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Humor-Related Social Exchanges and Mental Health in Assisted Living Residents

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by

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Abstract

Social contact is known to be vital for older adults' mental and physical health, but few studies of social interactions have taken place in long-term care settings. The current study investigated whether the psychological well-being of assisted living residents was influenced by factors associated with residents' social interactions involving humor.

Specific aims of the present study were to develop and test a measure related to humor-related social exchanges, to examine how humor-related social exchanges affect residents' mental health, and to explore whether humor-related social exchanges mediated the effects of resident and facility characteristics on indices of mental health.

One hundred and forty older adults residing in 14 assisted living facilities in the Portland, Oregon metropolitan area were interviewed about the frequency and types of social interactions they experienced with members of their facility-based social networks, as well as depression, mood, loneliness, self-esteem, and self-rated health.

A 12-item, two-factor model of humor-related social exchanges was identified through confirmatory factor analysis, including both positive and negative humor-related social exchange factors. The newly developed scale displayed evidence of adequate reliability and validly in the current sample.

Results indicated that both positive and negative humor-related exchanges were associated with various aspects of mental health, although negative humor-related exchanges appeared to be a stronger predictor of mental health than positive humor-

related exchanges. Both positive and negative humor-related exchanges also served as mediators between resident and facility characteristics and indicators of mental health.

Cultivating a better understanding of the relationships between humor-related social exchanges and mental health may be beneficial for researchers interested in the way humor impacts older adults' ability to cope with stress. This research may also be of value to long-term care providers who create interventions designed at improving residents' mental health and overall quality of life.

Dedication

This work is dedicated to my amazing mother and best friend, Constance Angela Beall. For as long as I can remember, she has been my confidant, cheerleader, sounding board, and advocate. Throughout my years, but most especially during the dissertation process, she has offered her unending support, encouragement, and humor. Without her selfless generosity and unconditional love, my completion of this degree would not have been possible.

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Chapter 1: Introduction

By 2050, the population of adults aged 65 and over will more than double, with the number of those aged 85 and over increasing more than three-fold (U.S. Census Bureau, 2010). To accommodate the growing population of older adults who require daily assistance, long-term care options have diversified. Whereas nursing homes were once the only option for older adults with chronic conditions and functional limitations, the past two decades have produced a variety of options focused on providing a less institutional living experience than that offered in a traditional nursing home environment. One such option is assisted living. Although assisted living facilities vary from state to state, most are characterized by a consumer-driven approach, offering a homelike environment that places primary importance on ensuring residents' dignity and autonomy, encouraging their independence, and encouraging the involvement of families and friends in their lives. Nursing homes are often considered a medical or institutional model of care (Henderson & Vespari, 1995), and assisted living is often referred to as a social model of care (Eckerdt, Carder, Morgan, Frankowski, & Roth, 2009). A recent study by Mitchell and Kemp (2007) suggests that the social component of assisted living residents' lives makes a significant contribution to positive quality of life, as well as fewer symptoms of depression. With these important demographic changes in mind, the goal of the present research was to begin to explore in detail the *social environment* residents experience within the *social model* of care promoted by many assisted living providers. Additionally, assisted living in Oregon is unique in that residents in assisted

living settings are guaranteed their own private rooms and bathrooms, thus eliminating one potential source of variability from the present study.

Research has established that positive social interactions are related to older adults' mental health and well-being (Billings & Moos, 1981; Cohen & Wills, 1985). Such interactions, or *exchanges*, help older adults to maintain a sense of meaning in life (Krause, 2004), feel understood and appreciated (Rook, 1987), and experience a sense of self-worth (Krause, 2003). Conversely, the absence of social ties has been shown to put older adults at greater risk for depression (Oxman, Berkman, Kasl, Freeman, & Barrett, 1992;) and cognitive decline (Bassuk, Glass, & Berkman, 1999; Fratiglioni, Wang, Ericsson, Maytan, & Winblad, 2000). In fact, loneliness has been associated with an increased risk of late-life dementia (Wilson, Krueger, Arnold, Schneider, Kelly et al, 2007).

