who was involved and the nature of the interaction. Positive and negative associations were identified. Positive association included companionable activities such as sitting with other residents, conversations, holding hands, and smiling at others. Task-oriented associations included folding laundry, listening to music and pushing a resident in a wheelchair to the dining table. Negative associations included aggressive or upsetting actions addressed toward other residents or a specific resident and included scowling, threats, invading personal space, blocking doorways, using a threatening tone of voice, entry or attempted entry into another resident's room and causing distress to another resident by standing too close, a form of personal space invasion. When I recorded incidents of negative association, I included resolution of the situation and reactions of residents and staff.

Group activities arranged by the activities director or other members of staff were forms of organized events I attended. I observed the events that residents chose to attend and which residents were involved, noting whether the skill level of the task, such as playing bingo, was a comfortable fit for the resident’s degree of dementia or whether a lot of help from volunteers was required. Church services, hair appointments, and the St. Patrick’s Day concert comprised the second category of organized events where the focus was on the degree of engagement of the resident with the event as well as with other residents.

Field notes on solitary times revealed one resident’s constant search for an open door, while another woman who wandered paused to read occupant names on the placards outside resident rooms. A third resident was fascinated by room numbers on the placards, pausing to read each number. One resident appeared to create solitary time by sitting with her eyes closed, although she was not sleeping. Many of the group and solitary activities each resident enjoyed had been identified during initial interviews. On several occasions, casual conversations with participants resulted in anecdotes that I recorded, although I did not personally observe these events nor were these mentioned in the interviews.

Final Data Set

Table 3 Final Data Set For Each Resident

	Helen	**Jean**	**Rhonda**	**Victoria**	**Bridget**
Faux Session	Yes	No	Yes	Yes	Yes
Cat sessions	5	4	5	5	3
CMAI Forms	3	3	3	3	3
Family Interviews *	1I 1E	2I 0E	3I 2E	1I 0E	1I 0E
Staff Interviews *	51 5E	2 I 6E	5I 6E	3I 5E	4I 5E
Field Notes	Yes	Yes	Yes	Yes	Yes

Source. Original research data
*Interview numbers are indicated as I for initial and E for exit

The final data set consisted of twenty-four thirty minute interviews, four video recorded *faux cat* sessions, twenty video recorded *cat* sessions, fifteen CMAI forms, and field notes. With the exception of missing the *faux cat* session with the resident added late, each resident was represented in each data source. The incomplete collection of family exit interviews was offset by the robust set of staff exit interviews. Similarities between the two sets of exit interview guides ensured sufficient overlap of information. Further, staff participants discussed each of the residents they tended.

Implementation Plan

The field work was divided into three blocks of activity over the four weeks of my attendance at White Spruce. The first week was devoted to recruiting participants, review of protocols, conducting interviews, and gathering background information. The next two weeks concentrated on *the cat* sessions. The last week was used primarily to conduct exit interviews.

Following the advice of the resident care manager, I conducted my research on weekdays from 9 AM to 4 PM. This time slot avoided the influx of weekend and evening visitors and did not interfere with the HCAs as they assisted residents with daily personal care routines. The majority of the forty residents of the second floor were dressed and had finished breakfast by the time I arrived; evening meal preparation was underway as I was leaving.

The foundational work was accomplished during the first week, beginning with the selection of residents and recruiting family members, friends and staff participants. I reviewed all aspects of the research with family members who acted as the residents' proxy before asking them to sign letters of consent (Appendix F1) for their resident family member to participate. Signing the form indicated that the family understood the research, including the scope of their resident family member's participation. The family understood that the proxy could choose to withdraw the resident from the program with no repercussions. I stressed that the resident's wishes would be respected, including a request to withdraw from the program. Identifying participating residents resulted in the identification of regularly visiting family members and friends who wished to participate. At the outset, I attended several daily briefing meetings between incoming and outgoing staff to discuss the research, to introduce *the cat*, and to recruit participants. Management and non-healthcare staff members (spiritual care associate, social workers, and environmental services attendant) were approached directly and invited to participate in an interview and to participate in *the cat* sessions. The majority of the initial interviews were conducted in private in the library on the main floor at a time convenient to the participant. Staff members were interviewed during their shifts.[11] Family member interviews coincided with their visits. An interview with an out-of -province family member was conducted by phone; two family members were interviewed in a location more convenient for them than White Spruce. I used a digital voice recorder, with permission, during the interviews.

Unique letters of consent were prepared for family participants (Appendix F2) and for staff participants (Appendix F3). The interview processes were the same. In each situation, the participant and I reviewed the letter of consent detailing the research program and the activities he or she would be expected to undertake. Each participant was assured that participation was voluntary and choosing not to participate would not result in repercussions to themselves or to participating residents. The interviews and digital record were started immediately after the participant signed the letter of consent. The digital timer on the recorder helped to keep the interviews on time.

I gathered base line data through participant observation and passive observation by attending scheduled activities or special events. In deference to non-participating staff who expressed concern that I might be recording information about their performance, I stopped making notes while I was observing or participating in an activity, choosing to reflect on these events in another location after the event was completed or at the end of the day. Data was not collected on non-consenting staff nor did I collect any data on individual staff members or family other than what was provided in the interviews. Staff

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[11] Due to the busy work load, many of the healthcare providers chose to be interviewed during a lunch break.

who were participating in the sessions with *the cat* and I reviewed the guidelines for the *faux cat* and *cat* sessions. The protocol for handling an incident of heightened agitation was reviewed at the same time. At the end of the first week, the first CMAI forms were given to the RN. Individual forms were in unsealed envelopes with the resident's name and the date indicated on the envelope. Completed forms were returned to me with the envelopes sealed. To protect the resident's anonymity, I marked the form with the resident's code name and destroyed the accompanying envelope.

Weeks two and three were focused on conducting the video recorded sessions with the residents. In the beginning, I attempted to schedule the time for the sessions with *the cat*. This proved to be ill-considered for healthcare providers, but was the preferred procedure with non-healthcare staff. It proved to be more effective to leave the time fluid, so that healthcare providers could fit the sessions into their day. The majority of the sessions with the participants were between 1:00 and 3:00 in the afternoon.

Two staff members who had originally indicated they would participate were not able to proceed. I recruited one other staff member to the program, reviewed the protocol for agitated events and the guidelines for *the cat* session and worked with this individual. After the first two *cat sessions*, it became evident that Bridget was not interested in participating, despite showing initial enthusiasm. Fortunately, the resident care manager and I had spent time with Jean and *the cat* in a spontaneous setting. Jean had responded well to *the cat*. We were able to conduct two sessions with Jean in the first week and three more in the second. At the end of the second week, I delivered the second set of CMAI forms to the RN.

The final week focused on conducting exit interviews with available family members and staff. All of the final interviews were conducted at White Spruce. The interviews were recorded and lasted thirty minutes. Participant observation of the residents in the final week focused only on social times. At this point my time in the field was complete. I arranged with the RN for a return to White Spruce on Friday of the following week to deliver the last of the CMAI forms. The return visit gave me an opportunity to spend a few moments in relaxed conversation with many of the staff participants and the residents while I waited for the forms to be completed.

Data Analysis

The data set resulted in a substantial amount of raw information that needed to be transcribed, reviewed for accuracy and coded. The coded sections needed to be sorted into general themes and refined to topic subsets. The primary tool for managing the data collection was NVivo8, a software program designed for qualitative analysis. The strength of this computer program is its flexibility to work with data from a variety of sources, including digital voice, video, photographs and standard text documents. The built-in transcribing function is useful to convert the video and digital files into text documents. The digitally recorded interviews were transcribed. The video recorded sessions with *the cat* were viewed and transcribed. Body language was written into the text at appropriate places. All of the transcripts were reviewed and revised until I was satisfied with the accuracy of the transcripts before I began the coding process.

The coding function copies subsets from the source data into discrete units which the NVivo software refers to as nodes. Coding represented a combination of prepared and spontaneous node creation. Before I started coding, I developed a structure of nested hierarchical data to store resident specific information and a series of linked nodes reflecting the items in the nurturance taxonomy. [12] Non-resident specific data was stored in free nodes that were created as needed during the coding process. When the coding process was completed, the free nodes were reviewed and combined or divided to reflect emerging themes.

Each resident had an identically structured cluster of linked nodes organized as *background* information and *current* information. Subsets of *background* included categories for *demographics*, *personality* and *pets*. *Current* was subdivided into four areas, one for *initial issues,* and the other three by time periods, *Pre-Cat Phase, Cat Phase,* and *Post-Cat Phase*. All data specifically related to one resident from either the interviews, field notes, or sessions with *the cat*, was stored within this structure. *Background* information created a profile of the resident before she arrived at White Spruce. D*emographics* were limited to marital status, occupation, age, whether she had children, the length of time she had lived in White Spruce and how she and her family arrived at the decision to move into the home. *Personality* defined pre-dementia ways of functioning, hobbies and interests, how she dealt with stress, examples of her nurturing ways, and finally, interesting trivia. *Pets* indicated her preference for animals, including animal anecdotes.

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[12] Linked nodes are joined in linear series similar to a chain or clustered in a nested hierarchical structure. Free nodes are independent units.

The *current* section, described the resident in White Spruce. *Initial issues* referred to forms of agitation and listed areas of specific concern for the family and caregivers, such as weight loss due to excessive walking or social isolation. *Pre-Cat Phase, Cat Phase,and Post-Cat Phase* represent a cluster of similar information reflecting actions during specific time frames, week one, weeks two/three, and week four. The information gathered under these three headings included activities the resident engaged in, with whom they associated, and whether these were positive or negative interactions.

The *Cat Phase* node was the main repository for all of the coded data from the resident's sessions with *the cat*. The incidents specific to *the cat* session were reviewed for examples of occurrences of positive nurturant behaviours and coded as one of the ten care options. The nurturant nodes did not need to be resident specific, since the data was coming from the resident's *the cat* data. Not all of the interactions with *the cat* were coded as nurturant. I chose to exclude actions such as merely *looking at the cat* as a nurturant act but included them as a sign of interest. Negative nurturant acts evidenced as pushing *the cat* away, or turning her back to *the cat*, were not coded, although these actions were considered signs of disinterest and used in formulating the answers for Question One. Interviews with staff, more than with the family members, raised issues that did not relate to a specific resident. Six free nodes were established to sort the non-resident specific information, *agitation, cat uses, work meaning, White Spruce environment, infantilization, and other*. Each of these general themes was further sorted into topic areas. The *agitation* node was subdivided into definitions of agitation and coping with agitation. *Cat uses* became three sub-groups, one for *ethical concerns,* another to record *uses* or *other applications*, and the final node stored *personal contact* to record the ongoing debate about emotional bonds with people and pets. *Work meaning* and *White Spruce home environment* over-lapped to some extent, as both stored comments made by several staff members about their satisfaction derived from working with the elderly and the staff members' vision for creating an enhanced environment for people in their care. The *infantilization* node held comments that specifically indicated or alluded to disrespect for the adult in dementia or the tendency to treat adults as children. The *othe*r category was subdivided into the value of companionship and changes to staff perspectives as a result of having participated in this research.

The field notes were not transcribed verbatim into NVivo. Instead, they were reviewed, and, where applicable, salient points added directly into the appropriate nodes. A spreadsheet was more effective in displaying and analyzing the data from the CMAI forms than NVivo. An individual spreadsheet mirroring the CMAI format was created for each resident. The data from the three forms was entered in chronologic order representing the *Pre-Cat Phase*, *Cat Phase*, and *Post-Cat Phases* and sorted in descending order of frequency based on the *Pre-Cat Phase*. Instead of entering the number one as the code for never, zeros were used. All other frequencies were entered as indicated. The sorted data highlighted which forms of agitation each resident displayed at the beginning of the research. Comparative analysis of the first two forms indicated whether there was any change in frequency with the existing agitations, or if additional forms of agitation were noted. Comparing the second and third forms indicated whether frequency levels changed, if changes reflected a return to original levels and if any new forms of agitation coincided with the removal of *the cat*. The same process of comparison and analysis was conducted separately for the seven additional items added to the form.

To facilitate analyses, I used the code numbers as a numeric value. A numbering system was used in every instance where CMAIs were calibrated. Creating totals for each phase resulted in a number value that could be compared with totals from the other phases. Although I was not looking for statistical data, tallied frequency values were an effective way to monitor change. With each resident, I noted which agitated behaviors were present in the beginning and sorted these according to highest frequency. I then compared the first form results to the two subsequent forms to observe whether there was either a change in frequency or whether any new forms of agitated behaviour were evident. The additional items that were added to the list were viewed separately from the standard list.

Combining the individual resident data onto one spreadsheet revealed agitated behaviors common to four or more of the women. Further analysis revealed consistencies and inconsistencies among the residents, which forms of agitation were affected, the degree of change, which residents appeared to have benefited the most or the least and whether any of the behaviours trended toward a return to the baseline frequency. I repeated this evaluation for the combined results of the seven items added to the study. The CMAI results addressed Questions Two and Three. The data gleaned from *the cat* sessions formulated responses to questions one and four.

Question One asks, In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with the cat? To answer this question, I addressed the underlying issue of whether or not the residents wished to engage with *the cat* as indicated by the resident's response to the invitation to come to the session. In the simplest terms, whether or not the resident arrived in the session room answered the first part of the question. Other forms of agreement included simple one word answers such as “yeah,” “sure,” as well as more complex sentences, “Is *the cat* in there?” Taking an outstretched hand, dancing into the room, smiling, nodding, and reaching for *the cat* were listed as affirmative body language responses. The second part of the question asks in what ways and to what extent was interest or disinterest shown. “Interest” included words and actions directed to *the cat* or to others in reference to *the cat*, reactions to the sounds emanating from *the cat* and interacting with *the cat* through touch, voice, or attention. Evidence of disinterest included ignoring *the cat* and *the cat*’s sounds, unwillingness to interact with *the cat,* and *expressions of boredom,* such as *closing eyes, looking away, yawning,* and *staring out the window or towards the door*. Some aspects of disinterest needed to be evaluated within a wider context. Leaving before the allocated time elapsed was considered an indication of disinterest, although remaining in the room was not automatically assumed to show interest in *the cat*, unless other actions supported that conclusion. Similarly, if a resident’s attention was focused on *the cat,* while her hands were being sanitized, this was coded as interest in *the cat*. If her attention was on hand cleaning rather than on *the cat,* this was not coded as disinterest in *the cat*.

Comparing the collection of resident videos in chronological order indicated whether interest or disinterest changed over time. Change was measured as a factor of time and as a level of interest. ‘Time’ considered whether interest in *the cat* changed through the sessions and whether the resident was interested in another aspect of the sessions, such as socializing with the staff member and with me. Level of interest reflected the nature of interactions along a continuum moving from disinterest to intimate connection.[13] Four levels of engagement were defined as no response, visual or verbal acknowledgment, physical contact, and intimate contact. I defined physical contact as an occasional stroke, while intimate contact reflected holding or fondling *the cat* or words of love, concern or affection.

The analysis process consolidated a significant amount of information to address the issues raised by the four research questions. In the process, various themes emerged that represent important considerations and issues related to personhood, care for the elderly, agitation and dementia. These findings can be clustered into three main areas, evaluation of *the cat*, influence of *the cat*, and emerging themes. The first two areas provide responses to the four research questions, while emerging themes include unanticipated discoveries and observations.

Chapter Four situates the research among the residents and staff on the second floor of White Spruce Senior Care Home. Permission to conduct research required approval from the University of Manitoba, and permission from the Board and management of White Spruce. The approval process included an ethics review to verify that research followed the Canadian Tri-Council guidelines for projects with human subjects. The ethics review ensures that the dignity, safety, and anonymity of the participants are protected. The resident participants are introduced using a case study approach. Through the words of the families and the caregivers, the individuality of each resident participant emerges in the account.

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[13] The continuum was inspired by the five levels of nurturance developed by Greenberg-Edelstein (1986).

Chapter Four

Research Location and Participants

White Spruce Senior Care Home

White Spruce is located on a quiet side street close to a hospital and medical services. The three storey building is surrounded by well kept lawns, beautiful old trees and inviting patio areas amongst the flowers. It accommodates one hundred residents with varying degrees of cognitive and physical challenges. Approximately thirty new residents are accepted each year from a waiting list of over one hundred names.

Large windows flow natural light into all areas except inner hallways. Common areas, entrances and hallways are attractively decorated with comfortable furniture, interesting art and plants. The White Spruce mission statement, residents' bill of rights and responsibilities and values such as caring, respect and trust are posted in many locations throughout the building. Each floor is divided into three sections. One section of the first floor is the first of five twenty-bed resident units. Another section consists of administrative and staff offices. A large multipurpose room, hair salon, dental office, chapel and library complete the main floor. Meal preparation and laundry are both off-site activities. Elevators located in the middle sections provide access to other floors. Fire escape stairwells are strategically located at the end of a corridor in each of the four resident wings on the second and third floors.

The elevators open into the central section separating two twenty-resident units on each of the upper floors. The nursing station and resident care manager's office are skirted by two large rooms, a TV room and a sunroom, where birds and fish add movement and vibrancy to the environment. A large spacious seating area, where many of the residents and visitors gather during the day, faces the nursing station. The unobstructed view of the elevator doors from the nursing station facilitates the monitoring of arrivals and of departures. Security systems are in place at exit doors and in the elevators to protect unaccompanied, disoriented residents or wanderers from leaving the floor or the building. Subtle electronic bracelets, similar to hospital identification bands, are worn by residents who are particularly adept wanderers. The device disables elevators until the resident's escort enters a key code. The bracelet will sound an alarm if a resident with a bracelet is in proximity of an outside door or elevator, or opens an emergency exit. Manual entry of a code is required to shut off the alarm.

The two resident wings are identical. Each has a dining room with kitchenette at the junction of two corridors where resident rooms are located. Intimate seating areas are located at the end of each hallway. Each unit has its own bathing station equipped with specialty lifts to move residents safely in and out of bath tubs. Resident quarters consist of a comfortably sized bedroom/sitting room with a closet and lavatory. Residents are encouraged to bring pieces of furniture, pictures and memorabilia to decorate their rooms; beds are supplied. Adjacent to the name plate and room number is a glass-faced memory box. The contents of the box serve as a unique identifier for its occupant, while providing other residents, staff and visitors with some information about the individual dwelling within.

Activities

Residents are not confined to the unit or the floors and with the exception of wanderers, who need to be escorted, are encouraged to move to other floors for exercise, music, art and social programming organized by the recreation coordinators. Social events are defined as voluntary associations of two or more residents engaged in an activity of their choosing, such as listening to music, sitting together with or without conversation, holding hands or folding wash cloths. These times indicate with whom the residents choose to associate and which activities appeal to them.

Group activities organized by either the social worker, spiritual care director, or activity coordinators were another form of social event, although lacking the aspect of free association among the residents. The reminiscence group, led by the social worker, and Bible study, led by the spiritual care director, formed smaller groups intended to be more personal or intimate in nature. Activities coordinators offer a varied and attractive slate of activities to stimulate the mind and body, including arts and crafts, exercise programs, games (bingo, cards, bowling), or reading the horoscope. These organized activities, offered at frequent and regular intervals throughout the day, provide an additional venue to observe social interaction. Large group activities such as exercise sessions are conducted in the large activity areas on the first or second floors. Residents from all floors come together for these activities. Volunteers often accompany groups of residents moving to activities on other floors, frequently remaining to assist with the activities or to escort a resident who needs to leave before the activity is completed. Frequently, service clubs, performers and musicians provide entertainment or extra help to celebrate various holidays. A small dedicated group of volunteers regularly assist with activities, escort residents to church services, help at meal time, water plants and care for birds and fish.

Person-Centered Care

According to Buron (2008), person-centered care requires empathy and knowledge of the pre-dementia resident so that caregivers can provide individualized quality care. The relationship between acknowledged personhood and reduction in disruptive behaviours is vital for sustaining social personhood (Buron 2008:324). The commitment to person-centered care is encoded within the White Spruce Resident's Bill of Rights and Responsibilities, including a right to a compassionate, clean and safe environment. Among the many tenets is freedom of choice as applied to activities, personal furnishings, daily attire and private meetings with family or legal and financial advisors. Residents have the right to be included in meetings with the team of care providers along with their family members to discuss aspects of care or medical treatment. The responsibilities of the residents include an expectation that they will participate to the extent of their ability, respect the shared space and treat visitors and staff with respect and consideration.

P.I.E.C.E.S

The needs-driven behaviour (NDB) model used in the Winnipeg Health Region is referred to by the acronym P.I.E.C.E.S, (http://www.wrha.mb.ca/wave/2012/01/about-pieces.php) and is derived from the first letters of the six assessment areas, listed as *Physical*, *Intellectual*, *Emotional*, *Capabilities*, *Environment* and *Social*. A cornerstone of the P.I.E.C.E.S approach is ongoing dialogue among members of a multi-disciplined team and family in order to create a problem-solving environment and to build successful solutions tailored to the needs of the individual resident. P.I.E.C.E.S is anchored in a philosophy of holism with the view that "health is beyond the absence of disease and includes quality of life, independence and self-determination" (http://www.piecescanada.com).

An algorithmic approach (Appendix E) systematically explores for physical changes signalling health issues, shifts in *intellectual* ability, new *emotional* stressors, changes in *capabilities*, *environmental* discomforts or unmet *social* needs. Three relatively simple questions direct the caregiver or team to explore each of the areas asking, what has changed? What are the risks and possible causes? What action is required? Working with the team to find and share effective solutions keeps everyone focused on positive outcomes. The care teams at White Spruce are drawn from a diverse set of medical skills and training including geriatricians, nurses (registered and licensed practical), health care aides, support staff and dieticians. Social workers, spiritual care associates, recreation facilitators, housekeepers and support staff that interact with the residents in meaningful ways and, as such, can provide additional insight.

Gaining Access to White Spruce

Two approval processes consisting of a research proposal and an ethics review, were required before the project would be approved by the University of Manitoba and before research could be conducted with the residents at White Spruce. Human subject research in Canada falls under the responsibility of the Tri-Council Panel, representing the Canadian Institutes of Health Research, the Social Sciences and Humanities Council of Canada and the Natural Sciences and Engineering Research Council of Canada. The panel is mandated to promote ethical conduct in research and to develop national guidelines for various institutions across Canada that oversees research projects. The Joint Faculty Research Ethics Board of the University of Manitoba (JFREB) is responsible for conducting a review of all research proposals associated with the university involving human research participants in several humanities and social sciences, including anthropology. The scope of the review includes research purpose, role and expectations of participants, and the protocols for the secure collection, storage, and disposal of research materials. The anonymity, safety and dignity of the participants is thoroughly address through this process, including having participants sign consent forms that ensure that the participant is informed about all aspects of participation and the intentions of the research (Appendix F2 and F3). Special consideration is required for research that involves vulnerable people. People with cognitive impairment are considered vulnerable and require the informed consent of a substitute decision-maker. A substituted decision- maker for a resident of White Spruce is either an individual designated as having the family proxy for the resident or someone who holds power of attorney. A full overview of the project with detailed descriptions of the activities in which the resident family member would be involved was presented before consent was given (Appendix F3).

Access to White Spruce and permission to work with the residents and staff requires a separate research application and ethics review process within the documentation prepared for the University of Manitoba. As part of the application, in addition to the nature and purpose of the research and its suitability to White Spruce, the Board needed to consider the impact on residents and staff of conducting a research program in the midst of a working care home. The application included an estimation of staff time commitment and resources that would be dedicated to the project.[14] The White Spruce Board waived their ethics review process due to their familiarity with non-invasive research projects and their confidence in the Tri-Council guidelines applied through the JFREB. The University and the management of White Spruce were kept informed of minor modifications and adjustments that needed to be made to the project.

Participant Groups

The research participants were recruited from three groups, residents, family members and frequent visitors and staff and caregivers. Each group represented a distinct category of participant with specific criteria for inclusion and participation in different aspects of the research. Residents were expected to participate in *the cat* sessions. Family members and friends were interviewed to provide an understanding of the resident's personality before dementia. The staff and caregiver group was divided into two sub-categories. One group represented staff members who participated in interviews but not in the sessions with *the cat* and the residents. The other group consisted of staff members who, in addition to the interviews, also led *the cat* sessions.

Family Participants

Criteria

The family participant group was comprised of immediate and extended family and frequent visitors and professional companions employed directly by the family. For purposes of anonymity, participating family, friends and companions are all categorized

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[14] The management of White Spruce purchased *the cat* used for this project. *The cat* remained with the residents at the end of the research.

and referred to as ’family.’ There were two criteria for inclusion. First, their resident family member had to be in the study. Second, they must have visited or interacted with the resident regularly. Not all of the family members were interested in participating in the research, although there was unanimous support for their resident family member to be included. Frequently, families expressed an altruistic motivation and hopeful view that, even if the research did not help their family member, it might help others.

Table 4 Summary of Family Participants

Relationship to Resident	Gender	Visit
Adult Child (3)	Female (4)	Regularily (4)
Nephew or niece (2)	Male (4)	Fairly often (1)
Other (3)		Rarely (3)

Source. Original Field Research

Summary

The eight participating family members four men and four women, included adult children, nephews, friends and companions (see Table 4). The men and women identified as companions were employed by the family, either through an agency or private arrangement, to provide friendship and additional social support for a specific resident. During the research period only one resident’s companions were present and agreed to participate as members of the family group. Several family members who chose not to participate continued to visit. Residents and family had varying degrees of interaction during the research period. Two residents and their families maintained daily interaction. Three women experienced a drop in usual visits due to a combination of unexpected and scheduled events affecting their families. One resident had visitors during the first two weeks but not the last two weeks. Another resident's family visits resumed toward the end of the study. One resident did not have a visitor during the research period.

Staff Participants

Criteria

Staff involvement was contingent on an established relationship between the staff member and residents. Care staff and residents were required to be on the same floor. Recruitment commenced with group presentations. Presentations were conducted during afternoon shift change meetings when those coming in to work were briefed about the day by those who were completing their shift. Short presentations were made to the nurses and health care aides (HCA) assigned to the second floor to familiarize them with the project design and *the cat*. Staff volunteers came forward after the presentations. Representatives from spiritual care and social work who were very familiar with second floor resident participants also volunteered. Two new staff members were recruited to fill in for staff who could not complete the project. The inclusion of new recruits ensured that I had sufficient staff participants to maintain momentum with the residents.

Table 5 Summary of Staff Participants

Length of Employment	Job Classification*	Gender
10-25 years (2)	HCAs (3)	Female (6)
5-9 years (2)	Management (2)	Male (2)
1- 4 years (2)	Other (5)	
< 1 years (2)		

Source. Original Field Research
*Two staff participants are included in two classifications

Summary

The staff participants (Table 5) were not intended to represent a statistically valid representation of the staff contingent at the home. However, the six women and two men who participated represented a range of classifications in healthcare, management and other services, experience and length of employment and, coincidently, do reflect the balance between genders and trained professionals and other caregivers working in the home. Length of employment included very experienced staff with upwards of twenty-five years with the Winnipeg Regional Health Authority (WRHA) to staff recently hired. Full-time as well as part-time or casual staff members participated. Job classifications indicated that two managers, one registered nurse and three HCAs were joined by participant volunteers from social work, spiritual care and housekeeping. Two participants have dual job classifications. Five of the eight staff participants engaged with at least one resident and *the cat*. For purposes of anonymity, participating staff members are not individually identified.

Resident Participants

Criteria

Criteria for inclusion in the study required that the resident be in a mid or late stage of dementia, experience incidents of depression or agitation, not have health problems that could be exacerbated by participating in the project, reside on the second floor and have an available family member or members willing to participate. At the time of the study, ninety-two percent of the residents at White Spruce were women. The female to male ratio does vary, but the home consistently has a significant predominance of female residents. Study candidates were not expected to be a representative sample of the personal care home (PCH) population. Residents were selected because they shared a cluster of similar behavioural attributes associated with advancing cognitive decline and agitation. Each potential resident participant also had unique characteristic behaviours which caregivers and family members hoped could be addressed in the study. It was hoped that reduction of incidents of agitation could contribute to an associated reduction in stress levels for residents, family members, volunteers and staff. Fewer incidents of agitation allow staff to optimize their time to provide a higher level of care which contributes to less caregiver burnout and a more satisfying interaction between residents and staff.

Summary

The five resident participants ranged from seventy-six to ninety-three years of age. All of the women residents had married, two were divorced, two were widows and one was still married. Three of the women had children and two had at least one child living in the same city. Despite spanning nearly a generation in age, the women share some powerful life-shaping experiences that included two world wars and the great depression which was followed by periods of notable economic and social growth. Incredible technological and medical advances were achieved in their lifetimes. Changes in the twentieth century included many women taking non-traditional work roles, marking an onset of a shift in societal attitudes toward work defined by gender. The oldest participant was an example of a woman with a strong entrepreneurial spirit and the ability to develop a thriving business in an area normally dominated by men. In contrast, upon her marriage, another resident was obliged to leave a clerical job with Canadian Pacific Railway, because of the company's policy to employ only single women at that time. Instead, she worked part-time as office manager in her husband's practice. Two of the other women and their spouses owned successful businesses in the service sector. The fifth woman was professionally trained for work in the public sector. Four of the women were considered to be in good health with few chronic or debilitating conditions. Two women had excellent mobility, one woman used a walker, another used a wheelchair and a third woman, who had arthritis, alternated between walker and wheelchair. One resident required a hearing aid and one was considered legally blind, although there were times when she appeared to see color and shapes.

Resident Profiles

Helen

Wandering and other challenging behaviours associated with dementia contributed to her family's decision to move Helen directly from her home into long-term care. According to her caregivers, her cognitive performance scale (CPS) and mini mental state examination (MMSE) scores indicated that she arrived in an advanced stage of dementia. As one caregiver stated, "[Helen] is highly dependent on healthcare aides for daily care." Helen is able to feed herself; however, to the consternation of her family and caregivers, she rarely sits long enough to consume adequate nutrition. High calorie protein beverages and an array of favorite foods are available as enticements for her to eat more. Family and caregivers described Helen's eating habits.

> She will only sit for a minute or two - when she wants to go there is nothing stopping her. She can even run when she wants to.

> Helen likes cranberry juice, coffee and muffins... If we could just get her to sit for ten to fifteen minutes

Her main activity throughout the day is walking back and forth along the main corridors of the second floor. Helen was a very active person when she was living and working in the community. A family member described Helen at leisure:

> [Helen] wasn't a reader – never really watched TV that much -she loved to clean and cook. She drove, so she would always go visit, go shopping. If someone needed help she was there. She was not a person to sit - she was always on the go.

Helen's friendly and helpful nature was apparent to her caregivers, despite arriving at White Spruce in an advanced stage of dementia.

Helen would walk hand in hand with Jean and sometimes they would sit together. Sometimes she will try to help those who are in a wheelchair. In response to my question regarding nurturing, a family member indicated that their father was the more emotional parent and the animal lover. They did not have pets while they were growing up. Helen was afraid of the squirrels at the lake; so possibly she was uncomfortable with animals.

As Helen's dementia progresses she spends more time in solitary walking. An electronic bracelet prevents her from activating the elevator on her own and sounds an alarm if she manages to open a stairwell door. Helen`s world has become the second floor. I was willing to sign her out and take responsibility for giving her a change of scenery on several occasions. For one outing we attended Mass. Helen sat through the twenty minute service, getting up only once to look out the window to see if her brother was outside. Although her common communication is through very cryptic one or two word sentences, she was able to recite several long prayers and follow the Mass.

Helen`s constant walking is related to three of her top five forms of agitation, namely wandering, restlessness and trying to get out of the building. Caregivers identified two situations with different causes resulting in the same rapid walking. The first two examples associated emotion with walking. The second example was physical discomfort as a trigger, stimulating wandering.

> Helen lives with a level of anxiety you can tell by her walking. She cannot sit very long. Some days she can sit; some days she cannot.

A family member made a similar observation of the connection between Helen`s walking and her mood.

> What I find sometimes when she wanders off and she gets in that mood where she is really angry and those beady eyes come out.

In another example, a staff member identified the speed of Helen's wandering as indicating distress, reaffirming the connection between need and agitated behaviour.

> Wandering is need driven. Yesterday she was wandering faster. [A family member] said there was something wrong with Helen`s clothing. It turned out that her [undergarment] was twisted -when that was noticed and fixed she settled down.

Unfortunately, neither the family nor the caregivers have been successful in developing strategies to encourage Helen to sit for longer periods of time. A staff member explained two negative side effects of wandering. First, wanderers often go into the rooms of other residents, which is upsetting to others; secondly, excessive wandering contributes to weight loss.

> [Helen] is losing lots of weight. We have a really hard time getting anything into her. She doesn't sit long enough so we have to run after her. That is the big deal with the wanderers. The literature says that [wanderers] are consuming 600 calories less than they need every day. So they are in a negative [calorie] position.

Weight loss is a primary concern that family and caregivers hope can be addressed. Caregivers, concerned that her constant motion was anxiety related, hoped that interacting with *the cat* might relax Helen enough to allow her to remain seated or to rest for longer periods of time. Ideally, this would allow her to rebuild some of her body mass.

Bridget

Bridget has resided at White Spruce for three years, following a series of moves from her home, first to assisted living, and then to a hospital bed. Her family helped her to make the decision to leave her home following a fall.

> It was more of a slip than a fall but she couldn't get up and that was sort of a turning point for her to admit that maybe the house wasn't the right place. We approached [moving from her house] from the perspective that

> we were thinking of her safety and wellbeing and indicated to her that we had a discussion about this and there was agreement among us that this was a good move for her. And that suited her personality to have someone make that decision for her and get it happening.

Bridget is assessed at an advanced stage of mixed dementia which is progressing slowly. One caregiver commented that Bridget's dementia is only a little more advanced than it was when she arrived three years earlier. Chronic conditions of hearing loss and failing eyesight add to her need for assistance. Bridget alternates between a walker and a wheelchair depending on the amount of pain in her knees. She requires help with many aspects of personal care. She continues to manage at mealtime, although her eyesight is becoming problematic.

> She doesn't see that great because sometimes she misses her mouth and her food is on the floor. She doesn't hear so well unless she has her hearing thing in.

Bridget's family described her as a private person who did not talk about her early life, until later in life when she moved into the assisted living suite.

> I guess it was around the time she moved into the suite she was doing a lot of reflecting on the people in her life that had died. So she was processing some death issues there at some point. No, she didn't speak much about her childhood.

When the discussion turned to the topic of nurturance within the family, the respondent commented, “We are not a physical huggy kissy family…I think that she probably lacked mothering and was really having to try to figure it out on her own.” Although Bridget was not a demonstrative person, the depth of her compassion for others is reflected in an anecdote.

> At an earlier time she spoke of her grandfather after her grandmother died and how lonely he was. He asked her, “If I bought you an ice cream would you stay with me inside?” She brought that up several times. She would rather be with her friends but would stay home with him. When I was visiting she was making reference to being alone and being lonely so it was more pointed than it was before.

Throughout her adult life Bridget worked in the family business and later in retail sales. Evenings were spent knitting, sewing or crocheting in front of the television. Her reputation as an accomplished seamstress kept her busy sewing for others. She attended church regularly and believed in helping where she was needed.

> There certainly is a sense of personal dignity - not in a hauty-tauty sort of way. You know in terms of the messages you are given growing up with - essentially – ‘you don’t give your neighbours anything to talk about’ - so sort of that private side -sort of built on that: Be good to people, [be]involved in the community, keep your nose clean don’t give them anything to talk about.

Bridget continues to be a very private non-confrontational person in the White Spruce setting. From the onset of her arrival at White Spruce, Bridget displayed a preference for solitude and for privacy.

> Bridget is at a [dining room] table with women who do not talk too much either. But even when she was at a table with women who talked she kept to herself.

> [Bridget]   would … initiate conversations when she was in her room … sitting in her chair [from] there [she could see] a tree down the way. “My, that’s a big tree, did you ever see that tree… my, that’s a big tree.” That’s the repetitive conversation. I am not sure that that happens anymore. Partly, she doesn’t sit in her room very much anymore; that is a difference.

Staff comments reinforce the perspective of Bridget as a private person who limits her conversation and interactions to the minimum. “Bridget usually only speaks when she is spoken to. Usually she is a pretty quiet lady.” Bridget will voice her wishes when she needs to, “If Bridget does not like something she will tell you. She is pretty reasonable.”

> Sometimes she will use an aggressive tone when you are trying to wash her "don’t do that; what if I did that to you?" sometimes in the morning she can be aggressive - "don't push me" "leave me alone" [but] never toward other residents.

Bridget participates in several activities including going to Mass and playing bingo. She also attends a spiritual discussion group led by the spiritual care director. One staff member commented,

> She goes to church, she gets a lot from going to church, but on a unit level it’s very difficult to get an arousal. For her, church is a big thing - she likes to go to Mass and bingo.

I accompanied Bridget to Mass on several occasions. A lifetime of church attendance was reflected in her ability to recite all of the Mass aloud and from memory. Bridget’s inclusion in the study is primarily for intellectual stimulation. The family and staff hoped that *the cat* could add to her quality of life.

> For her it’s more inattention - its hard to get her aroused enough to participate. It’s amazing how under-stimulated she is…Bridget has very slow decline. You could let a bomb off on the floor and Bridget would not react.

Caregivers and family strive to make the environment more stimulating for Bridget. One solution initiated by staff was to move her into an area where there is constant activity.

> She used to sit in her bedroom but I find now they take her out of her room and put her in the multi-purpose room so she can see the others - but I noticed she is sleeping in her chair.

Bridget articulated her opinion of the residents who were assembled in front of the nursing station, a common practice in many long term facilities.

> For the first couple of years she was in her room more… when she first came she didn't like to go out there she would say "oh, they are just a bunch of dummies out there. They just sit and don't do anything." [Bridget] has become one of the ones that she wasn't comfortable with.

Bridget's family visits regularly, endeavoring to make their visits entertaining. On one occasion, during the research period, a small group of three or four family members came to have tea with her. White Spruce has a beautiful china tea set residents and families use for these occasions. As I was walking past the door of the room where they had gathered, I observed Bridget alert and engaged in the conversation.

Victoria

Victoria had lived in her own home for approximately twenty years before a serious fall required surgery and hospitalization. She was transferred from the hospital to White Spruce.

> Walking and balance is a problem. That is part of the reason she is where she is because she has had a couple of very bad falls which led to this placement. She fell and cracked her head open and had to have surgery and things like that.

Victoria uses a wheelchair and requires full assistance for all of her daily needs, including getting in and out of her wheelchair and her bed. She is considered legally blind. The transition from her own home into long-term care has not been an easy process for Victoria, despite the preparations she made for the potentiality of requiring care. While still able, Victoria selected White Spruce as her preferred location and had arranged for a family member to assume decision-making responsibilities for her. Despite these preparations and having moved to White Spruce three years ago, she continues to believe that she could return home and tend to her own financial affairs. A family member indicated that “She doesn’t understand that she is incompetent to take care of herself.”

It was hard for anyone to really know how to deal with her because she would piecemeal out information. So she would give you information and then give someone else another piece of information. So no one would get to know the whole of her life and she was in charge of it all. So it is hard for her to hand that stuff over.Her family member indicated that Victoria has always been a very competent woman; a regal woman with an interesting profession. Her clinic provided services to clients in three provinces.

> Victoria is sort of like Katharine Hepburn - very regal in a way, used elaborate words and how she conducted herself. She used to smoke a cigarette with a cigarette holder, wore hats… She sort of talked like her and had that air; she was a very fascinating person.

> She managed her own affairs. Her mother and step-father, she managed their affairs. So it is hard for her to hand that stuff over.

Staff participants concurred with the family member’s assessment.

> Victoria has had a hard time adjusting. This is a lady who has mixed dementia. She has struggled since the day she came here. She was deemed incompetent and she didn’t think that she is incompetent and so has really

> never trusted anyone after that. She was one of those strong women who weren’t going to be subservient. She likes everybody. She knows you by how you look and how you sound.

Weekly conversations centered on her wanting to go home. Periodically, to ease the agitation stemming from Victoria’s concern about her home, the family or staff would take Victoria back to her home for an afternoon or a few hours. Victoria’s family continues to honor her request, maintaining her house as she left it.

> We used to take her to her [house] once in a while to ensure her that everything is still there. That would calm her down for a little while. But now from a physical point of view it is too difficult because of the wheelchair.

As time went by, the caregivers became concerned that taking her out to spend a few hours in her house was causing her more anxiety.