Recent work has also begun to consider the detrimental effects of negative exchanges (see Rook, 1992). Negative exchanges can range in severity from major transgressions, such as physical or financial abuse, to minor annoyances, such as a thoughtless act by an acquaintance. Not surprisingly, negative interactions and social strain are potent factors in creating psychological distress (Antonucci, Akiyama, & Lansford, 1998; Newsom, Rook, Nishishiba, Sorkin, & Mahan 2005; Rook, 1992). In fact, in a longitudinal study of older adults, Newsom and colleagues (Newsom, Nishishiba, Morgan, & Rook, 2003) found that negative interactions were both more potent and more long-lasting than positive interactions. Conflictual social interactions have also been associated with poorer cognitive functioning (Seeman, Lusignolo, Albert,

& Berkman, 2001), poorer physical health (McQueen, Newsom, & Rook, 2005; Uchino, 2004), and poorer self-rated health (McQueen & Newsom, 2006).

Despite compelling research on social interactions to date, only a handful of studies have investigated the quality of social interactions within long-term care settings. Opportunities for social interactions are clearly important for older adults in long-term care settings whose social contact often dwindles as a result of moving into a facility (Port, et al., 2001). Currently, little is known about how older adults may interpret social interactions with other residents and facility staff. Additionally, very few researchers have considered the effects of negative social exchanges among older adults living in facilities. As such, most studies of social interactions have indicated that social support is helpful to older adults, but they have ignored the implications of negative interactions.

Social interactions involving humor may be particularly salient in the lives of long-term care residents who often face multiple age-related losses. Humor can enhance or promote social relationships and help to buffer the effects of psychological stress. Specifically, humor is related to a variety of mental temporary reductions in negative mood (Moran, 1996), reductions in anxiety (Szabo, Ainsworth, & Danks, 2005), and increased feelings of hopefulness (Vilaythong, Arnau, Rosen, and Mascaro, 2003). Humor can serve as a coping mechanism (Lefcourt, Davidson, Prkachin, & Mills, 1997), as a means of initiating and preserving interpersonal relationships with others (Galloway & Cropley, 1999), as a way of shifting conversations away from potentially threatening topics (Norrick, 1993), and as potentially meaningful intervention when relating to an

older person with dementia (Buckwalter et al, 1995). Laughter induced by humor may also produce numerous health benefits (Berk et al, 1989; Fry, 1992; Wooten, 1996).

Although it has rarely been explored in research, humor also has an ominous side. Negative forms of humor, which include both failed attempts at humor and humor with a negative intent, may be characterized by aggression, criticism, manipulation of others, sarcasm, and ridicule that are interpreted as hurtful, offensive, demeaning, or overbearing. Humor can also be used to control others in social situations and to reinforce unbalanced power structures and social hierarchies in which more powerful actors produce humor that establishes and maintains their higher status (Norrick, 1993; Sayre, 2001).

Thus, whether and how humor is used in social exchanges involving assisted living residents appears to be an important component of studying and evaluating social interactions and how these exchanges may affect residents' mental health. This is a new area of study, and no measures currently exist to gauge the positive and negative functions of humor from a social interaction perspective. Developing a scale that quantifies the function of humor within social exchanges could potentially lead to humor-based training and interventions designed to strengthen communication and enhance relationships in long-term care facilities.

Objectives of the Present Study

Many studies of social exchanges have included community-dwelling older adults within the sample, but few researchers have attempted to examine social exchanges among older people living in long-term care settings. Long-term care settings provide a

unique social setting in which to study social exchanges. Although residents in Oregon assisted living facilities have their own private rooms and bathrooms, meals and activities generally occur in shared or common spaces. Additionally, because most assisted living residents rely on facility-based transportation rather than driving their own automobiles (ALFA, 2009), their social contact is often limited to other residents and staff within the facility. Thus, social relationships may arise out of convenience or proximity to others rather than shared goals or experiences. It is also the case that most long-term care activities or social groups are designed to facilitate supportive bonds. While these efforts may be beneficial, they omit interventions that may prove to be more effective in improving residents' mental health and quality of life: reducing or preventing negative exchanges.

One objective of this research was to explore the frequency and appraisals of both positive and negative social exchanges of older adults living in long-term care. Studying social exchanges and their effects on well-being in this population was especially important given their propensity for social isolation, especially if they were experiencing cognitive impairment. Additionally, few researchers have examined the outcomes of positive and negative social exchanges between long-term care residents and the direct care workers who may comprise a large portion of their social networks. Investigating these relationships may contribute to novel interventions that improve residents' emotional well-being, address gaps in direct care worker training, and help to improve relationships between direct care workers and residents, as well as between residents and their peers.