> As a team, we think it would be more traumatic for her [to go to her house] we are not sure she would even recognize it anymore. In the last few months with Victoria, since last summer, there has been a big decline in a cognitive point of view.

Temporal confusion, living in the past and the present simultaneously, a unique aspect of Victoria’s dementia, complicates the ability of others to follow her conversation. A family member commented,

> She would talk about her doctor and we would not know what decade she was referring to. [Victoria] would really twist things in her mind. It was really difficult trying to guide her through some things because she does not misinterpret things - in her own mind, she does not misinterpret anything.

Mary, one of the staff participants, related an incident illustrative of Victoria's confidence in her own knowledge. At issue was Victoria's belief that she had been told that Mary had died. When Mary stopped to speak with her, Victoria said, "Aren`t you dead?" Mary assured her that she was alive and well and attempted to start a conversation. Victoria refused, stating, "I don`t talk to ghosts." Mary made several more attempts over the next few days. Finally, convinced that Mary was indeed alive and well, Victoria responded, "Well that was poor reporting."

The following dialogue was recorded at the beginning of one of *the cat* sessions. Several nurses on practicum were vacating the room as we were arriving. The transcript illustrates that Victoria is aware of her surroundings and how she merges the present moment with a memory of past events.

> This is, ah…maybe the room we come into to do their reports but now it's going to be to the girls all summer. And their natural grandmother adores them. One day I saw a little tiny boy animal, I was going to say flitting, from here to another room somewhere else and it was wonderful to see. .. Is it [your] first time here? Everyone is always surprised at the furniture, because it is very good; you wonder where they got it. What would

> normally be a cot in a cottage is really good furniture. It looks as if it has been cared for well. I wonder if there have been any stories about an upholstery clinic here in the lounge.

There is consensus among the staff that her conversations are becoming less coherent. As Victoria`s dementia is advancing, she is talking more about her mother. There is an increase in negativity and repetitive sentences and requests.

> More and more [Victoria] talks about her mother, where [Victoria] was not at that point before - she could sort of fudge her way through a conversation.

> Victoria is one of those ones who always seemed better than she really was, [she was] able to manage because she is a very intelligent woman and very articulate. [She] did a lot and saw a lot so that of course helped carry her through, but now she has lost that ground. So her conversations are more nonsensical now. She has a phenomenal vocabulary. We used to have very interesting conversations.

I escorted Victoria to the hair salon for her regular appointment to have her hair trimmed and set. On another occasion, Victoria went to church services. Victoria was the only resident who thanked me for taking her out.

Victoria was added to the project to see if interacting with *the cat* could reverse the negativity and her repetitive requests and statements. Although she was not described as a pet person, her family said that she was a nurturing aunt who would read stories to the children perched on her lap and she was committed to taking good care of her mother and step-father through careful attention to their financial affairs.

Rhonda

Rhonda transferred to White Spruce from another long-term facility. She lived in her own home until 2006 when her family became concerned that she was not getting sufficient social interaction and the onset of dementia made it unsafe for Rhonda to remain living independently. While living in community, Rhonda was described as someone who,

> … loved reading the paper every day that kept her tied to her community - but didn't particularly enjoy reading novels or anything like that. [Music] has been with her always but much more prevalent since her dementia … she loved to garden. She loved the outdoors. It's part of the pride. It's a certain extension of her own being.

> [She] was extremely attractive. She had this curly hair that she had a rather unique hairstyle that stood out over the years. She cropped it fairly close to her head for many years and it was very stylish. She was a fashion lady. If it had to do with shoes or clothes - she loved shopping. She is easily diverted, if she is in a bad mood, if you just talk about how pretty she is.

At White Spruce Rhonda enjoys participating in a variety of the organized activities such as bowling, card games and bingo. She likes to listen to music in her room, which is decorated with a significant collection of plush animals. Four of the plush animals, which she refers to as her babies, are usually located in the basket attached to the front of her walker. Rhonda's babies are very real to her and contribute to her mental wellbeing.

> Gosh [the plush animals] are like... they are little saviours for her. It is just fascinating. When we were in earlier stages and this attachment to the plush animals was starting, I would get calls because her dog wasn't eating. There was that sense of oh! Good gosh, she is going off the deep end you know. But then after a couple of chats with a psychiatrist and a friend of ours, as well as her GP, we realized that being a part of this fantasy is better than causing her anxiety outside of it.

Rhonda shares a dining room table with one other resident and frequently with a family member who comes to eat with her. Rhonda does not need help at meal time but is fully reliant on the caregivers for her daily living needs. She frequently objects to personal care and is known for speaking sharply to some of the caregivers.

> There is an interesting side of her dementia; the nastiness can come out sometimes. We have certainly borne the brunt of that. [Its] just like day and night- a Jekyll and Hyde situation. If she doesn't like someone she is no holds barred in letting them know.

The family and staff are hopeful that interacting with *the cat* might ease the agitation associated with personal care. Caregivers and I noted the shift in Rhonda's demeanor when *the cat* was present.

> Animals will switch [her mood] - I will take an animal and sit it in her lap making sure that it is looking at her because she is very - she notices the eyes – [and will say] he is looking right at me.

Family members related two incidents exemplifying Rhonda's deep affection for pets as well as her strong desire to have a pet.

> She loved dogs and always had a dog of some kind that she rescued from the neighbourhood usually. Yeah both [Rhonda] and [her husband] enjoyed the companionship of an animal. Well, it is interesting that the dogs usually found her. They would wander the neighbourhood in those days and she would feed them and they would come back. So much so that when [a neighbour] was leaving the neighbourhood they would just decide to leave the dog rather than disrupt the dog - and Rhonda probably.

The second incident occurred at a mall pet store. Rhonda and a family member stopped to look at the animals. Rhonda, determined to have one of the animals, became extremely upset when she was told that the animal had to be left behind. It was an upsetting experience for both Rhonda and her companion. Pet stores are no longer considered an appropriate place for an afternoon outing.

Rhonda has the most visitors of all the women in the study. Because of her constant companionship, I did not get to accompany Rhonda on any excursions, although

I was invited to sit with them in her room. With the exception of the activities she enjoys, card games and bingo, Rhonda spends the majority of her time in her room, surrounded by a vast collection of plush animals.

Rhonda`s agitated behaviours include verbal aggression and negativism. When her family has gone for the day, Rhonda tries to find ways to get into the elevator or into other resident`s rooms.

Jean

Jean was the second participant described as a pet person. Her family raised a cautionary note when agreeing to let Jean participate. They feared that exposure to the research cat could resurrect the sad memory of having her last cat euthanized. Jean's dementia is categorized as in an advanced stage. She requires assistance with all activities of daily living, including assistance at mealtime. She is not always cooperative with these activities. Jean is highly mobile, moving freely and frequently throughout the floor. Like Helen, Jean wears an electronic bracelet that prevents her from leaving the floor unattended. A pronounced characteristic of Jean's dementia is a speech disorder which makes it difficult for her to communicate effectively. Although Jean speaks in long flowing sentences with appropriate facial and vocal expression, the sentences are frequently constructed with inappropriate or made-up words. The following excerpt is part of a conversation Jean had with *the cat*. Jean's tone was gentle, her facial expression soft, as she leaned forward to give all of her attention to *the cat.*

> You know what? Her eyes open but you know what? I can see one, two, three, four, five, coming to those guys and the people when they came in found it was you come again. That with you coming then, I thought you came first. I was so grand with you. You do things so well and your more blue eyes than you ever had in the whole world.

Jean constantly talks out loud to herself. In an agitated state, Jean appears threatening to other residents as she becomes verbally aggressive. Jean will go very close to a resident and tell her or him to move. I observed other residents giving Jean a wide berth, which I expect is an attempt to keep distance between themselves and Jean when she is agitated. Jean spends her time walking up and down the halls reading the room numbers on the doors. Some of the residents look uneasy when they notice Jean pausing at the doorway to their rooms.

Several staff members commented on various methods they have discovered that can be used to calm Jean when she becomes aggressive or verbally abusive.

> Jean has a teddy bear and an old picture of herself when she was younger, both of those calm her down and then we can wash her or do what needs to be done.

> I find I use her pictures and engage her in conversation. Regardless of where the conversation is going, she is distracted and she is engaged and you can get her dressed with a lot less resistance.

There was agreement among the staff that some residents react differently with male caregivers than they do with female caregivers. Frequently, male caregivers have a calming effect on these residents. Jean`s family member has a similar influence over her mood.

> The other day her family was here and she just walked back and forth with him. I think she was happy to see him because she hadn't seen him for awhile. She knows that she misses him so she remembers that part and so it’s almost like when he is not here she gets worse and then he comes back and she remembers who he is.

I experienced a similar lifting of Jean`s mood as a result of she and I attending a music concert on the first floor. We arrived part way through the performance to a standing room only crowd immediately inside the open doorway. In a display of unexpected collegial warmth, Jean waved to various residents from the second floor who were among the audience. Jean is very musical, moving in perfect time with the beat. To the amusement of all of the caregivers and me, every time her dancing arms passed through the doorway, her bracelet set off the electronic monitoring device, sending me dashing off to the panel to reset the alarm.

Language Skills

The base line information gathered during the first week of the study indicated the range of language skills among resident participants. I was somewhat surprised by the communication abilities of these four women, expecting that persons rated in the mid and late stages of dementia would have had more difficulty communicating (Appendix A). This experience illustrated that the progression of dementia is unique to the individual and flexible rather than rigid and linear. The women, despite sharing similar categorizations, represented various points within a continuum of cognitive ability.

From the outset, Rhonda was the most articulate resident, quite able to carry on a conversation and to understand and to use humor. She could ask appropriate questions and responded to simple questions. Victoria and Bridget were not quite as articulate as Rhonda. All three of them frequently forgot nouns. Helen communicates through smiles or shoulder shrugs and simple one or two word comments. Jean had the most advanced aphasia of all participants, but still communicated with what appeared to be complex sentence structures comparable to Victoria’s conversation.

Conclusion

The introduction to the five women demonstrates just how individual they are. This supports the position that care needs to focus on the person more so than on the symptoms. In Chapter Five Findings and Discussion, outcomes of the research are presented which illustrate that the different responses to *the cat* are based on the unique personalities of the five women. The outcomes are organized under three main themes, research questions, evaluation of the cat, and emerging themes which include unanticipated observations.

Chapter Five

Findings and Discussion

The responses to the research questions create the framework for the discussion of the evidence gleaned through the data analysis described in Chapter Three. These findings are animated within the context of five unique women introduced in Chapter Four, whose personal experiences are the center of this thesis. The willing participation of these women was an essential factor in the deliberation of whether *the cat* appealed to the residents and whether the time spent with *the cat* influenced their levels of agitation and stimulated their nurturant behaviour. The chapter begins with their attendance at *the cat* sessions and a discussion of the interpretation of their willingness to attend.

The response to the first research question is presented as a collection of the women's various words and actions interpreted to indicate interest or disinterest in *the cat*. The second and third questions looked for indications that *the cat* influenced incidents of agitation resulting in a change in mood for the women. The Cohen-Mansfield Agitation Inventories (CMAI) tool was the primary source of data for these questions. The fourth question explored nurturant behaviours, identifying those present along a scale of increasingly personal connection. The second section of this chapter centers on the use of *the cat* in this PCH going forward. Successful integration into White Spruce relies on *the cat* meeting a set of criteria. *The cat* must be effective, practical, complement local culture (person-centered care), and appeal to the residents and be consistent with the professional and personal values of the staff that are expected to use *the cat* with the residents. The interviews with the staff and family participants are the focus of this portion of the chapter. The chapter will conclude with a short discussion of three topics, the impact of research in a busy PCH, the research tools used and perceptions of expected and preferred natural ways of the functioning of persons living with dementia.

Residents' Participation

This research was structured to respect the personhood and the autonomy of the participants. While the study necessarily took place in a context in which informed consent could only be fully given by an authorized person acting on behalf of each resident, the study sought to respect the person of each resident and her choices throughout the research. Achieving this goal ideally meant that each resident would speak for herself and that I would be able to understand her intent and respect it in the research process. The combination of spoken words and body language viewed within the context of the moment contributed more to comprehending the residents than strict attention to words alone could have, but it was still not possible to be sure that this was fully achieved. The active participation of the residents was limited to the sessions with *the cat*. Although the letter of consent granted permission for each resident to be involved in the research, it did not obligate her participation. To respect the right of these individuals to have jurisdiction over their lives, the research design stipulated that a resident had autonomous control over her involvement by choosing whether or not to attend the sessions with *the cat*, to engage with *the cat* at her discretion, and to terminate a session at any time.

The observations of the residents in the first week of the study indicated that the women had the ability to respond appropriately to simple requests and follow straightforward direction, a characteristic consistent with this advanced stage of dementia

(Appendix A). The casual invitation extended by the caregiver to the resident was intended to provide an opportunity for the resident to choose whether or not to attend. With the options limited to attending or not attending, I assumed it would be relatively easy to determine each woman's decision with the caveat that it is not possible to fully recognize or understand the motivation behind their choice. I had anticipated a high probability that the novelty factor would have been sufficient enticement for each woman to participate in the first session. Attendance at subsequent sessions would reflect the resident's previous experiences. Somewhat unexpectedly, none of the women refused to come to a session even though not all of the women remained as enamored of *the cat* as Jean and Rhonda. Victoria's initial interest in *the cat* waned, while Helen was ambivalent to *the cat* from the outset, possibly harbouring a fear of animals. Bridget, was replaced early in *the cat* sessions because of her apparent lack of interest which could be an expression of her desire for privacy, an indication of lack of agreement, or a residual response to being pressed to hold the cat when she had already indicated through her words and actions that she did not want to do so.

There are three plausible explanations for the unanimous agreement to come to the sessions. First, I observed that the residents were generally compliant with requests made by staff members. Second, it is possible that the resident did not understand the request or make the link to previous sessions. Lastly, the sessions held value for the women irrespective of *the cat*. The first option of general compliance is evident and requires little discussion other than to state the obvious that the home functions well because of the cooperative relationship fostered between the residents and staff.

The second option suggests cognitive dysfunction as a barrier to linking events. Evidence supports concluding that Victoria and Rhonda were able to understand the invitation and respond appropriately. Victoria readily vocalized her enthusiasm, “Oh yes, I would like that very much.” Rhonda made comments that affirmed her interest in the sessions providing support for the assumption that she linked past events to the potential for future events. A staff member stated, “[whenever Rhonda] sees someone with dark hair she says, “that’s *the cat* lady” adding “the other day she directly asked me “where is *the cat*?” Bridget demonstrated her ability to say “no” when she did not want to comply with a request made by a caregiver during a session. Bridget had been holding *the cat* on her lap. This segment begins at the point where Bridget wants to return *the cat* to the staff member.

Bridget: There now you take it. (moving *the cat* toward the staff member).
Staff participant: Do you want to hold it?
Bridget: No, it’s kind of heavy (looking at the speaker).
Staff participant: What about on your lap? (placing *the cat* in her lap)
Bridget: Well, I did hold it already (her facial expression is tense).
You go (pushing *the cat* back toward the staff member).

Bridget’s words and actions clearly indicated her desire to give *the cat* back to us. Responding to her initial request to return *the cat*, would have been a stronger acknowledgement of her autonomy than pressing her to continue to interact at that point.

Possibly this single event impacted Bridget's desire to continue to participate in the sessions. Helen and Jean's verbal communication skills made it difficult to verify that either woman understood the invitation, linked this invitation to previous events, or made an informed decision to attend another session.

The third possible explanation for unanimous attendance was that the sessions provided value to the participants other than time with *the cat*. On two occasions, Helen spontaneously joined a session in progress despite the barrier of a closed door or the strained relationship she had with one of the women involved in one of the sessions. Jean, the other resident who enjoyed time with *the cat*, would smile, wave, bow or curtsey whenever she spotted me in the common areas between sessions. This display of enthusiasm suggested that at the very least she connected me with positive experience, it would be difficult to conclude from these gestures whether her joy was in reaction to *the cat* or not. The research process did create additional personal attention and attention that was social in nature. The social needs of residents, especially as dementia progresses, are a concern of caregivers. Lack of socialization and withdrawing from social opportunities may be a symptom of depression. For this reason, socialization was added to the CMAI in order to monitor changes. CMAI results will be discussed later. In this context, it is likely that general compliance to requests from staff was a factor in agreeing to attend the sessions.

Question One

In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with the cat?

There are two responses required to address this question, first, a list of various forms of interest and disinterest (Table 6) coded from the video records and, second, a calibration to determine the level of interest and whether the level remained the same through the course of the interactions with *the cat*.

Table 6 Levels of Interest

Levels of Interest and Examples	
Disinterest	
• Moving the cat out of line of vision • Leaving the room before session completed • Asking to go back to her room • Yawning	• Ignoring the cat • Avoiding eye contact • Closing eyes or dozing-off • Changing the subject • Holding head and rubbing teeth
Aware	
• Turning toward the cat • Moving toward the cat	• Eye contact • Smile, chuckle, or quizzical face
Engaged	
• Discrete touches to the ear, toes, nose	• “Hello kitty”, ‘pussy, pussy, pussy”, “you are so pretty’, “best blue [eyes]”, “I that the cat”
Intimate	
• Are you sad? • Feeding it a cookie • Does it have claws/ miss the claws? • Does it have any hates? • Does it get bathed? • Reaching out for the cat • What are you looking at/ what do you see? • Hugging/kissing	• Whispered or inaudible comments • I want you to love me. • I want to take you home with me. • What is that? /Quizzical look in response to motor noises • Holding • Stroking, petting, turning the cat around to see all of it or so that the cat can see other people

Source. Video records generated in this study

A list of twenty-nine actions were sorted into four levels of interest, *Disinterest, Aware, Engaged* and *Intimate* (Table 6). Examples of interest (*Aware, Engage,* and *Intimate*) exceeded disinterest twenty to nine indicating a greater variety in favorable reactions to the cat was identified. The number of times each behaviour was observed was not recorded since the goal of this question was to identify the variety of ways. Examples of *disinterest* reflected lack of initiative to interact with *the cat* or unwillingness to acknowledge or engage with *the cat*. Obvious gestures of exclusion were listed, these included turning away, ignoring meows and purrs, changing the topic of conversation away from *the cat*, leaving the room and asking to be taken back to her room. Behaviours generally recognized as indications of boredom were also included as disinterest, such as yawning, holding her head held in her hand, looking out of the window and dozing-off. Twenty examples of interest were divided into three levels. The initial level of interest, *Aware*, reflected a rudimentary response to the presence of *the cat* including comments or questions about *the cat* while not directed to *the cat*. Limited reaction to meows and purrs such as a smile, turning or moving towards *the cat* were coded to this level. “Does it have claws? “Does it have any hates” reflected an interest in *the cat* although still somewhat disengaged from relating directly to *the cat*. The second level, Engaged reflected an exchange that was social in nature while neither self-revealing nor intimate; similar to a “hello” between two people passing in a hallway. Examples included basic greetings such as, “Hello kitty”, ”Pussy, pussy, pussy”, and minimal touch, a discrete touch to the toes or ears for example. *Intimate* interaction reflected the desire to establish a personal relationship or to engage in a meaningful conversation. Conversation is directed to *the cat*. In this level invitations to a more intimate relationship include a significant level of touch, words of love or affection and whispers. Relationships with *the cat* were not static but evolved over the course of the sessions. Rhonda developed a strong emotional bond. Jean’s relationship was affectionate. Bridget grew disinterested. Victoria shifted her focus from *the cat* to her own stories. Helen's reaction was at first guarded, gradually becoming more comfortable over the sessions. Frequently the various modes of communication worked in concert. On occasion, body language and words told different stories. In general, it is more difficult to use deceptive body language than deceptive words. The following transcript of Helen's first session illustrates that her discomfort with *the cat* was more evident through her body language and actions than by her words. Her body language is parenthetically embedded as it occurred.

Staff participant: What do you think of '*the cat*'?

Helen: It`s okay. (Smiling, she reaches out with one hand stroking the air around *the cat*).

Staff participant: Do you want to touch it?

Helen: Yeah, I touched lots of times. (Looking at the speaker, not at *the cat*).

Staff participant: I like its blue eyes. (Helen smiles at the speaker, looks towards the door, places her hands on the arms of the chair as if to stand up).

Staff participant: Did you have cats at your house?

Helen: No. (Stands up and heads toward the door).

Staff participant: No? (Helen does not turn toward the speaker).

Helen: No. (moving to the door her hand outstretched).

Staff participant: Where you going Helen? (Helen firmly closes the door behind her and moves off in the direction of her room).

Staff participant: I wonder if she was a little bit afraid – even when she touched *the cat*, she didn't touch it.

The caregiver labeled Helen's petting action which resembled stroking the air around the cat as "stroking *the cat*'s aura." [15] In subsequent sessions, Helen preferred to focus on the people in the room, not on *the cat*. She would move her chair so that *the cat* was not in her line of vision. When conversations were focused on *the cat* Helen would close her eyes, yawn, look off, put her head in her hand and generally appear bored. After a few minutes she would leave the room. By the fifth session, Helen appeared to have grown more comfortable with the presence of *the cat*. In response to an invitation to touch *the cat*, Helen commented, *"Yeah, she's nice. See. Look. Beautiful."* Using both hands she made one long stroke along *the cat's* back. Helen immediately left the room as she had in the first session.

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[15] Helen's family members performed the same "aura stroke", when introduced to *the cat*. Perhaps cultural or family attitudes toward animals shaped their reluctance to engage with *the cat*.

Bridget exhibited promising interest in *the cat* during her earlier sessions, spontaneously interacting with *the cat*, "Oh, aren't you ever cute" and "Yeah you're a nice pussy," while she was sanitizing her hands. This changed rapidly to disinterest once she was at the table with *the cat*, Bridget stated "I want is to go to bed and go to sleep, but how do we get there?" A directive approach was used with Bridget in the following sessions to see if it was possible to rekindle the initial interest she had originally shown for *the cat*. The presiding staff member and I tried to engage Bridget in a conversation about naming *the cat*. She told us she was tired and wanted to sleep. In the next session she closed her eyes, not responding to *the cat* or to conversation directed to her. Bridget's frequent sighs and frequent "oh dears" indicated that she did not want to participate. I returned her to her room and decided against further sessions. Greer et al (2001) reported a similar situation with some of their participants who did not want to interact with either a live cat or a stuffed animal. The researchers dubbed this body language "dozing off." Although Bridget and Helen used the same "dozing off" tactic, it appeared that only Bridget wanted to disengage from both *the cat* and the sessions.

Victoria initially and periodically, in following sessions, asked interesting questions about *the cat* or made astute observations. On occasion she spoke with slight hesitation, perhaps searching for the right words, "Does he have claws? No? How did that happen? Does he miss them?" and wondering "Does he ever get washed? His fur is a little rough, not as silky as it might be." She showed an interest in *the cat*'s temperament, "Does he have any hates?" and "Is there any part of *the cat* that you cannot touch? It's better to keep animals loving you instead of bothering them." Victoria tended to focus on *the cat* when directed, although she preferred topics of her choosing. A staff member commented,

> Other than being distracted with her outside interests, the time we spent together with her and '*the cat*' has been quite interesting. She relates very well to *the cat*. She knew very early on that it was a robotic cat, not a real cat, but still the emotional connection was the same, as if it was a real animal.

In the final session with Victoria, I stated I was particularly interested in her opinion of *the cat* because I knew that she had worked with very sophisticated machinery. She responded, "Well, if you think I could be of assistance." However, when the opportunity arose, she switched the conversation to an unrelated topic.

Rhonda and Jean's interest in *the cat* was obvious in words and in supporting body language. Both expressed warm regard through soft voices, gentle comments, physical contact and focused attention. The relationship between each woman and *the cat* was sustained throughout the two week period, although the attraction developed differently. Rhonda focused her attention on *the cat* as soon as she entered the session room. Her initial conversation with *the cat* expressed her delight and foreshadowed the depth of attachment that she developed with *the cat*.

> Oh, hello – you're looking at me? (The cat meows) Ahh! Meow -are you my pussy? Oh, you are a nice pussy cat. Yeah, you're a nice pussy cat. (Settling into the chair by the table) Oh look (reaching for the cat) Oh, he is so beautiful. I'll take him home.

Rhonda's conversations, during all of the sessions, were primarily a dialogue with *the cat*. Occasional aside comments were made to the caregiver and to me. She liked holding *the cat* on her lap or positioning it on the table so she could stroke it with both hands. Throughout the sessions her comments clearly indicated that she wanted to create a strong bond of affection with *the cat*. The following segment from the third session is typical of her desire for connection with *the cat*.

> *(To the cat)* Oh! I want you to say you love me. Are you going to say it? Are you going to say you love me? Hmmm? I want you to come home with me. *(To the caregive*r), He is so clean. Isn't he soft .I would love to have him with me in bed - he is so clean. *(To the cat*) Are you my baby?

Rhonda repeated statements throughout the sessions indicating her desire to have *the cat* love her and to take *the cat* with her. Her attachment to *the cat* shifted to possessiveness, culminating in a difficult interaction in the final session. The final session started off tensely with Rhonda objecting to the hand sanitizer and escalated to an agitated event requiring us to use the protocol developed for this potentiality. Possibly Rhonda was aware that this session would be our last and that created the urgency for her to keep *the cat*. My comments and those of the caregiver are excluded for brevity but can be deduced from Rhonda's responses. During this discussion *the cat* is sitting on the table in front of Rhonda. She was constantly in physical contact with *the cat*.

> Why would you take him home? He's mine.
>
> He is yours? Since when?

Oh no, he is busy being with me. No! He is my baby, I put things around him. He is not your baby.

Since when?

Oh heavens! I have - I have him visiting me. He goes to my bed.(In a sad voice) Oh gee, I am um.. I can't believe it. (Softly, to *the cat*) Ah baby look at you, you look so beautiful... yes, you do, yes, you do. What do you see? ('*the cat*' is looking off into the distance) Oh he loves me, I know. [And] he is not going to live with me?

(Directing her comment and gaze to me - growing more anxious and angry) Well I am so sorry [for] what you did.

Look he's my cat. He looks at me so peacefully. Look at him. He is closing his eyes and you are going to take him away from me.

Well, I am not going to have you take him away. I want him all of the time.

(To'*the cat*') that's no fun going to visit. I will have to get somebody just like you, hey. (Rueful laugh looking at me angrily) I guess I will have to do that if you are going to take this cat.

(She stops touching '*the cat*' - leans back) (to '*the cat*') Oh! I am so sad, I love you so much. I love you so much. You have such beautiful eyes.

(To me angry and accusing) Yeah. I can't believe that you are taking my cat.

> Where did you find him?
>
> You know damn well that I had him and you still took him.... (To this point the caregiver in attendance takes control of the session using the protocol for agitated incidents).

James et al. (2006) experienced an issue of possessive attachment in his study using baby dolls and bears. One participant, staking an ownership claim over dolls belonging to other women, created an unexpected issue. Rhonda's attachment to *the cat* suggests that she might not be willing to share *the cat* with other residents or could react if she saw another resident with a cat.

Jean, however, was able to detach from *the cat* at the end of every session, possibly because Jean did not appear to foster an emotional relationship with *the cat* such as Rhonda had formed. Similar to Rhonda's sessions, Jean's primary focus and the majority of her communications were directed toward *the cat*. Frequently, Jean made short comments to the staff member and me which appeared to relate to the communication she was having with *the cat*. On occasion, she would shift *the cat*'s position to invite us into conversation. It was difficult to follow Jean's conversation which exhibited aphasia or impaired language ability. The following excerpt is part of a conversation Jean had with *the cat*. Jean's tone was gentle and her facial expression soft and smiling. Her hands were tucked between her knees. She leaned forward to give all of her attention to *the cat*. Her words flowed easily following the cadence of conversation,

> You know what? Her eyes open but you know what? I can see one, two, three, four, five, coming to those guys and the people when they came in

> found it was you come again. That with you coming then, I thought you came first. I was so grand with you. You do things so well and your more blue eyes than you ever had in the whole world.

Jean's speech patterns would not have been considered *meaningful information units* as defined in the Greer (2001) study. However, it would not have been off the mark to interpret "you're more blue eyes than you ever had in the whole world" as "you have the bluest eyes in the whole world." This incident suggests it might be possible to derive the meaning from Jean's words, as Coste (2003) was able to understand her husband's language. However, I did not incorporate 'translation' into my research project; instead, I ignored the actual words in favour of her focus, tone of voice and rhythmic delivery, indicating that she was in meaningful communication with *the cat*. Touching *the cat* was one way to gauge interest. Unlike Rhonda, Jean touched *the cat* sparingly, confining contact to stroking *the cat*'s nose or its feet with only one or two of her fingers. She would slide one finger up *the cat*'s nose and across its forehead in an action reminiscent of moving errant bangs from the eyes of a child. The touch was affectionate but not as intimate as the contact displayed by Rhonda. Unfortunately, *the cat* shuts off automatically when it is not being stimulated by touch. This feature, designed to extend the life of the batteries, proved to be a challenge in the sessions with Jean.

The unexpected arrival of a family member at the start of one of Jean's sessions provided a further example of the relationship Jean developed with *the cat*. The visitor felt it was important for Jean to proceed. Frequent glances toward the door and an anxious hand running through her hair gave the impression of impatience, although Jean did not convey that in her tone of voice or actions toward *the cat*. Her frequent glances toward the door and running her hand through her hair indicated distraction, suggesting that she would like to be somewhere else, Jean continually returned her focus to *the cat* until the end of the session. Jean is one of the residents who found it difficult to remain in one place for extended periods of time. With the obvious excitement of the arrival of a visitor; it was interesting that she did not leave while the session was in progress.

There was a continuum of reactions to *the cat* foreshadowed by each resident's early life history with pets. Helen was reluctant to engage. Her background suggested that she may have been afraid of animals. Neither Bridget nor Victoria had pets. Bridget's family stated that she felt animals belonged on a farm or outside. Victoria was described as someone who was "gentle with the dog, but not a strong pet person." Jean was a pet-loving woman who was able to make the decision to have her cat put down when it was in *the cat*'s best interest. Jean formed an affectionate bond with *the cat*. Rhonda's family related two incidents that indicated Rhonda formed strong bonds with animals that tended to become possessive. Rhonda became possessive of *the cat*. Apart from Rhonda's anxious reaction during the last session, there was a marked decline in the ranking of various forms of agitation for each of the women and in the aggregate of the top eight common forms of agitation. The influence of *the cat* on agitation was the focus of the final three research questions.

Question Two

Will residents who have incidents of agitation, or exhibit non-interaction, experience a decrease in frequency or intensity of agitation, or increased interaction in response to the cat?

One of the criteria for inclusion in the study was that the women would share a cluster of agitations as well as unique forms. The CMAIs were the primary source of information. Interviews with participating family and caregivers were an auxiliary source of evidence. The intention for Questions Two and Three is to see whether there is any evidence in changes to agitation that could be attributed to spending time with *the cat*. A series of three CMAIs for each resident reporting on consecutive two week time periods were prepared. The time periods represented the *Pre-Cat Phase* and *Cat Phase* where baseline data was recorded. The *Cat Phase* covered the two weeks where the residents interacted with *the cat*. The final CMAI covered the *Post-Cat Phase*, a two week period following *the cat* sessions. Individual results provided a picture of changes in agitation for a particular resident, merging the individual results to concentrate on the cluster of shared agitations was intended to consider whether there was a general trend in changes to agitation within this group of behaviours. The shared cluster would not include the behaviours with the highest frequency unless the same behaviour was shared by at least four residents. Eight agitated behaviours were identified as common to at least four residents (Table 7). Behaviour totals were calculated using the frequency code numbers as numerical values. For example, General Restlessness *pre-cat* total reflected two residents with a frequency code of three (once or twice a week) and individual values of two (less than once a week), five (once or twice a day) and six (several times a day) for a total of nineteen. The combined total frequencies of these eight behaviours in the *Pre-Cat Phase* was one hundred and six, dropping to forty-two during the *Cat Phase* and with a further decline to twenty-four in the *Post-Cat Phase*.

Table 7 Cluster of Shared Agitations

CMAI Agitation Description	**Total frequency value Phase**		
Agitated behaviours common among the women	**Pre-Cat**	**Cat**	**Post-Cat**
1.Pacing, aimless walking	17	16	13
2. Inappropriate dress or disrobing	13	6	2
6. Repetitive sentences or questions	10	7	0
16. Trying to get to a different place or out	13	0	2
18. Complaining	8	2	0
19. Negativism	13	2	2
28. Performing repetitions mannerism	13	0	0
31. General restlessness	19	9	5
Combined Total	**106**	**42**	**24**

Source. CMAI forms generated in this study

Frequency code values **Codes: 0**= never **2**= less than once a week **3**=1-2 per week **4**=several times per week **5**=once or twice per day **6**= several times per day **7**=several times per hour

The drop in agitated events between *Pre-Cat* and *Cat Phases* reflected the immediate influence of *the cat* sessions. Residual or ongoing positive effect was indicated by the further drop between the totals for the *Cat Phase* and *Post-Cat Phase*. Two types of agitation stopped during *the Cat Phase, performing repetitious mannerisms* and *trying to get to a different place or out of the building*. Three behaviours, *performing repetitious mannerisms, repetitive sentences or questions* and *complaining* were not present in post-cat. However, there was at least one occasion where Helen was identified as *trying to get to a different place or out of the building*. The five remaining behaviours were reduced to the frequencies of two (less than once a week) and with the exception of *general restlessness*, which was reported for two women (Helen and Bridget), the other agitations were noted for individuals only. In effect, the cluster of agitations had ceased to be a cluster by the final phase.

Individual resident agitation totals (Table 8) were calculated in the same process used for the shared agitations with the exception that only behaviours that occurred two to three times a week or more during the *Pre-Cat Phase* were included. The number of agitated events, indicated as parenthetical numbers beside the table totals, varies from one resident to another. The data indicates that the number of incidents of agitation as well as the frequency of the behaviours declined from the baseline to the cat sessions. The post-cat sessions indicate that Helen, Victoria, and Bridget had a further decline in frequency and a drop in the number of agitated behaviours they displayed. Jean's frequency level and the number of behaviours remained the same as in the *Cat Phase* while Rhonda's total increased slightly and one form of agitation returned in the final two weeks.

Table 8 Individual Resident Agitation Frequencies

		Total Frequency Values (*)		
Resident	**MMSE/CPS**	**Pre-Cat**	**Cat**	**Post -Cat**
Helen	Severe / 4	29 (6)	14 (4)	7 (2)
Jean	Severe / 4	17 (4)	7 (2)	7 (2)
Rhonda	Moderate / 3	20 (6)	5 (2)	6 (3)
Victoria	Moderate / 3	16 (5)	7 (3)	2 (1)
Bridget	Moderate / 3	6 (2)	6 (2)	4 (2)

Source. CMAI forms generated in this study
*Number of forms of agitated behaviours for this resident
Frequency code values **Codes: 0**= never **2**= less than once a week **3**=1-2 per week **4**=several times per week **5**=once or twice per day **6**= several times per day **7**=several times per hour

Helen experienced the largest drop in the overall total, moving from a base line of twenty-nine to fourteen, ending with seven. The number of behaviours that correlated to those totals reduced from six to four, concluding with only *pacing, aimless wandering and trying to get to a different place still* evident. Pacing behaviour shifted the least, starting at seven and dropping by one in each report, to conclude with a value of five. However, Helen's pacing behaviour is a consistent lifetime pattern. Helen's second highest ranked behaviour was general restlessness. This behavior was reduced from a level of six (several times a day) to four (several times a week) and was not present in the *post-cat* period. Addressing the issue of constant motion was the identified desired outcome for Helen as a result of interacting with *the cat*. The family and staff felt that if Helen remained inactive for longer periods of time she might eat more and conserve her calories. *Loss of appetite* and *increased appetite* were two items added to the standard CMAI form. The results did not indicate a measureable change in eating habits. *Sobbing,* however, moved from an initial value of two to an ending value of three. Conversely, *visible happiness* moved from three (one or two times a week) to four (several times per week).

Jean's individual results indicated a reduction in her agitated behaviour profile, lowering frequency totals from seventeen to seven for the following two reporting periods. *Performing repetitious mannerisms* stopped; although, this behaviour started at a lower frequency and likely did not represent a problem for other residents or staff as *cursing or verbal aggression* would have. The starting value for *cursing and verbal aggression* was five (once or twice a day) dropping to zero in *the cat and post-Cat Phases*. The significance of stopping verbal aggression is that this is a behavior that impacts caregivers and residents. Considering the possibility that a person with dementia may have a heightened sensitivity to the body language of other residents and caregivers, a verbally aggressive resident would be upsetting (Bolte Taylor 2008, Kitwood 1993). A staff member commented on the ripple effect of an aggressive episode,

> “When someone is in a mood like that [the staff] and other residents become a bit at risk. So [aggression] doesn't affect just one resident. Actually it affects about ten.”

A non-participating resident underscored the lasting impact of acts of aggression on other residents. Pointing a finger at the resident beside me she whispered the warning, *“She’s dangerous, dangerous”* before moving off quickly. Several researchers commented on the positive correlation between interacting with the robotic seal and improved socialization amongst the participants (Wada et al. 2006 and Wada and Shibata 2008, 2007). Reduction of verbal aggression, for Jean, would be an essential factor in making an environment more conducive to successful socialization. *General restlessness* decreased from five (several times a day) to three (several times a week) and remained at that level in the *Post-Cat Phase*. *Pacing or aimless walking* was not affected, remaining at a frequency of four throughout the entire project. There are three possible explanations why no change was recorded. First, walking may have been a lifetime habit, as it was with Helen; second, *the cat* may have been an inappropriate diversion for the root cause; finally, *pacing* may have changed in intensity and we were monitoring frequency. Three of the seven additional items on the CMAIs addressed aspects of mood. Jean had initial frequency rates of five and four for *sobbing* and *visible sadness*. *Sobbing* decreased and remained at two, while visible sadness decreased from four, to three, ending at two. Consistent with these findings was the increase in *visible happiness* which increased from three to a daily event rank of four.

Rhonda had the second highest overall total as well as the second highest number of agitated behaviours. Three behaviours, *trying to get out or to a different place, general* *restlessness* and *performing repetitious mannerisms* were no longer evident at the end of *the cat* sessions and had not returned at the end of the *Post-Cat Phase* two weeks later. *Negativism* dropped from four to two and remained at that level. *Pacing or aimless walking* remained at three for the first two periods but ended with a slight decrease to two. *Cursing or verbal aggression* which initially fell from three to zero returned to a rate of two which meant that in the final two weeks at least one occurrence of swearing or verbal aggression was noted, not including the situation that arose in our final session with *the cat*.

All five of Victoria's agitated behaviours stopped at one time during the research. *Inappropriate dress or disrobing* and *negativism* stopped with *the cat* sessions, while *repetitive sentences or questions, loss of appetite* and *general restlessness* persisted until the *post-cat* period. *Inappropriate dress or disrobing* returned at a low rate of two in *post-cat*. *Inappropriate dress or disrobing* as communicating an unmet need was evident at the end of one of *the cat* sessions. Victoria had begun fiddling with her buttons at the twelve minute point and two minutes later her blouse was unfastened.

> I seem to have undone all my buttons (I offer to help Victoria to close the buttons.) No, I would like to go to my bedroom and pick up my top cover and get in under it and go to sleep. Do I live here?

Further attention to the relationship between undoing buttons and sleepiness would validate or disprove that *inappropriate dress or disrobing* is a communication strategy indicating Victoria is feeling tired. Victoria's *sociability, initiating or joining,* increased from zero to three during *the cat* sessions but dropped off to two in the *Post-Cat Phase*.

Visible happiness increased from two to three and remained at that level. *Sobbing* was not identified as one of her agitated behaviours by the caregivers, although Victoria asked me "Why do I find myself crying when I talk about my home?"

Bridget demonstrated the least number of agitated behaviours and those that were evident had very low frequency values. Bridget did not complete the series with *the cat* which might explain why her numbers didn't change, although compelling her to continue could have had a constructive effect on the frequency of agitated events. Staff and family members were concerned about her lack of socialization, fearing this to be indicative of underlying depression or apathy, a passive form of agitated behaviour (Kolanowski et al. 2005, Kolanowski and Whall 2000, Talerico et al. 2002). Considering the possibility that Bridget's lack of social engagement was a form of passive agitation, the CMAI would have been an inappropriate tool to monitor changes. The family and staff hoped that *the cat* could add to her quality of life.

> "For her it's more inattention. It's hard to get her aroused enough to participate. It's amazing how under-stimulated she is."