An additional objective involved the development a scale that allowed for the investigation of humor within a social exchange framework. Because humor appears to function in a similar way to other domains identified by social exchange researchers, the decision was made to create items that could potentially enhance an existing scale of positive and negative social exchanges. Furthermore, research suggests that other identified domains of positive and negative exchanges are associated with mental health. Developing a scale that could reliably measure the frequency of humor within social exchanges allowed for the exploration of relationships between social exchanges involving humor and various indices of mental health.

Additional objectives of this research related to resident and facility characteristics that may predict the frequency of or appraisals of residents' social exchanges. If facility characteristics, such as the number of staff hours per resident per day, whether direct care workers were consistently assigned to care for residents, and dining room seating policies predicted residents' frequency of positive or negative social exchanges and/or mental health, they could be altered by providers to better suit residents' preferences. Although specific resident characteristics may not be easily changed, information on the impact of certain characteristics such as cognitive health, the decision-maker for the resident's move into assisted living, or a resident's social contact *outside* of the facility could lead to a better understanding of residents' social needs.

The present study extended previous work by attempting to thoroughly examine both positive and negative social exchanges among residents in assisted living settings that combine both institutional and non-institutional elements. Additionally, this research

examined humor-related social exchanges as a component of social contact for the first time. In doing so, the present study contributes to the gerontological literature, and the literature on the psychology of humor. Finally, research findings from this study have the potential to impact both the relationships and mental health of older adults living in long-term care.

Chapter 2: Review of Literature

The present study was informed by literature pertaining to long-term care in the United States, literature related to social interactions, and literature concerning humor.

Research Pertaining to Long-Term Care in the United States

The following section provides a review of literature related to long-term care, its evolution in the United States, the development of the Oregon model of long-term care service delivery, and the recent movement geared toward creating more personalized, less institutional methods of providing supportive services to people living in facility-based long-term care environments. Before addressing these topics, however, it is important to clarify the meaning of long-term care, as well as several related concepts and terms.

Long-term care includes health and medical care, as well as other types of support for people who cannot perform one or more activities necessary for independent living. Kane, Kane, and Ladd (1998) define long-term care as, “assistance given over a sustained period of time to people who are experiencing long-term inabilities or difficulties in functioning because of a disability” (p. 4). *Skilled nursing* is a type of long-term care that includes rehabilitation and various medical and nursing procedures. Skilled nursing care is generally provided in a nursing home (also called a skilled nursing facility), but it may also be provided in other settings, such as the patient's home, with help from family or visiting nurses or therapists. Residents within skilled nursing facilities are generally under the supervision of a physician, and a standardized form called the Minimum Data Set (MDS; Centers for Medicare and Medicaid Services, 2009) is used to record his or her condition and ongoing care regimen. Skilled nursing facilities also have nurses available

24 hours a day, with at least one registered nurse employed full-time. *Personal long-term care* describes long-term care designed to assist a person with activities of daily living, which include assistance with bathing, eating, dressing, using the toilet, continence, and transferring. It is less intensive or complicated than skilled care and can be provided in many settings, including facilities, adult day care centers, or at an individual's home. Assisted living, residential care, adult foster care, and other facility-based long-term care generally fall into the category of personal long-term care.

Home and community-based services is another term that warrants clarification. This term often refers to long-term care services offered to consumers in lieu of nursing home placement. States may offer a variety of these services to Medicaid consumers under a home and community-based services waiver program, and the number of services that can be provided is not limited (Center for Medicare and Medicaid Services, 2009). Home and community-based services may include the provision of traditional medical services (i.e. dental services, skilled nursing services), as well as non-medical services (i.e. respite, case management, services provided in group living environments other than nursing homes).

It is also important to designate a term to describe those who use long-term care services. Depending on the setting in which long-term care services are rendered, those on the receiving end have been referred to as patients, tenants, consumers, customers, clients, or residents. Because this study focuses specifically on older adults living in facility-based group living settings, the term *resident* will be used hereafter to describe these individuals.