Perhaps the clues to Bridget's behaviour are more influenced by her personality and her natural ways of functioning than to depression or passive agitation. A series of comments from family members and staff draw a profile of a very private woman,

> You know in terms of the messages you are given growing up with - essentially - you don't give your neighbors anything to talk about - so sort of that private side -sort of built on that: Be good to people, [be] involved

> in the community, keep your nose clean don't give them anything to talk about.

Staff comments reinforce the perspective of Bridget as a private person who limits her conversation and interactions to the minimum. "Bridget usually only speaks when she is spoken to. Usually she is a pretty quiet lady." Bridget does actively participate in certain activities including small discussion groups led by the spiritual care director.

> She goes to church, she gets a lot from going to church, but on a unit level it's very difficult to get an arousal. For her, church is a big thing. She likes to go to mass and bingo.

One solution initiated by staff was to move her into an area where there is constant activity.

> She used to sit in her bedroom. But I find now [the staff] take her out of her room and put her in the multi-purpose room so she can see the others. But I noticed she is sleeping in her chair.

The following excerpt appears to offer another view of Bridget's desire for the seclusion of her room.

> When she first came, she didn't like to go out there. She would say "Oh, they are just a bunch of dummies out there. They just sit and don't do anything." [Bridget] has become one of those ones that she wasn't comfortable with.

Reflecting on the earlier quote, is it possible that moving her from her room is actually contrary to her personal choice? Through these excerpts the image of Bridget as a private person who would not want to be the centre of gossip emerged. “Dozing off” (Greer et al 2001) may be a strategy to avoid the reality of her location. Conversely, Bridget can make her wishes known as was evident when she wanted us to take *the cat*. Whether her preference might be to push the point or opt for the *doze-off* strategy would be interesting to explore.

Question Three

If there are observable changes in behaviour (agitation, interaction), does this suggest a change in the emotional state - cheering, calming, or upsetting?

The findings for this question are based on the changes to the CMAI forms presented in detail for the previous question and supportive or contrary observations made by family members or staff recorded during the exit interviews. Victoria’s CMAI forms indicated that only one of the five forms of agitation had been observed in the *Post-Cat Phase*. Notably her negativism had stopped and there was an increase in sociability and visible happiness. When asked whether there had been a visible change in Victoria’s mood or agitated behaviours, there was agreement among the staff that the activity with *the cat* was enjoyable to Victoria. Victoria did not have a visiting family member during the research; however, staff comments describe Victoria as contented and interested in socializing. “We see examples of contentment with Jean and Helen and with Victoria.” “Victoria is not discontent. Even sitting out here lately she has been content she will sit and rock her feet.”

> [Victoria] likes to sit with [Martha][16] and they will hold hands together, not all the time and we ask if they want to. [Martha] is very good at being nurturing and I think that it gives [Martha] a purpose too.

Jean stopped two of four agitated behaviours including verbal aggression. Sobbing and visible sadness were less frequent and visible happiness had increased with *the cat* and remained higher than the starting level. Staff comments indicate a change in Jean’s emotional state and a consensus that *the cat* was an effective tool in moderating agitated moments and increasing her sociability. “Jean was calmer and able to interact more effectively with other residents.” One staff member’s comments indicate a willingness to include *the cat* in with other approaches he uses to control agitation, “There are three things that really calm [Jean] down, pictures of herself in her younger days, her family members and *the cat*.”

Jean easily connected to and disconnected from *the cat,* “Jean suddenly changes to talking with a soft voice, “aren’t you cute,” and Jean did not have a problem leaving *the cat* behind. Considering Jean’s reputation for confrontational behaviour with other residents, one staff member concluded,

> I would leave Jean alone with ‘*the cat*’. I think it would be better if she had it in her room because she sometimes fights with people in the common room.

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[16] Martha is a pseudonym for a non-participating resident.

The respondent did not appear confident that Jean would not react to other residents expressing interest in *the cat* she was holding or that her verbal aggression would not return. We did not explore a scenario where *the cat* was used in a group setting. There would be no assurance that, because it was easy to disengage Jean from *the cat* at the end of each session, she would be willing to share *the cat* with other residents.

Despite the unfortunate incident during Rhonda's last session with *the cat*, there was general consensus among participating family and staff that *the cat* had made a positive contribution to Rhonda's demeanour. Rhonda started with six forms of agitation and ended with three that were reported at frequencies of at least once in the last two weeks. Rhonda's negativism had decreased, although her verbal aggression that had stopped during *the cat* sessions had returned. There was an increase in her socialization and visible happiness. Several staff commented that "[Rhonda] has changed a lot since she got here - she is not as aggressive now - she has calmed down." One of her family members commented on the positive impact of animals. " Animals will switch [her mood],- I will take an animal and sit it in her lap making sure that it is looking at her because she is very… she notices the eyes, [and will say] he is looking right at me."

Family and caregivers commented consistently that separating Rhonda from *the cat* could be an ongoing issue, often suggesting that it would be better for her to have her own cat. One staff member, reflecting on the immediate impact of *the cat* on the emotional state of Rhonda and Jean commented. "With Rhonda and Jean you could use *the cat* as incentive to have their daily care." Although, it is possible that '*the cat*' might not be an effective aid if Rhonda had her own.

Helen’s agitations are related to constant movement and her desire to get out of the building, not emotionally charged behaviours. Visible happiness increased while sociability remained at a constant level, indicating *the cat* did not have an impact on this aspect. Helen’s family members and staff noticed changes but were reluctant to attribute these to the time spent in the sessions. It was common knowledge that Helen was not a pet person which may have contributed to attributing changes to other factors.

> Helen, she hasn’t changed. [She] is still wandering but more relaxed though - and that was mentioned actually by the staff - she seems more relaxed and happier. Not sure why that might be. She is still driven, though, she is one of those people that are going to keep walking, but she hasn’t had that look in her face, you know she gets that look.

Two respondents noticed a change but attributed the shift in behaviour to Helen finally feeling settled in at White Spruce,

> “She has been more settled. Yeah, I noticed like the other day, she just kind of let [her family member] go.”

Helen’s reluctance to be separated from her family has been difficult for the family who are dedicated visitors. As one family member commented,

> Lately [Helen has] been ok. I know they say that it takes six months but I think it has taken well over a year. I find she's settled now. Because [another family member] has been her security blanket, I think she is going to give [this family member] the hardest time. For me, I just say ok I

> have to go back to work now and she says ok, good bye. [The other family member] has had to give her white lies all the time.

The staff member who participated in the majority of Helen's sessions and I both noticed a shift away from wordless departures from the early sessions. Helen, on three occasions, excused herself, each time with a more elaborate good bye, "I go now," "I have to go now," and "I am sorry I have to go now somebody is waiting." Each of these departures suggested a rekindling of social skills. One staff member commented on the impact of *the cat* on co-workers.

> It is so cute… I noticed that even the staff who knew it wasn't real, talked baby talk to it. People go into a softer mode. I thought it was neat. It is so real because its eyes move and it purrs.

The researchers working with Paro in Japan included the emotional wellbeing of caregivers in their research. Of particular focus was staff burnout which they defined as emotional detachment from the residents. Fewer stress-related incidents occurred during the research (Wada, Shibata, Sito and Tanie 2006, 2004, Wada and Shibata 2008, 2007, 2006).

Question Four

Might interacting with the cat promote or instigate nurturing behaviours for resident participants?

A taxonomy (Table 9) with ten categories was used as a guide to identify and classify resident nurturing behaviours towards *the cat*. Nine of ten classifications were observed among the five women.

Table 9 Taxonomy of Nurturant Behaviours

Category, with Definition	**Example From Residents (body language/event)**
Compassion - A feeling of sympathy	Victoria, "Oh that a piteous" (reaction to the meow)
Protection - To defend or guard	Rhonda, "There, there, now you're safe" (taking the cat on to her lap) : No he's mine you cannot just take him
Empathy - Stepping into the emotional world of the other	Victoria, "Does he have claws?", "Does he miss them?" All participants: various soothing sounds in response to meows or movements
Comforting - Soothe or console	Rhonda, "There, there now ", "You're mine now" Rhonda, Jean, Bridget: (Soft tones – gentle voice)
Confiding - To share a secret or confidence	Jean ,"You see that lady she is one of the good ones she can see to about that" (pointing to the staff person and me) Rhonda, "Oh, I am so sad"
Nursing - Tending to the physical wellbeing	Victoria, "Has it eaten? ", "Has it been bathed", "It's best not to bother them" Rhonda, (tries to feed the cat some of her cookies)
Exchanging - Suggests reciprocal actions - -Trading/sharing information	Rhonda, "Do you love me?", "I want you to love me." Jean ,"You see that lady she is one of the good ones she can see to about that" (pointing to the staff person and me)
Physical Contact - Stroke or caress lovingly	Rhonda – (held the cat on her lap, stroked its back, legs, head, and face) Jean –(reached out with a finger and stroked the cat's nose)
Establishing solidarity - Create unit, agreement,	Rhonda, "Oh, he is so beautiful, I'll take him home", "I want him for my own", "I want to take him home . He can sleep in my bed" Bridget, "Oh, aren't you ever cute"
Promoting development/ growth - Activities that would teach a skill or encourage	Not evident

Source. Video records generated in this study

The exception was *Promoting Growth and Development* defined as *teaching, training or encouraging skill development*. I had anticipated that the residents might attempt to engage *the cat* in play. Available cat toys for the residents to use might have helped stimulate this form of nurturance. Even though *the cat*'*s* comb lay on the desk within easy reach, it failed to attract the attention of any of the residents, except Bridget who picked it up and looked at it, but did not attempt to use it with *the cat*. All of the residents displayed some nurturing behaviours. The difference among the residents was reflected in the variety of nurturing behaviours and whether the behaviours continued or changed in intensity over time. Jean and Rhonda maintained a constant degree of interest in the cat throughout the sessions. Bridget and Victoria had initial interest which dwindled to disinterest. Helen began with a degree of discomfort with the cat which became more comfortable although she never reached the level of spontaneous interest in *the cat*.

C*ompassion, empathy* and *comforting* were common to all of the residents, occurring in response to purring, meowing, ear twitches/cocked head, or as a reaction to *the cat* changing position. Response to meows, purring and ear twitches or the cat`s cocked head were indicators of amusement, including chuckles or smiles. Victoria responded to a meow with "piteous" on one occasion and "isn't that sweet" another time.

All residents acknowledged that something was not 'right' with *the cat*. The mechanical sounds associated with *the cat* changing position were met with a quizzical or concerned expression or with statements such as *"what's that?"* or *"Is that the cat?"* The expression would be followed by words of comfort *"there there,"* and soothing sounds. Victoria summed up the situation succinctly, *"It's not a real cat."* Rhonda, Jean and

Helen noticed the inability of *the cat* to track movement, a feature that possibly made them uncomfortable. The eyes blinked in realistic random increments, but remained fixed on one spot creating a constant feeling that *the cat* was staring at something. If the resident was seated, *the cat* appeared to be focused on something over the shoulder. Jean indicated her awareness by following *the cat*'s gaze and looking puzzled. Rhonda was standing in *the cat*'s line of vision: "He's looking so real that I am scared [referring to the cat staring at her]. [Pause] no I am not scared. He's just a nice person, [pause] no people, nice people."

Rhonda also appeared to recognize that the sounds emanating from the movement were not usual animal noises. She responded to these inconsistencies with a word of caution, (mechanical sounds of *the cat* changing position).

> He's started now. I suppose that is what they all do. [*The cat* moves its head] He is starting to come again and then stops. I think maybe he is doing this because I am [touching him]. [Pause]. You know maybe he likes it eh? Or maybe he doesn't [pauses for a moment]. I think he likes it. I am afraid, if I pick him up he will go ung [makes a biting motion], you never know.

Helen and Bridget neither created nor sustained a relationship with *the cat* but, as already stated, they did initially respond to *the cat*'s meows, purring and changes in posture. Victoria, Jean and Rhonda displayed nurturance in their own style. Victoria expressed her concern for an interest in *the cat* through a series of questions rather than actions.

> Does he have claws?[17] No? How did that happen? Does he miss them?"
> "Does he ever get washed? His fur is a little rough, not as silky as it might be.
>
> Does he have any hates…Is there any part of *the cat* that you cannot touch? It's better to keep animals loving you instead of bothering them.

Each of these statements were about *the cat* but not directed to *the cat*. Within these questions, examples of *compassion, empathy, concern* and *nursing* are evident. Victoria did not pet or touch *the cat* after commenting on the roughness of the fur.

Jean's attention to *the cat* was focused and constant, her vocal tone sometimes questioning, and at other times, conversational, reflecting humor, compassion, empathy, comforting and concern. As stated earlier, Jean's body language implied focused attention, leaning forward in the chair with her hand clasped between her knees, face close to *the cat*'s or leaning back in the chair with her arms folded across her chest, all the while her gaze fixed on *the cat*. However, it was impossible to tell whether or how often her words reflected aspects of exchanging, nursing, establishing solidarity, or promoting development and growth. The inability to decode the messages in Jean's dialogue with *the cat* proved to be a barrier to identifying the full range of her nurturant behaviours. On one occasion, with more verbal clarity than usual, Jean turned *the cat* toward the staff member and me. Jean told *the cat*, "You see that lady; she is one of the good ones she can see to about that…" Possibly Jean was telling *the cat* that we were

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[17] The responses given by the caregiver or myself to Victoria's questions in this and the following quote have been excluded in order to highlight her thoughts.

trustworthy or had authority over some situation that she and *the cat* had been discussing. Two staff members who presided in sessions with Jean viewed her verbal communication from contradictory positions. The first comment reflects this staff member's observation that Jean is not in communication with *the cat*; instead, Jean's conversation was just her usual *"chattering"* behaviour,

> I found it interesting with Jean, that she would talk to it but she would not pet it or put it on her lap. To be honest, I am not sure if she was aware, because she talks to herself a lot because that is her mental status. I am not sure if she could articulate what it was for her.

The second staff member observed Jean as connected to *the cat* while engaged in conversation filled with emotional meaning for Jean.

> So the time I spent with her in the second occasion, you can see that she gets connected instantly. So you know she was an animal lover. What I observed is, I think, if it was an animal that would react more with sound, movement and emotion instead of touching with her that would be very helpful. Although at times she likes to touch it.

Jean's lack of physical contact with *the cat* was viewed by the first caregiver as disinterest and disconnection, while the second caregiver saw the connection and considered the lack of touch or using only one or two fingers to trace the outline of an ear, stroke the nose, or touch the tips of a paw as examples of respecting *the cat's* personal space.

As demonstrated previously, Rhonda formed the strongest emotional and physical connection with *the cat*. Her attachment intensified over the sessions. Though her words and actions were almost exclusively focused on *the cat*, at times she would comment to the caregiver and to me or look towards us as though wanting her comment validated. A large portion of Rhonda's comments focused on *establishing solidarity* with some overlap into *exchanging* and *confiding*. These came as statements directed to the staff person and to me, "I want him for my own," "I want him to sleep in my bed," "I want you to live with me," "I want you to love me," and similar comments phrased as questions to *the cat*, "Do you love me?" "Do you want to stay with me?" In the first encounter Rhonda asked *the cat*, "Are you my baby?" By the fourth session Rhonda had begun to state the exclusivity of their relationship "you're mine now." Rhonda demonstrated that the relationship was private using softly spoken words audible only to *the cat*. Compliments were a constant form of nurturant communication suggesting *comforting, compassion* and *empathy*. Rhonda would say, "Oh he is so beautiful" "Oh, hello – you're looking at me." "Ahh! Meow -are you my pussy?" "Oh, you are a nice pussy cat. Yeah, you're a nice pussy cat." Rhonda remained in almost constant physical contact with *the cat*, holding him on her lap, encircling it in her arms when *the cat* was on the table, constantly petting and stroking it. She demonstrated a much greater degree of warmth in contrast to the reserved contact displayed by Jean. Protection came in two forms, first, to protect *the cat* from something in the environment such as the hand sanitizer "He doesn't smell it does he?" "It won't hurt him will it?" and second, to ward off my attempts to take her cat on the final day, "You're not going to take him from me?"

Victoria, Jean, and Rhonda appeared to exhibit different nurturant models. Victoria represented an interested passive observer. No emotional bond was created although interest in its wellbeing was demonstrated. Jean appeared to model an engaged mentor or a caring listener. She had focus and sustained attention on *the cat* during the sessions but did not invade its personal space. Rhonda presented a strong and protective mother figure. Her relationship with *the cat* appeared to be intimate with constant physical contact. Rhonda's tone of voice, words, and body language depicted a loving relationship.

Evaluating ***The Cat***

Initial interviews with family and caregivers gathered spontaneous reactions to *the cat.* The responses from the exit interviews reflected the experienced perspective of the staff members who facilitated sessions and the observed influence of *the cat* on the part of the other caregivers and family participants. During the final interviews, caregivers and family members commented on expanded applications where *the cat* might be useful in the White Spruce environment. The successful integration of *the cat* into general use at White Spruce is predicated on *the cat* meeting certain criteria. *The cat* must be demonstrated to be effective, practical, appeal to the residents and complement the White Spruce value system. In addition, *the cat* must be a comfortable fit within the personal values and professional ethics of individual caregivers. A number of the staff and several family members gave initial and exit interviews. Comparing responses from both sets of interviews indicated whether the original attitudes prevailed and where they diverged.

The literature review indicated a tendency to use the terms *toy* (Greer et al 2001, Libin and Cohen-Mansfield 2004, Wada and Shibata 2008, 2007) and *play* (Greer et al.

2001, James et al. 2006, Kidd 2006, Wada and Shibata 2008, 2007). Respondents to the initial interviews offered the terms *cat*, *robot*, *mechanical cat*, *toy* and *animal* as suggestions during the initial interview. *Toy* was never used in the field. Initially, the staff respondents described *the cat*'s purpose as, "A form of helping someone to connect with their inner feelings," "If we cannot calm them down *the cat* will help," "…an assistant to better living," and "I would call it a social tool where it engages people in conversation and it might bring up memories of cats which would be a good place to go."

Caregivers and family generally agreed that *the cat* was a more effective tool in creating an emotional connection with some residents than with others. Despite the impact of dementia, people who were predisposed to pets continued to respond to pets, and the value of *the cat* is in its ability to stimulate a similar emotional response as would be expected of a live animal. A lifelong affection for animals is indicated as the single most important predictor of resident response and to positive effect from *the cat* (Kidd et al. 2006). Staff felt that it would be important to target *the cat* to the most appropriate residents.

> What we need to do is to identify those people that it will work best on. We cannot just kind of pull it out and say we are going to use this for everyone but we are certainly going to pull it out for the Jeans of the world. We get different people all the time so we need to.

Another staff member commented on the immediate emotional connection between residents of the first floor and *the cat*.

> The only experience I had of the cat was with you and two residents in the hall. They were two residents who have very severe memory loss but are clearer in the moment than some others and they just reacted and were delighted to see the cat and liked to enjoy it and patted it. So it brought a bit of joy and a bit of delight to see this cat moving.

The reduced agitation in the post-cat period was acknowledged by a staff member who worked with Jean,

> Interestingly enough, I think [Jean] did [remain mellow] for a period after *the cat* sessions. Is it with *the cat* or was it with the increased interaction - I don't know. But I did see that follow through.

Other Uses for the cat

Staff participants offered expanded vision for where *the cat* could fit in at White Spruce. Several participants perceived an additional role for *the cat* as medium for social interaction either with family members or with caregivers. "I think it's a really good opportunity to start a conversation, to settle." One staff member suggested that *the cat* may be of benefit for the residents who frequently call out which is often considered a desire for attention or social interaction. This excerpt linked the successful inclusion of this new technology with demonstrated results.

> I think people will use *the cat* as long as they can get results. Most people will not use the initiative to use *the cat* on their own, but if I say, you know what, I used *the cat* with so and so when she was calling and it

> calmed her right down you can always try it and see if it works. Then they will use it too.

As new technology *the cat* received a passing grade for cultural fit at White Spruce,

> I think it's positive and hopefully the staff can use that as a tool. I think it would fit in really well. I am thinking that we should go with this.

Those who worked directly with residents were asked whether they would continue to incorporate *the cat* when working with the participating residents and the other residents. Not all of the staff saw appropriate alignment between *the cat* and their role at White Spruce, preferring to continue to strive for a meaningful personal interaction.