The History and Evolution of Long-Term Care in the United States

The U.S. Department of Health and Human Services estimates that by 2020, 12 million older Americans will need long-term care. Yet, for many older adults and their families, the American system of long-term care is complicated and difficult to maneuver. Holstein and Cole (1996) state that the American long-term care system, "… uneasily and incompletely responds to the needs of chronically ill elders and their families" (p. 44), and in *It Shouldn't be This Way: The Failure of Long-Term Care*, geriatrician Robert Kane and his sister, Joan West, chronicle their family's experience with a United States long-term care system they describe as "a national disgrace" (Kane & West, 2005, p. 6). Part of the reason for many consumers' dissatisfaction with the current U.S. long-term care system may have to do with the haphazard way in which the system developed. In fact, Holstein and Cole (1996) characterize America's long-term care history as a series of afterthoughts, stating, "We are now literally and figuratively paying the price for our earlier history, when policies were developed incrementally and in a piecemeal fashion, with little coordination and without adequate attention to their possible consequences" (p. 20). The first portion of this section provides an overview of the policies and social climate that facilitated the evolution of long-term care in the United States.

The Colonial Era until 1935. The evolution of the American long-term care system can be traced back to the colonial period (Holstein & Cole, 1996). From the colonial period until about 1820, the provision of assistance was informal and decentralized, with families and communities serving as the first and main source of

relief and care to the poor or infirm. For the most part, during this time period, small towns and common religious beliefs dictated that those experiencing poverty and illness be taken care of by the community (Wood, 1992). Those without relatives, friends, or benefactors relied upon the local government for relief (Achenbaum, 1978).

From 1820-1865, the Revolution, immigration, and new political thought brought about changes in Americans' attitudes about and toward the poor (Holstein & Cole, 1996; Kutzik, 1979). The earlier period's grassroots approach to providing relief to the poor and sick was replaced by the belief that the root cause of poverty was iniquity and amoral behavior, and that it could be abolished through harshness. The abhorrence of poverty led to the first institutions, called almshouses or poorhouses. These institutions claimed to have reformative goals, but their substandard conditions also served to castigate the poor, as well as to deter families from discarding their poor or disabled relatives into state care (Katz, 1984). During this period, private homes for "worthy" aged began to emerge, with several religious and philanthropic organizations offering solace to those deemed appropriate (Haber, 1993), but those with few financial resources had a different experience. In the African American community for example, institutional care was unavailable, and slaves' families and fictive kin cared for elders as best they could. Slave owners, however, were reported to have neglected or killed elderly slaves when they were no longer seen as useful (Holstein & Cole, 1996).

The period from 1865 until 1935 saw the populations of almshouses being separated into more specific institutions. Orphanages, mental institutions, special schools, and workhouses accumulated many people formerly destined for the almshouse, leaving

older people with no kinship ties to become the default residents of almshouses (Katz, 1984). With municipalities intent on not squandering precious resources on the permanently disabled (Haber, 1993), conditions within almshouses worsened (Dieckmann, 1993). Even in situations in which kinship ties did exist, caregiving of older adults began to shift away from community roots, and the primary responsibility fell more frequently on women (Abel, 1991). During this period, hospitals began to focus principally on acute care, leaving those with chronic conditions, especially the aged poor, without a means of receiving needed care. In response to the substandard conditions of the almshouses, several mutual aid societies and organizations started homes for those elders who came from wealthy or respected families. They referred to these elders as “worthy” aged, (Kutzik, 1979) thereby further alienating those who were poor or lacked social status. Gradually, these mutual aid society homes expanded in number, and the addition of nurses signaled the beginnings of what would evolve into nursing homes (Dunlop, 1979).

On October 29, 1929, also known as "Black Tuesday," the U.S. stock market crashed, officially setting off the Great Depression. By 1933, a quarter of the American workforce was unemployed and many people became homeless (Library of Congress, 2009). During this period, the already grim financial circumstances facing many older adults worsened, and many immigrants and those with no kinship ties were relegated to almshouses. In the early 1930s, some states halfheartedly offered pension plans, but few older adults took advantage of them, either because benefits were too small, they felt reluctant to take handouts from the state, or individual counties simply opted not to

participate in the programs (Social Security Administration, 2003). In fact, many estimates indicate that about half of older adults in 1934 lacked the income to support themselves (Social Security Administration, 2003).

1935 until the present. In response to circumstances brought about by the Great Depression, new political and social movements gained support. Populist movements such as Huey Long's Share Our Wealth plan (Social Security Administration, 2003), which aimed to redistribute America's wealth to guarantee every family a living wage; the Townsend Plan for old-age pensions (Social Security Administration, 2003); and socialist movements such as Upton Sinclair's End Poverty in California (EPIC; Social Security Administration, 2003) plan included provisions for social insurance. In response to these and other circumstances, the Social Security Act was passed in 1935. Title I of the Social Security Act provided matching grant funding to states for Old-Age Assistance, including state welfare programs for the aged, but these funds were denied to any individual living in almshouses or other public institutions that were seen as providing substandard care and facilities. The consequences of the decision to deny Title I funds to public institutions has had a huge and lasting impact on America's long-term care system.

The establishment of nursing homes. As a result of the limitations on Old Age Assistance, a new sector of private facilities emerged, including the first nursing homes (Haber & Gratton, 1993), many of which were private homes functioning as small group residences (Vladeck, 1980). Because these homes were not public facilities, they were eligible for Title I funding. Over the next decade, entrepreneurs took advantage of the

funding opportunity, and the number of nursing homes grew. Concerns about the adequacy of care and living conditions at many nursing homes, however, precipitated the 1950 amendments to the Social Security Act. These amendments lifted the ban on reimbursement to public facilities and created a system in which states received matching funds for poor older people and permanently disabled people in nursing homes. This program, in which direct payments were made to vendors, served to attract entrepreneurs to the nursing home industry, causing it to grow even larger (Holstein & Cole, 1996). Soon after, the Medical Facilities Survey and Construction Act of 1954 was passed (as an amendment to the Hill-Burton Act of 1946; Giacalone, 2001), brought about by perceived inadequacies of nursing homes. This act created grants for the construction of nonprofit and nonproprietary nursing homes that were affiliated with hospitals. This development not only aligned nursing homes with a medical model of care, it also incited lobbyists from the American Association of Nursing Homes to demand similar funding opportunities for proprietary nursing homes. The nursing home lobby was successful, and in 1956 and 1959, the Small Business Administration and the Federal Housing Administration, respectively, began making loans to developers of nursing homes without any requirement of affiliation with hospitals (Vladek, 1980). The following years saw the number of nursing homes continue to increase rapidly, but the adequacy of care was still questionable in many homes, and noncompliance often went unenforced.

Medicare and Medicaid. The Social Security Act of 1965 resulted in the adoption of both the Medicare and Medicaid programs. Medicare is a social insurance program providing basic health care coverage to people aged 65 and over. There are several parts

to Medicare. Part A covers hospital bills, and Part B covers outpatient health care expenses including doctors' fees. Part C consists of Medicare-approved private insurance plans that combine Parts A and B to cover all medically needed services and prescription drug coverage, which is otherwise covered through Part D. While Part A costs nothing to most people over age 65, both Parts B and D are supplemental and require participants to pay an additional monthly premium to join. Medicare Part A covers major medical expenses, as well as stays in a skilled nursing facility of up to 100 days following a hospital stay (Kaiser Family Foundation, 2008). Medicare, in general, is designed to cover only acute long-term care needs, and thus, it does not pay for ongoing long-term care costs.

Medicaid is a means-tested program that is managed by each state but funded jointly by both states and the federal government. Medicaid covers a broader spectrum of services than Medicare does, and it is the largest source of funding for medical and health-related services for people with limited incomes in the United States and comprising 13% of the United States budget (Kaiser Family Foundation, 2010). Unlike Medicare, it does cover institutional long-term care, but only if such care is delivered in a skilled nursing facility. Even Medicaid waivers, which may allow funds to be paid to non-nursing facilities, only cover health-related services and do not cover room and board costs. Medicaid's long-term care coverage constitutes one of the most costly segments of current Medicaid spending (Center for Medicare and Medicaid Services, 2005). In fact, Medicaid paid for approximately 42% of the 158.2 billion dollars spent on long-term care services in 2004 (Kaiser Family Foundation, 2006).

When first enacted, Medicaid required that matching funds would only be distributed to nursing homes that met federal standards. Thus, many facilities became more like hospitals in order to provide health-related services and receive funding. Those residential care facilities that did not meet federal nursing home requirements became known as board and care homes, adult care homes, convalescent homes, retirement homes, and other titles (Wilson, 2007). Some of these facilities targeted low income older adults and provided very modest housing and services while others provided various amenities, attracting wealthier people.