> I don't think I would use it, because when I go to visit the resident I actually just like to focus on them and I don't mind silence. I can just be with them... From my point of view *the cat* would distract from my focus on the resident; it would be a focus away from the resident.

Ethics

A number of the staff responses directly reflected the wider question of ethics when working with people with dementia. The concerns addressed issues of respect for the person and the potential to treat adults as children.

> If we said, "Here is a stuffed bear because you look cute with it." Or if we said, "Here is a mechanical cat. It's so lovely," and pretended that it is real that is disrespectful.

Another added,

> I think that putting a cat in front of them is like putting them in front of a television is the same thing. It's not interacting back with them… I think in some ways, we are tricking them.

One caregiver reflected on respecting the resident's right to choose to interact with teddy bears, cats, plush animals, or dolls considering it disrespectful for a caregiver to interfere.

> The ethical issue to me is that we never treat the elderly as kids and we can do that in many ways. We can do that with our language and in our behaviour. We can do that in not giving them decisions.

Some caregivers consider that making decisions on behalf of the residents is incorporated within the responsibilities of providing good care.

> I think that it doesn't matter to the residents but I still think at the end of the day, it should be a person that gives companionship. I think that people need to have people to interact with.

Considering the possibility that people in dementia are more attuned to body language and intention than the cognitively well appear to be (Bolte Taylor 2008, Kitwood1993) serves as a cautionary note for the need to be authentic in thought, as well as in words and in actions, when interacting with the residents as is reflected in this comment by one of the caregivers.

> I think as long as we are respecting the resident and respecting staff, of course, we all need to be respected, so whatever [the residents] need to fill their day and if we start belittling what they need, that's disrespectful.

This final anecdote underscored how easy it was to misunderstand the actions of a resident, especially if there is a face value judgment. The resident had just explained to the caregiver that she had had her teddy bear all her life, although it was evident to the caregiver that the bear was relatively new,

> But it didn't matter [that the teddy was not the original] because that is the story she is telling me and the wisdom that came next is something I will never forget. [The resident said], "You know the best thing about my teddy is that I can pour my heart out to him and he never interrupts." Don't we all need something we can pour our heart out to and they don't interrupt to change the topic because it is just too uncomfortable.

Infantilization

Ensuring that adults are not treated as though they were children was a particularly passionate point for family and staff. Some who raised the concern in the initial interview restated their position in the exit interviews. Personal experience with *the cat* provided some relief from the original discomfort felt by this staff member. "I have a real concern for that - they are not children but they still love those kinds of things. But how do you find the balance?" the same commentator in the exit interview stated,

> I think my fear is based on my desire not to be treated as a child. But if a resident likes to be treated that way it's their choice. But seeing how the residents interacted with *the cat* changed my perspective a little bit.

Staff and caregivers are sensitive to the potential for family members to become upset to see their mother or father holding a stuffed animal, a doll or a teddy bear.

> It reminds me of sometimes when residents have had a doll or a teddy and family reacts because that is a child’s thing and I agree I will not treat residents like children.

A second staff member raised a similar concern about the family’s perception that a resident family member was being treated as a child. To illustrate her point she recounted the following event where one resident was given a stuffed bear to hold as a buffer against another resident’s aggressive agitation.

> The staff did try to work with that situation; they actually gave a stuffed animal to the woman who was the target of the agitated behavior. [The aggressive resident] focused on the bear and was not aggressive. She did not try to take the bear and the resident who had the bear would not have cared because she was only holding the bear for protection. The resident's family reacted strongly- “why are you giving [our mother] a stuffed animal?”

Loneliness

The issue of loneliness experienced by many residents of White Spruce was a frequently expressed concern.

> A lot of the residents crave their families but if the families have asked not to be contacted what can we do?

Visiting can be difficult for families when the dynamic is complicated. An impartial companion is a solution for stressful visits. One family member spoke about their decision to hire a companion.

> The spiritual caregiver suggested we have someone come visit her because the new person would be neutral. So he comes to visit her. He is really soft spoken so that is nice. He was there visiting his own grandparent and someone else had hired him to visit her husband… He has been visiting [Victoria] for that last two or three years, sometimes, not as frequently, because of work.

The staff are compassionate, witnessing the difficulty families experience in trying to create meaningful visits,

> I can see [*the cat*] being helpful for some families that sense that they don't know what to say and that would give them a focus.

Some staff felt that the resident benefited from any kind of attention that was focused on them,

> I think that any time we can do one on one there is a benefit. Whether it's with you, me, or *the cat* the one on one makes a big difference.

Several residents at White Spruce benefited from a companion service, employed by family members who live too far away to visit regularly. The companions' visits vary depending on the agreement. The family of one of the residents has arranged for their family member to have companionship throughout the day. The companions work for a service that has been providing care to this resident since she moved from her home into assisted living.

> One of the nice things about these companions is that some of these ladies have been with her for a number of years. So [the resident] does not perceive them as anything but friends. Actually she would be appalled if she knew they were being paid.

There was unanimous agreement amongst the caregivers that this service was an invaluable help. This particular respondent suggests that loneliness is linked to aggression,

> If all the residents had a relationship - someone - to be with them we wouldn't need as many stuffed animals, we wouldn’t need so many mechanical animals, we wouldn’t need as many extra things, but in real life that just isn’t possible.

The opportunity for the staff to allocate more time to the residents is challenged by workload and outside factors. My research, which required staff involvement, coincided with a particularly busy and stressful time at White Spruce. The staff had a higher than average percentage of residents requiring significant support. In addition to regular duties, many staff members were involved in a thorough audit of internal policies and procedures, a mock major emergency event drill and an on-going evaluation of a care product.

The residents and staff were also coping with the recent death of a resident, preparing for the arrival of a new resident, coping with a group of student nurses finishing a geriatric practicum and preparing for a new group of students due to arrive during the second week of the research. Caregivers have little time available for socializing with residents,

> I know when they feel alone or when they feel sad that I like to stay with them for a while and make feel happy.

The relationship between the caregivers and the residents can become mutually rewarding when there is time to spend together. Those who are in constant contact with the residents develop a rapport that deepens their experience of each other,

> You build a kind of bond with them, especially if you sit and talk with them... I would take her outside, especially in the summer time *and* we would sit and chat and she would love it because she is an outdoor kind of person. So she likes to go out.

Some caregivers are willing to put the effort into creating an enjoyable atmosphere for the residents; however, this requires support from a number of co-workers,

> We try to do a lot of things, once in a while I would take them outside for lunch, but most of the people don't want to participate in that so that idea kind of dies after two episodes because we have to take all twenty people outside, give them hats, take all the food outside, the nurses have to come outside to give them their medications. They [the residents] love that stuff.

Researcher Impact

Management at White Spruce are keenly aware of the competing demands on caregivers. *The cat* can help to soften or diminish the number of agitated events which can lower the stress in the environment. “Well for us definitely there is absolute value in *the cat*.” My presence was noted as a positive factor regardless of the added demands the research created for the staff, “It was hugely beneficial, hugely beneficial to have someone around in the afternoons.”

> One to one time is…significant from my point of view having you here. The time that you have been here just reinforced my belief that [we] need to try to find someone to be here in the afternoons. It either needs to be one of the HCA dedicated to that role of just being, or a volunteer to come in and just be.

Researcher presence has to be considered as a factor in the results of this study. For the duration of my time in the field, the participating residents, in particular, received a significant increase in personal attention unrelated to ADL, medication or meals. The format for the information gathering, especially in the first week, resulted in significant social interaction with the women, which included forays away from the second floor to attend church services or concerts. I often spent time interacting with the wider community in order to observe resident participants as part of the social fabric on the second floor. Rapport develops easily when people are busy folding face cloths and singing along to the oldies on the DVD player. Further, the nature of ethnographic research requires rapport with participants to the extent necessary to experience aspects of their world.

CMAI Forms and Preferred Ways of Functioning

The CMAI forms were an important method for data collection tempered with recognition of the potential issues of bias as discussed in Chapter Three. Many of the forms of agitation on the CMAI list were not in evidence, possibly due to only working with a sample size of five women. The nurse responsible for completing the forms identified conditions that need to be factored in when assigning the classification of agitation to behaviour,

> Things like Jean talking to herself all the time. She can get herself quite agitated just by talking. [The classifications are listed as] ‘constant unwarranted requests for attention’ and ‘constant repetitive statements and questions’. Well [Jean’s comments] are not really repetitive it is just constant sort of undirected chatter.

And

> [The form lists] ‘problematic vocalization’ so that would be the screaming, yelling, swearing, things like that. Is Jean’s [constant chatter] problematic? It is when she is in… the other resident's face and she is agitated. But there is chatting and then there is chatting when she is getting herself angry. There is a difference there you cannot reflect it on [the form].

Another shortcoming is related to the degree that the resident’s long-standing preferred ways of functioning or lifetime personality traits are known to the caregivers.

> Complaining if you have always been a complainer, is it any different than it has been? Some people will …complain more if there is something wrong, right? - compared to just general complaining.

The incident with Helen and the twisted undergarment is another example where the behaviour, *pacing*, was not the action that communicated a problem. With Helen, the clues are in the look in her eyes and in the speed at which she is walking. The situation with Helen's pacing was discussed among the caregivers and provided a different contextual window to focus on the important issue of getting Helen to stop long enough to eat.

> [The staff] talked about wandering specifically and I used Helen as an example. … From Alesa's project … she found out that Helen walked. She walked to think. She walked because she liked to be out and about. That's her coping strategy… But then again we still need to try to redirect so that she can sit down and eat, so that we can get food into her. So how do we do that knowing what her behaviours are like?

The CMAI was not designed to identify and manage passive forms of agitated behaviour or depression which some of the caregivers consider the root cause of Bridget's lack of interaction. An alternative interpretation for Bridget's behaviour was presented by another caregiver.

> People like Bridget [who are] quite severely demented don't do a lot of [the items on the CMAI list] [but are] withdrawn and of course …it's not

> purposeful. It is part of her [dementia] that is not reflected particularly well on this form.

It is possible that Bridget's behaviour is part of progressing dementia and not needs-driven as this caregiver suggested. However, it is also possible that failure to identify or address the needs exacerbates the situation, causing Bridget to retreat further. The third possibility is that the withdrawal is part of Bridget's personality and natural preferences. Living in community, Bridget`s social interactions were a combination of innate preferences, personal history and her stage of life. Her family had described Bridget as a very private person who did not want to be at the center of attention or to become the focal point for neighbourhood gossip. Complementing Bridget's natural introversion might have been a shift in priorities as a natural progression of aging. Tornstram's (1997, 2005), Theory of Gerotranscendence, may provide insight into Bridget's desire for solitude or choice not to engage with others. Gerotranscendence posits that an aging individual may become less concerned with material possessions and strive to find the meaning in their life history. Several features of gerotranscendence are evident in the comments made by family and staff. Bridget appears to be selective in the activities in which she participates. Her selection may be demonstrating a loss of interest in unnecessary social interaction. Her greater need for meditation or positive solitude might be created by sitting with her eyes closed when not in the privacy of her room. Finally, her family commented that she had begun to talk about her past after moving into assisted living.

> She didn't speak of [her childhood] before she left the house, I guess it was around the time she moved into the suite she was doing a lot of

> reflecting on the people in her life that had died. So she was processing some death issues there at some point.

There are sufficient parallels between Bridget's actions and aspects of gerotranscendence to consider that Bridget might not be displaying a passive form of agitation but rather a need for reflection. If this is true for Bridget, then what are the implications for her long term care?

There are many observations leading to plausible responses to the four research questions and to a conclusion regarding *the cat* as a tool for mitigating incidents of agitation among people with advanced dementia. The relevance of nurturance has been presented and explored as a compelling entry point for research, as a fundamental component to social personhood, and as a cluster of behaviours identified and stimulated as a result of five resident participants interacting with *the cat*. Important issues of infantilization and ethical concerns have been discussed. The value of understanding the personality of the pre-dementia person in order to understand current behaviour holds promise for enhancing the delivery of person-centered care. The review of the research process and outcomes presented in Chapter Six will summarize the salient points and the value of this research in the larger context of understanding dementia, agitation and nurturance.

Chapter Six

Summary and Conclusions

The purpose for this research was to consider whether a robotic cat would appeal to people in advanced stages of dementia, be effective in alleviating incidents of agitation, and whether it might satisfy an unmet need by stimulating nurturant feelings. Embedded within this relatively straightforward set of interrogations was the desire to contribute to the understanding of people living with dementia, while adding to the accumulation of academic knowledge on the topics of dementia, agitation and nurturance. Following a brief summary of the research design and the data analysis process, the conclusions for each of the research questions will be presented. Recommendations for use of *the cat* will precede a discussion on possible directions for further research.

Summary

Three theoretical perspectives, personhood, agitation and nurturance anchored this research. Personhood, the foundation for person-centered care, emphasizes the unique individual at the center of the experience of dementia (Kitwood 1997; Kitwood and Bredin 1992). Focusing on the individual life course of each individual distinguishes person-centered care from the clinical management of symptoms. Agitation theory views the behavioural symptoms of dementia as alternative forms for communicating unmet emotional, psychological, or physical needs. Nurturance theory states that there is a natural imperative to form relationships based on affectionate concern (Meisen 1997:3) and that “there is a custodial feel to nurture that is intimately connected with personhood” (Van Esterik 1997:341).

The research was structured to create an ethnographic record of the experiences of Helen, Bridget, Jean, Rhonda, and Victoria, five elderly residents of the White Spruce Senior Care Home interacting with a robotic cat. These women were selected for the research because they were identified with symptoms consistent with the latter stages of dementia. Each woman exhibited various forms of agitated behaviours with sufficient regularity that changes in frequency of these events could be and were noticeable.

Data was collected during four weeks in the field using participant observation, semi-structured interviews with family members and staff, and a video-recorded series of sessions of each resident interacting with *the cat*. Three Cohen-Mansfield Agitation Inventories were completed for each resident. The fieldwork portion was bracketed by an additional week at the start and at the conclusion to create three distinct two- week reporting periods, *Pre-Cat Phase, Cat Phase* and *Post-Cat Phase*. An RN specifically trained to administer the CMAI completed individual forms for each woman. Selected family members, friends, staff and caregivers participated in initial and exit interviews. A smaller group of staff and caregivers joined with me in guiding a series of interactions between *the cat* and each of the women over a two week period. The *cat sessions* were video-recorded. I interacted with and observed the residents during the normal course of the day, at meal times, in solitary times and while engaged in social interactions at various locations on the first and second floors.

To prepare the raw data for analysis, the five individual CMAI forms were merged for each two-week period and the interviews and video sessions were transcribed. The ability to communicate verbally varied considerably among the women. The literature review indicates that body language remains a reliable form of communication well into the last stages of dementia. The verbatim record of the interactions with *the cat* included body language as well as utterances. The coded transcripts were reviewed to identify emerging themes and topic areas and to sort the results into data structures organized to respond to each of the research questions. Nurturing behaviours were highlighted during the coding process and stored in a separate data structure.

Although this ethnography was not a quantitative study generating statistical data, the three sets of forms provided an opportunity to compare the frequency of agitations from the baseline data, to *the cat* sessions, to the period after *the cat* was removed. The comparison was confined to the nine behaviours common to either four or five participants. The individual frequency scores for each report period were combined to create a total for the behaviour. Comparing the totals from the first to the second period indicated whether the time with *the cat* may have influenced the number of agitated episodes. Comparing the second and third form totals provided evidence of whether the effect of *the cat* sessions was maintained.

Finding appropriate methods for identification of nurturing characteristics created a challenge. There is a paucity of existing assessment tools to identify and quantify nurturant activities. Greenburg-Edelstein (1986) developed a template ranking nurturance based on the level of reciprocal exchange among participants in groups. My research focused on individual encounters with *the cat*, not on group activities. I used the concept of reciprocal exchange to structure a ranking system of Nurturant Engagement to facilitate the calibration of interest and disinterest and to indicate whether the engagement level changed over the two week period with *the cat*. Leininger (Leininger 1981, 1978; Geissler 1990) created a taxonomy of care constructs based on activities associated with providing compassionate nursing care. Following this example, I constructed a Nurturance Taxonomy based on the common forms of nurturance and care incorporated in the definitions provided by Leininger (Geissler 1990) and Greenburg-Edelstein (1986). Each term was defined and an example of a behaviour that fit into the category was provided. The application of the taxonomy supported the identification of the range of nurturant behaviours demonstrated by each woman as she interacted with *the cat*.

Before leaving the topic of appropriate research tools, a comment on the CMAI form is warranted. The CMAI is an effective and efficient tool for monitoring agitated behaviours. A problem with the form may be in the fundamental assumption that the existence of behaviour is sufficient to warrant definition as agitation. Several staff members pointed out that sometimes the behaviour is not problematic. Jean`s constant chatter is not always a sign of agitation, sometimes it is just chatter. Helen`s walking was labeled on the CMAI as either *compulsive aimless wandering* or as *attempts to get into restricted areas*. Her family revealed that she was not someone who liked to sit; Helen preferred to be moving around. The research revealed that it was not the walking that indicated Helen was in distress, but it was the speed at which she walked that was the true indicator of agitation.

The information provided by family members and friends profiled the personality of the resident before dementia. Participant observation and caregiver interviews described the resident within the environment at White Spruce and with dementia. Cohen-Mansfield agitation inventories indicated changes to agitated behaviours. The video-record of the sessions with *the cat* provided clues to understanding the relationship between resident interactions with *the cat* and nurturant behaviour. Collectively, these sources addressed the four research questions and provided an evaluation of *the cat*.

1). In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with the cat?

The first research question investigated whether it was possible for women in the latter stages of dementia to exercise choice and to make that choice understood. A list of twenty nine comments and actions were readily identifiable as indications of either disinterest or interest. Initial interest expressed by Bridget and Victoria waned, Jean maintained a consistent level of interest, while Rhonda's relationship to the cat intensified. Helen's initial minimal interest in the cat did not change. Within this group of five women communicating interest and disinterest was possible. A deeper consideration of the question reveals three additional points. First, the women generally responded positively to invitations from their families, staff, and caregivers. Therefore, any request was likely to be met with a high degree of compliance. Unanimous attendance did not necessarily predict interest in *the cat*. Bridget, through her statements and body language, made it clear that she was not interested in participating in the sessions with *the cat* once the session started, despite her compliance to attend a session.

Secondly, there is a direct relationship between pet loving-people and sustained interest in *the cat*. The pre-existing ability to form meaningful connections with animals was not affected by cognitive decline. Greer (2001) concluded at the end of her study, using live cats and stuffed cats, that at more advanced dementia the resident did not discern between live animals and stuffed cats. My research did not support this finding. It was evident in body language and verbal communication that the women were aware that something was not consistent with normal cat behaviours, although only Victoria clearly articulated that *the cat* was not real. Three of the women responded to the fixed stare and the sound of the motorized movements indicating that they could identify abnormalities. The most important factor that contributed to meaningful and sustained engagement with the robotic cat was a predisposition towards animals for companionship.

Lastly, displays of interest and disinterest, at these levels of dementia, were consistent with those one might expect from cognitively able respondents. This included an example of socially motivated deception. Helen's words indicated an attraction or appreciation of *the cat,* while her body language and behaviour reflected her discomfort with *the cat*. This discomfort was consistent with the possibility that she had a life-long fear of animals.

2). *Will residents who have incidents of agitation, or who are socially withdrawn, experience a decrease in frequency or intensity of agitation or increased interaction in response to the cat?*

3). *If there are observable changes in behaviour (agitation, interaction) does this suggest a change in the emotional state - cheering, calming, or upsetting?*

These two questions focus on reductions in agitation and look for evidence that change was connected to improvements in mood. The consensus among the participating family members and staff supported the relationship between reduced agitation and improvement in mood, despite Rhonda's emotionally charged reluctance to part with *the cat* in the final session.

If the changes in agitated events were solely reliant on *the cat*, it should have followed that only those who actively engaged with *the cat* would have had positive results. However, all four women who remained engaged in *the cat* sessions exhibited similar reductions in agitation, indicating that the common element was the increase in social activity. *The cat* provided a satisfying outlet for attention from Rhonda and Jean. Victoria and Helen enjoyed the connection with the people in the room. A disappointment in my research was the inability to successfully engage Bridget in *the cat* sessions.

The interactions with Victoria and Helen evolved over the research period. Victoria took on a leadership role in the conversations, directing the conversations and requesting appointments with the appropriate people to discuss her finances. Helen became a spontaneous joiner, intentionally entering into the sessions underway with other participants. Helen's verbal communication skills showed improvement over the two weeks. The re-emergence or strengthening of the social person was noted in the research conducted by Kitwood and Bredin (1992) which concluded that, with appropriate interventions, dementia is neither linear nor unidirectional. This area should be investigated more fully to determine if this is sustainable as Kitwood and Bredin (1992) suggest and to measure the degree of improvement. One advantage for people similar to Rhonda and Jean is that the cat is always available, unlike staff and family who have competing demands for their time. The affordability of the cat is another positive factor. A PCH could acquire a number of cats or residents could purchase their own. Unfortunately, neither *the cat* nor the increase in social attention appeared to appeal to Bridget.

4). *Might interacting with the cat promote or instigate nurturing behaviours for resident participants?*

The final question explored nurturance as an unrequited need and the desire to nurture as a possible instigator of agitated behaviour. *The cat* provided the residents with an opportunity for demonstrative affection to a degree that does not normally occur in institutional social relationships. All participants nurtured to varying degrees. The pet-loving people displayed the fullest range of nurturing behaviours, including abundant affectionate touch. The cat was the appropriate outlet for this nurturant behaviour which might not be welcomed by other residents or considered appropriate by family members or caregivers. The potential for residents to subsume personal needs in order to commit to nurturing was evident in the possessive attachment Rhonda formed with *the cat*. This strong and protective attachment suggested it was unlikely that Rhonda would have been comfortable sharing *the cat* with other residents or that she would willingly relinquish it at the end of a session. In this regard Jean represented the ideal candidate to work with *the cat*. She connected and disengaged easily, enjoyed self-directed exchanges with *the cat*, and the evidence suggested she benefited from the sessions.

Conclusions

Five women interacting with *the cat* constitute too small a sample to allow the findings from this study to be generalized over the greater population of people with dementia. The experiences of this small group have added to the general understanding of personhood, dementia, nurturance and agitation. The findings indicate experience with *the cat* did have a direct and measurable impact in lowering the number of agitated incidents and reflecting an elevation in mood for four of the five participants. Bridget, who did not complete the series of sessions with *the cat*, remained at a consistent level of agitation. The aggregate and individual totals indicated a decline in incidents of agitation for the other women. For two of the residents, Jean and Rhonda, *the cat* was intrinsically important to their experience, while Victoria and Helen enjoyed the social aspect of the sessions. On a cautionary note, the propensity for some residents to become overly possessive of *the cat* creates a potentially volatile situation among residents who share an interest in the cat, or a resident can become overburdened by caring for *the cat* to the detriment of her own needs.

The value of *the cat*, as a device to use with agitated residents, is related in part to the willingness of caregivers to give *the cat* to the people under their care. Some staff voiced concern that using *the cat to* provide a nurturant experience was unethical or disrespectful, while other staff members felt that the apparent benefit to the resident should be the deciding factor. These two opinions are reflected in the quote by Turkle (2006) from Chapter Two, “If our experience with relational artifacts is based on a fundamentally deceitful interchange…can it be good for us? Or might it be good for us in the “feel good” sense, but bad for us in our lives as moral beings?” (Turkle 2006:3). These are complex questions not easily answered. These issues do create an opportunity for management and staff to engage in ongoing dialogue on the practical, ethical, professional, and emotional implications of caring for people with dementia within the context of a commitment to person-centered care. In the context of this research project, the evidence indicated that the five women were aware that elements of *the cat*‘s behaviour were not typical of a live animal; the element of deceit, may not be as pervasive as the quote suggests.

Personhood and Person-Centered Care

The apparent re-emergence of the social person and the improvements to mood, lessening of agitation and increase in verbal communication are important positive results. The background interviews with family members successfully linked the residents' natural ways of functioning and their observed behaviours in advanced dementia. Within the limits of this research, evidence indicated that advancing dementia does not erase the basic personality, preferred ways of functioning or coping mechanisms. The core of the individuals in this research appeared to remain intact. Family members should be relied upon to provide life history information, assisting caregivers to better understand the person in their care and how each resident might respond to different interventions. Rhonda's affectionate and possessive attachment to animals in the past suggested that an attachment to *the cat* might be similar. Effort should be directed to maintaining the profiles and to integrating the information into the caregiver/resident relationship. Understanding the resident holistically is a key component for respecting resident autonomy and acknowledging the person in care.

Nurturance

Nurturance was evident in the interactions between the residents and *the cat* as well as in the social relationships that developed among the participants. Caring attention devoted to *the cat* appeared to encompass both the emotionally affectionate bond between intimates, as well as an interested attention comparable to that of a teacher or mentor.

Regardless of the number of residents on each floor, several of the staff participants reflected on the atmosphere of loneliness that permeates this and most other long term care facilities. The research activity provided an opportunity for five of the residents to experience additional time with caregivers; caregivers also felt that they did not have the time to spend with the residents in order to deliver the level of compassionate care they would like to provide. Long-term care inevitably shrinks the residents' world to the physical space of the care home. Frequently, wanderers are excluded from many excursions because they require individual attention; ironically, wanderers may be the group that might benefit most from these opportunities to expand their vista.

My agenda, unattached to the function of the home, focused on engaging with individual residents or small groups of residents in friendly banter. Where possible, I escorted individual wanderers to events on the first floor. While this level of interaction is familiar but not intimate, it is a positive example of nurturance at the midpoint on the Table of Nurturant Engagement and on Greenberg-Edelstein's levels of reciprocity in group interactions. Nurturance is a topic that deserves more attention and study.

Dementia

There appears to be a general tendency in the literature reviewed and in long-term care practice to assume that dementia supplants all other psychological aspects of aging. Three theories of psychological aging, Gerontransendence, Activity, and Continuity, were touched upon in the literature review and were somewhat incorporated into the discussion of the findings in Chapter Five. If these processes are consciously illuminated and fostered as part of person-centered care, they may provide greater understanding of the individual in dementia and assist to unlock successful avenues for identifying and meeting needs associated with psychological care. This area warrants further study and consideration.

Care home philosophy appears to embrace Activity Theory, although this is not articulated. There is pressure to provide a stimulating environment through the delivery of activities that stress social engagement and physical wellbeing in an effort to stimulate cognitive processes. Activity directors and volunteers create an impressive schedule of well-considered activities. For reasons of expediency, the activities I observed were designed to accommodate many residents engaged in a single activity. There are few opportunities for small group or dyadic interactions or perhaps the need for solitude. Bridget and others who display the *dozing-off* tendency, when obligated by good intentions to be present in high traffic areas, may be attempting to communicate a need for meditative or spiritual activities rather than depression.

Impact of Research

One of the rewards of conducting research in a facility where management, staff and caregivers are focused on providing person-centered care is the posture of openness to research results and integration of the findings. Three changes were under consideration by the end of my field research. First, two additional cats were to be purchased so that each floor would have one for their residents. Second, interviewing the family in order to develop a more complete understanding of the resident's personality and coping mechanisms was under active consideration as part of the intake process. Last, the value of sustained and focused social interaction was identified as an immediate need to be addressed by either assigning a volunteer to the role of visitor or by scheduling caregivers to this role.

As the aging baby boom generation swells the ranks of the elderly, the number of people living with dementia will dramatically increase. Providing informal and formal care for this group will further tax health care budgets, available support services, and place emotional and financial strain on informal and formal care providers. As cost pressures balloon, priority attention to individual needs may be jeopardized or seriously compromised. Instruments such as *the cat*, which are effective in moderating agitation, and which are simple and technologically appropriate, will become an even greater imperative for use by formal and informal caregivers.

Greater attention should be paid to understanding the evolving communication processes that emerge to compensate for loss of verbal skills. Body language as a communication tool for those in dementia and by those who provide care warrants further study. The interconnections of agitation, unmet needs, and natural ways of functioning for residents with advanced dementia has yet to be adequately explored. Identifying successful avenues to encourage the re-emergence of the social person in advanced dementia beckons as a compelling avenue of inquiry. There is so much more to learn about caring for people with dementia and about the social person living with dementia. Research in this area is likely to yield substantial cost savings as well as significant quality of life benefits for those with dementia, as well as for caregivers.

Appendix A MMSE and CPS Rating of the Observable Symptoms of Dementia

	Early Stage CPS: 0-2 MSSE: 19-30	Mid Stage CPS: 3-4 MSSE: 7-18	Late Stage CPS: 5-6 MSSE: below 7	End Stage CPS: 6 MSSE: below 7
Cognitive	-Difficulty with word finding and fluency - Memory loss - Disoriented in new environment - Mild problems with routine tasks; planning, organizing, and making decisions	- Word substitution; aphasia; speech errors - Usually understands others; - Difficulty with abstract concepts - Disoriented in familiar places - Unable to recognize familiar objects or persons - Poor memory and recall - Poor insight/decision making; needs supervision and cuing	- Echolalia, semantic jargon - Most memories lost - Loss of insight, comprehension; rarely makes decisions - Responds to short, simple communication	- loss of speech, grunting, mute - poor responsiveness to surroundings; rarely understands others -Loss of ability to recognize ie. self, food, family
Emotional	- Early changes in personality and judgment - Withdrawal from activities of interest - Apathy, anxiety, or irritability, depression	-Anxiety, mood swings, suspicious, jealousy, irritability -Flat effect	Social indifference, reduced social interaction - Fearful, apathy	- Withdrawal, apathy

Appendix A Con`t

	Early Stage CPS: 0-2 MSSE: 19-30	Mid Stage CPS: 3-4 MSSE: 7-18	Late Stage CPS: 5-6 MSSE: below 7	End Stage CPS: 6 MSSE: below 7
Behavioural	-Inflexible to changes in routine - Repetitive verbalizations	- Pacing, wandering, agitation - Hallucinations and delusions (paranoia, suspicious) - Sexual behaviours - Sleep disturbances	- Loss of social skills; impulsive; sexual disinhibition - Hallucinations and delusions - Agitation; behaviours may appear aggressive but are communicating a need	- Hallucinations and delusions - Agitation; resistance during care
Physical	NA	- Loss of interest in hygiene - Difficulty with motor skills and daily activities - Slower gait	- Loss of appetite/ difficulty swallowing - Incontinence - Progress to total dependency for ADL's - Progress to inability to walk	Loss of facial expression - Primitive reflexes ie. grasping - Full loss of voluntary movements - Contractures; skin breakdown (ulcers) - Recurrent infections and poor healing (UTI, pneumonia, septic) - Incontinent x 2 - Unable to feed self; inability to swallow, feel hunger

CLINICAL STAGES OF ALZHEIMER DISEASEttp://geropsychiatriceducation.vch.ca/docs/edu-downloads/dementia/clinical_stages_CPS-MMSE_comparison.pdf

Appendix B Levels of Care

All Manitobans applying for PCH admission are assessed on the amount of assistance they need to complete ADLs (#1-4) and two types of professional services (#5-6).

1. bathing and dressing
2. meals including feeding,
3. ambulation/mobility/transfers
4. elimination

People are also assessed based on their need for

5. professional interventions: oxygen therapy, skin care, the recording of vital signs
6. behavioural management and support.

Scoring Key:

Independent – no supervision or assistance

Minimum dependence – requires some supervision/encouragement and/or intermittent assistance

Partial dependence – requires ongoing supervision and/or assistance

Maximum dependence – completely dependent and/or requires ongoing supervision

Chronic care indicator – requires ongoing attention by medical staff and/or multiple people to provide assistance

Based the score, the levels of care are defined using the following rules:

Level of Care I: Score of ‘independent’ or ‘minimal dependence’ in all six items.
Level of Care II: All combinations that fall below level II and exceed Level I.
Level of Care III: a) Score of ‘maximum dependence’ in two or three areas of care plus a score of ‘independent’ or ‘minimal dependence’ in other items
or b) Score of ‘maximum dependence’ in the behavioral management item plus a score of ‘partial dependence’ in two other items.
Level of Care IV: Score of ‘maximum dependence’ in four or more items.

Adapted and abbreviated from “Population Aging and the Continuum of Older Adult Care in Manitoba.Winnipeg, MB: Manitoba Centre for Health Policy, February 2011” (Doupe et.al. 2011: 34)

Appendix C Modified Cohen-Mansfield Agitation Inventory Form

As manifest during the last fortnight	**CODE**						
1. Pace, aimless wandering	1	2	3	4	5	6	7
2. Inappropriate dress or disrobing	1	2	3	4	5	6	7
3. Spitting (include at meals)	1	2	3	4	5	6	7
4. Cursing or verbal aggression	1	2	3	4	5	6	7
5. Constant unwarranted request for attention	1	2	3	4	5	6	7
6. Repetitive sentence or questions	1	2	3	4	5	6	7
7. Hitting (including self)	1	2	3	4	5	6	7
8. Kicking	1	2	3	4	5	6	7
9. Grabbing onto people	1	2	3	4	5	6	7
10. Pushing	1	2	3	4	5	6	7
11. Throwing things	1	2	3	4	5	6	7
12. Strange noises (weird laughter or crying)	1	2	3	4	5	6	7
13. Screaming	1	2	3	4	5	6	7
14. Biting	1	2	3	4	5	6	7
15. Scratching	1	2	3	4	5	6	7
16. Trying to get to a different place (out of room, building)	1	2	3	4	5	6	7
17. Intentional falling	1	2	3	4	5	6	7
18. Complaining	1	2	3	4	5	6	7
19. Negativism	1	2	3	4	5	6	7
20. Eating/drinking inappropriate substances	1	2	3	4	5	6	7
21. Increased appetite *	1	2	3	4	5	6	7
22. Loss of appetite *	1	2	3	4	5	6	7
23. Hurt self or others (cigarette, hot water etc)	1	2	3	4	5	6	7
24. Handling things inappropriately	1	2	3	4	5	6	7
25. Hiding things	1	2	3	4	5	6	7
26. Hoarding things	1	2	3	4	5	6	7
27. Tearing things or destroying property	1	2	3	4	5	6	7
28. Performing repetitious mannerisms	1	2	3	4	5	6	7
29. Making verbal sexual advances	1	2	3	4	5	6	7
30. Making physical sexual advances	1	2	3	4	5	6	7
31. General restlessness	1	2	3	4	5	6	7
32. Sobbing *	1	2	3	4	5	6	7
33. Physical isolation or purposeful self exclusion *	1	2	3	4	5	6	7
34. Sociability initiating, or joining *	1	2	3	4	5	6	7
35. Visible sadness *	1	2	3	4	5	6	7
36. Visible happiness *	1	2	3	4	5	6	7

Codes: **1**= never **2**= less than once a week **3**=1-2 per week **4**=several times per week **5**=once or twice per day **6**= several times per day **7**=several times per hour

Completed by Code #: ___________ for resident Code #: __________

* Items added to the form Original Cohen-Mansfield Agitation Inventory (CMAI) Long Form

http://wanderingnetwork.co.uk/Cohen%20Mansfield%20Agitation%20Inventory.pdf

Appendix D Paro, NeCoRo, My Real Baby, *The Cat*

Paro
http://www.cscoutjapan.com/en/wp-content/uploads/2008/07/the cat-robotic-healing-seal-2.jpg

My Real Baby
www.generation5.org/content/2001/mrb.asp?Print=1

NeCoRo:
www.necoro.com/newsrelease/index.html

The Cat Yume Neko Dream Cat Smile
www.japantrendshop.com/yume-neko-dream-cat-smile-robotic-cat-by-sega-toys-p-122.html

Appendix E P.I.E.C.E.S. Question Template

The 3-question template:

Q 1. What has changed? Determine if the problem/behaviour represents a change.

- Is the problem/behaviour new? If so, in what way and when did the change emerge?
- Did the problem/behaviour already exist? If so, is it worse or different, and when did the change emerge?
- Is the problem/behaviour long-standing and unchanged? If so, what else could have changed, for example: caregiver stress?

Q2. What are the RISKS and possible causes?

1. Identify the RISKS and avoid assumptions. Is there a risk and for whom (Person, other individuals, staff, family, visitors?) What is the degree of risk? How imminent is the risk? Is the risk increasing?

R Roaming (wandering)
I Imminent physical; risk of harm - frailty (e.g. delirium), falls, fire, firearms
S Suicide Ideation
K Kinship Relationships (risk of harm by the older person or to the older person by others that includes avoidance of the person)
S Self-neglect, safe driving, and substance abuse

2. Consider atypical presentation and use P.I.E.C.E.S. to identify possible causes:

Physical - 5 D's: Delirium, Disease, Drugs, Discomfort, Disability
Intellectual - 7 A's: Amnesia, Aphasia, Apathy, Agnosia, Apraxia, Anosognosia, Altered Perception
Emotional - 4 D's: Disorder Adjustment, Disorders of Mood, Delusional, Disorders of Personality
Capabilities - ADL's, IADL's
Environment - Consider: over/under stimulation, relocation, change in routine, noise, lighting, colours
Social - Consider: social network, life story, cultural heritage

3. Remember, all behaviour has meaning

Q3. What is the action ?

1. Interventions, Interactions, or Information to guide action.

Intervention: What therapeutic approach, both nonpharmacological and pharmacological, may best address the person's needs? What other investigations need to be undertaken?
Interaction: Using what has changed and understanding of causes for interaction at
Information: Think P.I.E.C.E.S.! What information should be shared with other team members, family, if the person is moved or requires transfer? How is the information shared? What are RISK Factors?

2. Promote dialogue and shared TEAM solution-findings

Adapted and abbreviated from
http://www.piecescanada.com/pdf/PIECES_Laminate_Nov_09.pdf

Appendix F Information and Consent Forms

F1 Power of Attorney and Family Proxy

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM
Power of Attorney or Family Proxy

An Ethnography of a Interactive Robotic Cat in a Manitoba Personal Care Home
An Ethnography is a scientific study of human cultures and social interactions.
Researcher: Alesa Sutherland

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Caregivers, residents, family members and friends are invited to participate in a study involving an interactive robotic cat and residents of MCH.

The purpose of the study is to consider whether an interactive robotic cat can add to the quality of life for people with moderate and advanced stages of dementia. Participating residents are selected because of the incidents of agitation that are often associated with dementia. An interactive robotic cat is designed to stimulate positive emotional experiences. I will be observing and recording participating residents engaging with the interactive robotic cat to answer the following four questions:
(1) In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with a robotic cat?
(2) Will residents who have incidents of agitation experience a decrease in frequency or intensity of agitation in response to the interactive robotic cat?
(3) If there are observable changes in behaviour (agitation, interaction) does this suggest a change in the emotional state - cheering, calming, upsetting?
(4) Might interacting with an interactive robotic cat promote or instigate nurturing behaviours for the resident participants?

Research methods include semi-structured interviews, observation, and recorded naturalistic observations in situations simulating a potential real-life use of an interactive robotic pet within a PCH.

With the assistance of a caregiver, **the residents' participation** will consist of eight twenty minute private interactive sessions over a four week period. The sessions will be scheduled on weekdays between 1:00 and 4:00 in the afternoon. Each of the sessions will be video recorded for analysis. The first and last sessions will not include the robotic cat and will be used for baseline information. A staff member will be in attendance for the sessions with the robotic pet, the first and last session may be conducted solely by the

researcher. In addition, in the first week, I will be observing and taking notes of the participating residents at various times, in solitary and social moments, and while participating in various activities.

The current routine of activities and visits will be interrupted as little as possible. Families are encouraged to maintain normal routines of visits and activities with the residents.

In order to gather information to conduct this research your consent on behalf of ________________is required for the following activities:

For the resident to participate in the study.
To permit the researcher to speak with staff members about the resident's: MMSE score, chronic conditions, agitation, and the amount of assistance he/she requiresto perform daily activities.
To permit a caregiver to complete three agitation inventory sheets which record the number and types of agitation that may be experienced, over a two week period. The three inventories will cover the two week period before introduction to the interactive robotic cat, the two weeks the resident is working with the robotic cat, and the two following weeks.
To permit the researcher to video tape the sessions.
To permit the researcher to show and discuss segments of the video record with my thesis advisor.

Risk: The participating resident, family members, visitors, and staff will not be placed at risk, nor are any negative impacts expected. In the event that a resident indicates he/she does not wish to participate or continue to participate the session will stop. The sessions will be conducted with a caregiver in attendance who is familiar with the resident participant and how to cope with incidents of agitation.