Home and community-based services waivers. In 1981, Congress enacted legislation that allowed states to pursue Home and Community Based Services waivers for services covered by Medicaid. These waivers allow Medicaid funds to be disbursed to vendors other than nursing homes that provide long-term care services. Currently, 48 states and the District of Columbia have received Home and Community Based Services waivers (Center for Medicare and Medicaid Services, 2009). A subsequent section will provide greater detail on the evolution of long-term care services in Oregon, which was the first state to receive a Home and Community Based Services waiver in 1981.

The development of assisted living. The present study involves older adults who reside in assisted living settings, and the following subsection provides a brief overview of the evolution of assisted living, as well as current statistics on assisted living facilities.

Early versions of what is now considered assisted living emerged as a response to the institutional, hospital-like settings of nursing homes. Wilson (2007) states that assisted living was based on “a vision of a different way of bringing physical

environments, care and service capacity, and philosophy together to offer a more desirable product to older people, many of whom were destined for nursing facilities" (p. 9). The Assisted Living Quality Coalition (1998) further asserted that, "assisted living must be driven by a philosophy that emphasizes personal dignity, autonomy, independence, and privacy in the least restrictive environment. Further, it should enhance a person's ability to 'age in place'..." (Hawes, Rose & Phillips, 1999).

Models of assisted living on the east and west coasts emerged concurrently but, their trajectories of development emerged somewhat differently. In Oregon, assisted living was largely the brain child of Keren Brown Wilson, who envisioned a housing model for older adults with a residential rather than an institutional feel, a philosophy that emphasized older adults' choice, control, and autonomy, and the delivery of both specialized and routine services in private apartments with kitchens, locking doors, and individual thermostats (Kane, Kane, & Ladd, 1998). The first assisted living building in Oregon, called Park Place, was opened in 1983 and served both low-income and private-pay residents (Wilson, 2007). In Virginia, Paul and Teresa Klaassen began what is now Sunrise Senior Living with a similar philosophy of care to that of Park Place. Their guiding principles also focused on creating an environment in which residents were afforded respect, dignity, privacy, and independence. In terms of living spaces, however, their emphasis was on creating public spaces where residents could gather (Peck, 2006). In Sunrise's communities, modeled after large Victorian mansions, individual rooms were small and sometimes shared, and kitchenettes were furnished with sinks and small refrigerators but without stoves. The Virginia model of assisted living also focused only

on private-pay residents, never attempting to solicit Medicaid funding to serve low-income residents. Over time, Oregon's assisted living model emerged as a partnership between providers and the State, with specific regulations and state-sponsored training written to support the development and proliferation of assisted living (Wilson, 2007), whereas in Virginia, restrictive regulations discouraged providers from providing services to more frail residents in assisted living settings, and third-party providers were enlisted to provide services to those aging in place and requiring more extensive services.

In the mid 1990s, several assisted living companies became publicly traded in order to raise funding for expansion. That expansion occurred rapidly and the term "assisted living" was soon a household word. As a result, many providers developed their own versions of assisted living. According to Wilson (2007) these providers "muted or changed many of the ideals of the early models… early definitions and parameters tended to get lost in the marketing melee" (p.18). Some states even succumbed to the market draw of assisted living, rewriting regulations to accommodate assisted living within residential care licensing guidelines. As a result of the way individual states and providers have defined assisted living, as well as the complexities associated with characterizing assisted living as a consumer "good" (Carder & Hernandez, 2004), the actual meaning of the term "assisted living" has become muddled. In fact, Zimmerman and colleagues (Zimmerman, Gruber-Baldini, Sloane, Eckert, Hebel, Morgan, Stearns, Wildfire, Magaziner, Chen, & Conrad, 2003) state, "In essence there is no single accepted definition of AL [assisted living] nor guidelines for how to operationally distinguish it from other forms of care" (p. 108). Further, in a national probability sample,

Zimmerman, Sloane, and Eckert (2001) found great discrepancies between assisted living facilities, with only about 11% offering both the high service and high privacy identified by the philosophies of early assisted living pioneers.