Confidentiality: Although complete confidentiality cannot be guaranteed, due to the limited number of care homes in Winnipeg and the limited number of residents, confidentiality will be protected as much as possible. Only Alesa Sutherland, the researcher, will see all of the information gathered and recorded for this study. The identity of the participants and the location of the study will be protected through the use of pseudonyms and code numbers. Wherever possible, data results will be presented in the aggregate, and specific information will be cited or quoted only if it can be effectively anonymous. The videotaped sessions will be conducted in private locations at the PCH and will only be used for data analysis purposes. The video recordings will not be viewed by anyone other than the researcher; although segments of the videos may be shown to the thesis advisor.

Interview and consent forms will be entered into a password protected computer and the original copies will be stored in a locked file cabinet along with the master file of identifying information. All digital voice records and video data will be downloaded into a password protected computer. Backup copies will be stored in a locked filing cabinet.

The computer and file cabinet will be stored in a secure location. Original consent forms, interviews, and all paper copies will be shredded and electronic or computer records and backups will be destroyed, deleted, or erased at the completion of the thesis project (approximately 3-6 months following the research).

Feedback on the study will be available to you. Several copies of the final report and Summary of Findings will be presented to White Spruce. A copy of the summary can be mailed to you if you wish to add your mailing address at the bottom of the signed form.

Acknowledgement for your participation consists only of my sincerest appreciation for your assistance.

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

Researcher: Alesa Sutherland [redacted]
Advisor: Dr. Ellen Judd 474-7674
Department of Anthropology, Faculty of Arts
435 Fletcher Argue Building
University of Manitoba, Winnipeg, MB R3T 5V5

This research has been approved by the Joint Faculty Research Ethics Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat at 474-7122, or e-mail margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records and reference.

____
POA or Proxy Signature Date

POA or Proxy for: ____
Name of Resident

____
Researcher’s Signature Date

Appendix F Information and Consent Forms

F2 Family Member and Friend

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM
Family Member and Friend

An Ethnography of a Interactive Robotic Cat in a Manitoba Personal Care Home
An Ethnography is a scientific study of human cultures and social interactions.
Researcher: Alesa Sutherland

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

Caregivers, residents, family members and friends are invited to participate in a study involving an interactive robotic cat and residents of MCH.

The **purpose of the study** is to consider whether an interactive robotic cat can add to the quality of life for people with moderate and advanced stages of dementia. Participating residents are selected because of the incidents of agitation that are often associated with dementia. An interactive robotic cat is designed to stimulate positive emotional experiences. I will be observing and recording participating residents engaging with the interactive robotic cat to answer the following four questions:
(1) In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with a robotic cat?
(2) Will residents who have incidents of agitation experience a decrease in frequency or intensity of agitation in response to the interactive robotic cat?
(3) If there are observable changes in behaviour (agitation, interaction), does this suggest a change in the emotional state - cheering, calming, upsetting?
(4) Might interacting with an interactive robotic cat promotes or instigate nurturing behaviours for the resident participants?

Research methods include semi-structured interviews, observation, and recorded naturalistic observations in situations simulating a potential real-life use of an interactive robotic pet within a PCH.

With the assistance of a caregiver, **the residents' participation** will consist of eight twenty minute private interactive sessions over a four week period. The sessions will be scheduled on weekdays between 1:00 and 4:00 in the afternoon. Each of the sessions will be video recorded for analysis. The first and last sessions will not include the robotic cat and will be used for baseline information. A staff member will be in attendance for the sessions with the robotic pet, the first and last sessions may be conducted solely by the

researcher. In addition, in the first week, I will be observing and taking notes of the participating residents at various times, in solitary and social moments, and while participating in various activities.

The **current routine** of activities and visits will be interrupted as little as possible. Families are encouraged to maintain normal routines of visits and activities with the residents.

If you are willing to participate, your participation will consist of two in-person interviews focused on your resident family member and interactive robotic pets. The interviews will take place in a private area of White Spruce Seniors' Home Care Home, at a time of your choosing. The interviews will be approximately thirty minutes long and will be voice recorded for analysis. You will not be asked to participate in the sessions with your resident family member and *the cat*.

The first interview, at the start of the study, is to gather background information about your family member such as interests, hobbies and favorite family times. I am also interested in your impressions of an interactive robotic cat. The second interview, approximately three weeks later, will explore any observable changes that may have occurred during the study period and your evaluation of the interactive robotic cat.

In order to gather information and to conduct this research your consent is required for the following activities:
For you to participate in the study.
To tape record both of your interviews.

Risk: The participating resident, family members, visitors, and staff will not be placed at risk, nor are any negative impacts expected. In the event that a resident indicates he/she does not wish to participate or continue to participate the session will stop. The sessions will be conducted with a caregiver in attendance who is familiar with the resident participant and how to cope with incidents of agitation.

Confidentiality: Although complete confidentiality cannot be guaranteed, due to the limited number of care homes in Winnipeg and the limited number of residents, confidentiality will be protected as much as possible. Only Alesa Sutherland, the researcher, will see all of the information gathered and recorded for this study. The identity of the participants and the location of the study will be protected through the use of pseudonyms and code numbers. Wherever possible, data results will be presented in the aggregate, and specific information will be cited or quoted only if it can be effectively anonymous. The videotaped sessions will be conducted in private locations at the PCH and will only be used for data analysis purposes. The video recordings will not be viewed by anyone other than the researcher; although segments of the videos may be shown to the thesis advisor.

Interview and consent forms will be entered into a password protected computer and the original copies will be stored in a locked file cabinet along with the master file of identifying information. All digital voice records and video data will be downloaded into a password protected computer. Backup copies will be stored in a locked filing cabinet. The computer and file cabinet will be stored in a secure location. Original consent forms, interviews, and all paper copies will be shredded and electronic or computer records and backups will be destroyed, deleted, or erased at the completion of the thesis project (approximately 3-6 months following the research).

Feedback on the study will be available to you. Several copies of the final report and Summary of Findings will be presented to White Spruce Seniors' Home. A copy of the summary can be mailed to you, if you wish to add your mailing address at the bottom of the signed form.

Acknowledgement for your participation consists only of my sincerest appreciation for your assistance.

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Researcher: Alesa Sutherland [redacted]
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Participant's Signature Date

Researcher's Signature Date

Appendix F Information and Consent Forms

F3 Staff Participants and Caregiver

RESEARCH PARTICIPANT INFORMATION AND CONSENT FORM
Staff Participants and Caregiver

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An Ethnography is a scientific study of human cultures and social interactions.
Researcher: Alesa Sutherland

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The **purpose of the study** is to consider whether an interactive robotic cat can add to the quality of life for people with moderate and advanced stages of dementia. Participating residents are selected because of the incidents of agitation that are often associated with dementia. An interactive robotic cat is designed to stimulate positive emotional experiences. I will be observing and recording participating residents engaging with the interactive robotic cat to answer the following four questions:
(1) In what ways and to what extent do people in moderate and advanced stages of dementia display interest or disinterest in interacting with a robotic cat?
(2) Will residents who have incidents of agitation experience a decrease in frequency or intensity of agitation in response to the interactive robotic cat?
(3) If there are observable changes in behaviour (agitation, interaction), does this suggest a change in the emotional state - cheering, calming, and upsetting?
(4) Might interacting with an interactive robotic cat promote or instigate nurturing behaviours for the resident participants?

Research methods include semi-structured interviews, observation, and recorded naturalistic observations in situations simulating a potential real-life use of an interactive robotic pet within a PCH.

With the assistance of a caregiver, **the residents' participation** will consist of eight twenty minute private interactive sessions over a four week period. The sessions will be scheduled on weekdays between 1:00 and 4:00 in the afternoon. Each of the sessions will be video recorded for analysis. The first and last sessions will not include the robotic cat and will be used for baseline information. A staff member will be in attendance for the sessions with the robotic pet, the first and last session may be conducted solely by the

researcher. In addition, in the first week, I will be observing and taking notes of the participating residents at various times, in solitary and social moments, and while participating in various activities.

The current routine of activities and visits will be interrupted as little as possible. Families are encouraged to maintain normal routines of visits and activities with the residents.

If you are willing to participate, your participation will consist of:
Two thirty-minute semi-structured private interviews at the start and end of the research.
Nurses will also be asked to complete three agitation inventories for two week periods before, during, and after the sessions with the robotic cat.

All staff members who will be facilitating sessions with the resident and the robotic cat will be asked to:
Attend one thirty-minute training session which covers use, care, and maintenance.
Collaboratively develop a schedule to accommodate eight sessions for each resident over the four-week research period.
Facilitate a portion of the two partially scripted baseline sessions with the residents at the start and end of the research.
Facilitate a portion of the six partially scripted sessions with an interactive robotic cat during weeks two and three. This includes:
Setting the robotic cat up in the designated room
Gaining resident’s agreement to participate in this session,
Escorting the resident to the designated location,
Assisting the resident to sanitize his/her hands
Conducting the session
Turning off the robotic cat
Escorting the resident to the appropriate location
Returning *the cat* to the designated storage location
Cleaning and securing *the cat* in the designated storage location.

The interviews will be digitally recorded in a private area of MCH and occur at a time of your convenience. I will endeavor to keep each session within a thirty-minute time frame. The purpose of the first interview is to provide background information and to help create a profile of the participating resident. The appropriate representative of the resident will have given written informed consent for the nurses and/or HCAs and me to discuss some cursory medical information such as: most recent MMSE score, chronic conditions, agitated behaviours, and the ability of the resident to complete his/her daily living requirements independently before I ask you for such information. The second interview will explore any changes that may have been noticed with the participating residents during the research period, the experience of working with an interactive robot, and recommendations for future use of *the cat*.

The introductory training session will be open to all caregivers from MCH; and only caregivers who have attended will be asked to participate in the project. The training covers the procedures for using, maintaining, cleaning, and securing the robotic cat. Following these procedures will allow the study to simulate the realistic experience of using robotic cat. The training sessions will occur at MCH and should take approximately thirty minutes.

Research sessions will be scheduled on week day afternoons between 1:00 and 4:00. Each resident will have eight sessions over the four week period: one partially scripted session in week one, without the robotic cat, to provide baseline data; six partially scripted sessions with the robotic cat in weeks two and three; one partially scripted session without *the cat* in week four. Each of the sessions will be video recorded for analysis.

Nurses will be asked to complete a set of three agitation inventories for each resident. Ideally, the same nurse will complete all three forms for a specific resident. The forms will take approximately fifteen minutes to complete. One form will be completed for each resident at the end of weeks one, three, and five.

Risk: The participating resident, family members, visitors, and staff will not be placed at risk, nor are any negative impacts expected. In the event that a resident indicates he/she does not wish to participate or continue to participate the session will stop.

Confidentiality: Although complete confidentiality cannot be guaranteed, due to the limited number of care homes in Winnipeg and the limited number of residents, confidentiality will be protected as much as possible. Only Alesa Sutherland, the researcher, will see all of the information gathered and recorded for this study. The identity of the participants and the location of the study will be protected through the use of pseudonyms and code numbers. Wherever possible, data results will be presented in the aggregate, and specific information will be cited or quoted only if it can be effectively anonymous. The videotaped sessions will be conducted in private locations at the PCH and will only be used for data analysis purposes. The video recordings will not be viewed by anyone other than the researcher; although segments of the videos may be shown to the thesis advisor.

Interview and consent forms will be entered into a password protected computer and the original copies will be stored in a locked file cabinet along with the master file of identifying information. All digital voice records and video data will be downloaded into a password protected computer. Backup copies will be stored in a locked filing cabinet. The computer and file cabinet will be stored in a secure location. Original consent forms, interviews, and all paper copies will be shredded and electronic or computer records and backups will be destroyed, deleted, or erased at the completion of the thesis project (approximately 3-6 months following the research).

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Researcher: Alesa Sutherland [redacted]
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Participant's Signature Date

Researcher's Signature Date

Appendix G Family Interview Guides

G1 Initial Interview of Family

Initial Interview Family Participant 30 minutes

Identification:
FP Id code #:__________ RP code #:__________ Date:__________ Time:__________
Female: __________ Male: __________ Age: __________(estimated)

Age of Resident Participant:__________ Did he/she have children?: __________(#)
Relationship:
Spouse child grandchild sibling relative friend other: __________

If other, probe for information about the nature of the connection, (for example they may be one of the paid personal companions, member of a church visiting group).

Topics to be explored:
Profile of the resident and background
Looking for an understanding of the person that has remained the same and the parts that have changed with advancing dementia.
Did they have pets - Did they fear animals?
Typical visit – where is the resident when the family member arrives? Where do they go, what do they do, what do they talk about?
Types of activities the resident has enjoyed or tried- what was the outcome?
Willingness to participate in the study – Resident and family member.
The cat (*The cat* will be present and turned on for a portion of the interview)
Evidence of nurturing and care giving

Sample Questions:
Thank you for allowing [name of relative] to participate in the study.
This is *the cat*. *The cat* will be an important part of the research.
What is your initial impression of *the cat*?
How do you think [name of relative] will react to *the cat*?

I would like to know your family member better before I begin my research. I appreciate your willingness to let me know them through your experiences.
Tell me about a typical visit.
What kinds of things did you do together before admittance to the home?
What were some of [name of relative] favourite activities?
Did [name of relative] have pets?
What kinds of things did [name of relative] like to do as a family?
I look forward to my time with [name of relative] and to our next conversation.
Thank you for your help.

Appendix G Family Interview Guides

Appendix G2 Exit Interview of Family

Exit Interview Family Participant 30 minutes

Identification:
FP Id code #: _________ RP code #: __________ Date: __________ Time: __________
Female: __________ Male: __________ Age: __________(estimated)

Topics to be discussed:
Changes over the past four weeks, if any - Positive and negative – probe for descriptive information
Opinion - Should use of *the cat* be continued, discontinued? –Reasons
Recommendations

We are now at the close of the research project. I have thoroughly enjoyed working with your ______.

Sample Questions
What has this time been like for you?
What do you think the past four weeks have been like for [name of relative]?
Has [name of relative] commented on *The cat* or the sessions? What was said?
Did you observe any changes in [name of relative] over the past four weeks? Could you describe these changes?
Should *the cat* continue to be used? If yes, what recommendations would you make regarding the use of *the cat* in the future? If no, why not?

Thank you again for your candid participation.

Appendix H Staff and Caregiver

H1 Initial Interview of Staff and Caregiver

Initial Interview	Staff and Caregiver	30 Minutes

SP study Id code #__________ Date:__________ Time: __________

RN LPN HCA Spiritual Care Other:__________
Male or Female
How long have you worked at MCH? __________

Indicate which RPs they are assigned to:
RP code # : __________ RP code # : __________
RP code # : __________ RP code # : __________

Topics to be explored
The cat
Personalities and specific issues with each resident
Nurturance within the PCH

Sample Questions
General
Thank you for agreeing to participate in the study. I am so pleased that you made this decision.
What motivated you to devote time to this research?
What is your initial impression of *the cat*? Do you envisage any problems with using *the cat?*

One of the reasons I wanted to do this research at MCH is because there is significant emphasis by the staff on providing a caring and nurturing environment for the residents. What opportunities do the residents have to nurture? (Probe for how do residents nurture and whom do they nurture.)

For each resident
If nurse or HCA:
Tell me about [name of resident]. Does [name of resident] have any chronic or underlying conditions that may affect his/her experience with *the cat*?
What level of dementia is this resident assessed?
What behaviours are displayed that are attributed to dementia? (agitation, depression, aggression etc.)
How does [name of resident] socialize? Has [name of resident] established special attachments ? What about nurturing or caring behavior?
How do you think [name of resident] will react to *the cat*?

Tell me about your usual interaction with [name of resident] – what things do you do together (probe for ability to handle daily living activities)

If Spiritual Care:
Tell me about your usual interaction with [name of resident] – what things kind of do you do together? What are your modes of communication?
How does [name of resident] socialize- What about special attachments? What about nurturing or caring? What about spiritual connections?
How do you think [name of resident] will react to *the cat*?

Thank you for your time. I look forward to working with the staff, *the cat*, and the residents.

Appendix H Staff and Caregiver

H2 Exit Interview of Staff and Caregiver

Exit Interview	Staff and Caregiver	30 Minutes

SP study Id code #__________ Date:__________ Time: __________

Indicate which RPs they are assigned to:
RP code # : __________ RP code # : __________
RP code # : __________ RP code # : __________

Topics to be covered
In general:
Describe the experience of the past weeks
In what ways did *the cat* add to or subtract from work load – how will this impact future use of *the cat?*
Problems – that developed as a result of application or problems with *the cat*
Benefits/Advantages/Disadvantages
Unexpected outcomes – including other residents, staff, and family, *the cat*.

For each RP:
General impressions
Changes (positive and negative, anything at all)
Residual effects or impacts of any kind
Continue the recreation/treatment?

Sample questions
General
What stands out for you respecting the last four weeks with the four residents selected for the study?
Were there any unexpected outcomes or events with other residents, staff, or family during this period?
What are your impressions of t*he cat*?
What made *the cat* easy to use? Difficult to use?
What did you like most about working with t*he cat*? What did you like least about working with *the cat*?

For each resident he/she worked with:
How would you describe the interaction between [name] and *the cat*? (Evidence of caring for or nurturance of resident)
What changes in [name of resident] did you notice over the past four weeks?

General
Should *the cat* continue to be used? Would you continue to use *the cat*?
If so, what recommendations would you make regarding the use of *the cat* in the future?

Appendix I Practice Session Guide

Note: The researcher and camera equipment will be in position prior to the start of the session. Time permitting, the sessions will be facilitated by a staff member with the researcher as observer. If necessary, the researcher could conduct the sessions.
Approach the resident, ask the resident to join you in a conversation
Upon receiving consent, escort the resident to the location designated for this purpose
Cleanse the resident's hands using sanitizing gel – offer an explanation – to prevent the spread of germs - if asked
Engage the resident in conversation for up to fifteen minutes while looking through a magazine
The staff member indicates that they will need to end the conversation in a few minutes
The staff member asks the resident if he/she would like to visit again
Escort resident back to appropriate location.

Appendix J *The Cat* Session Guide

Note: The researcher and camera equipment will be in position prior to the start of the session.

Approach the resident, ask the resident to participate in a visit with *the cat*,
Upon receiving consent, escort the resident to the location
Cleanse the resident's hands using sanitizing gel, offer the explanation of keeping *the cat* and the resident clean
Situate the resident at the table with *the cat* or place *the cat* in the resident's lap,
Turn on *the cat*
Stroke *the cat* to get responses from t*he cat* while encouraging the resident to do the same
Continue to lead and encourage the resident to engage with *the cat* until the resident appears to be engaging on his/her own at which time the staff member present responds when addressed, but lets the resident lead
After fifteen to seventeen minutes, the staff member present indicates that they will need to say goodbye to *the cat* in a few minutes,
Ask the resident if he/she would like to visit with *the cat* again
Say goodbye to *the cat*
Escort resident back to appropriate location.

Appendix K Protocol for Causes of Concern

Note: Each staff member has been trained in the use of the P.I.E.C.E.S. approach which is focused on understanding the individual in order to understand his/her needs. Understanding the unique person assists caregivers to determine the possible causes of agitation (Physical, Intellectual, and Emotional health; the resident's Capabilities; the Environment; the needs of the Social self.) and provide relief from the irritant. Each solution is highly individualized.

If an incident occurs, if there is any cause for concern, or at the request of the staff member present, the researcher will leave the room to notify the nurse-in charge.
If the nurse-in-charge is not at the desk in the adjourning room, the research will either:
Ask another staff member to provide assistance
Or ask another staff member to page the nurse-in-charge
The researcher will return to the room to assist the staff member present as directed until the nurse-in-charge or another staff member arrives. And at the first opportunity the researcher will turn off all recording devices. Treatment of distress not part of project and will not be recorded.
The nurse-in-charge and staff member present will determine the cause of the incident and provide appropriate treatment following the P.I.E.C.E.S. approach and within the normal expectations of the PCH.
The nurse-in-charge and staff member may wish to move the resident to his/hers room or to have *the cat* removed from the room. If *the cat* is to be removed, the researcher will take t*he cat* to the designated storage location. The researcher will return and remain if her presence is helpful otherwise she will depart.
The nurse-in-charge and the staff member present will determine whether it is in the best interest of the resident to continue with the current *the cat* session.
The Resident Care Manager will determine whether it is in the best interest to include this resident in future sessions with *the cat*.

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