By the late 1990s, the confusion surrounding how to define assisted living began to surface in the form of high-profile complaints about quality and negative consumer experiences, culminating in a Government Accountability Office report (Wilson, 2007). The report, based on surveys and interviews from California, Florida, Ohio, and Oregon, stated:

> Providers do not always give consumers information sufficient to determine whether a particular assisted living facility can meet their needs, for how long, and under what circumstances. Marketing material, contracts, and other written material provided by facilities are often incomplete and are sometimes vague or misleading. Only about half of the facilities reported that they provide prospective residents with such key written information as the amount of assistance residents can expect to receive with medications, the circumstances under which the cost of services might change, or when residents might be required to leave if their health changes. In addition, only about one-third provide a description of the qualifications of facility staff or information on the services that are not available (p. 3).

In reaction to the GAO report, many providers abandoned the earlier ideals of assisted living, opting instead to "retreat to familiar, comfortable methods of advocacy and regulatory oversight" (Wilson, 2007, p. 19), such as focusing on obtaining deficiency-free survey results, avoiding regulatory challenges, and abandoning innovation in favor of a low-profile.

Currently, 43 states and the District of Columbia have adopted assisted living as a category for licensure (Mollica, Sims-Kastelein, & O'Keeffe, 2007), and in doing so, each state has created its own unique "brand" of assisted living. Eckert, Carder, Morgan,

Frankowski, & Roth (2009) sum up the resulting assisted living facilities as “complex places, made so by the intersection of individual lives, political and economic factors, social and cultural beliefs, and conflicting expectations” (p. 2).

Long-Term Care in Oregon

Whereas the previous sections focused on the broader history of long-term care in the United States, the following subsection traces the evolution of Oregon’s long-term care system.

Although Oregon’s current long-term care system is dominated by home and community based options, such was not always the case. Prior to the 1980s, the long-term care system in Oregon was much like that of any other state for older adults requiring facility-based long-term care. Those who could afford to pay for private care had a variety of options, but those receiving assistance from Medicaid were relegated to nursing homes. During the late 1970s and early 1980s, however, Oregon’s long-term care system underwent a metamorphosis and emerged as a model of choice and independence for long-term care consumers (Kutza, 1998).

In 1979, Oregon began a demonstration project aimed at offering community-based alternatives to what was seen as overuse of nursing homes. The demonstration project spanned four counties and examined the outcome of using Medicaid match funding to support home and community-based alternatives to nursing home care. The findings from the demonstration indicated that in order for alternatives to nursing home placement to become viable, cost-effective options, changes in the way services were structured and coordinated were needed. Eventually, an *ad hoc* committee appointed by

the Governor's Commission on Senior Services crafted a bill that combined finding sources and shifted the administration of long-term care services to local Area Agencies on Aging.

The result, Oregon Senate Bill 955, was voted into law in 1981. This legislation created a division of the Oregon Department of Human Services called the Senior Services Division (which became the Senior and Disabled Services Division in 1989 and Seniors and People with Disabilities in 2001). This new division brought together the administration of all federal and state programs for older adults and gave local Area Agencies on Aging a more central role in the administration of long-term care service delivery. Of primary importance, according to Kutza (1998), Senate Bill 955 "embodied a distinct philosophy… to develop programs in which an individual's independence and dignity will be maximized, and in which services to eligible clients are provided in the least restrictive setting" (p. 5). In fact, Oregon Revised Statute reads:

> [The state shall] ...assure that older citizens and citizens with disabilities retain the right of free choice in planning and managing their lives; by increasing the number of options in life styles available to older citizens and citizens with disabilities; by aiding older citizens and citizens with disabilities to help themselves; by strengthening the natural support system of family, friends and neighbors to further self-care and independent living; and by encouraging all programs that seek to maximize self-care and independent living within the mainstream of life (Senior and Disability Services, Oregon Revised Statute 410.020(2), 2007).

At the same time Oregon's state system was undergoing its transformation, the federal Home and Community Based Services waiver program was incorporated into the Social Security Act as Section 1915(c). This program allowed states to apply for waivers that permitted the use of Medicaid funds to develop cost-neutral services not otherwise

covered under Medicaid, including case management services, homemaker services, home health aide services, personal care services, adult day health care services, and habilitation services (Duckett & Guy, 2000). In 1981, Oregon was the first state to receive a waiver that allowed for Medicaid reimbursement for care and services (not including room and board). Currently, Oregon's three facility-based long-term care alternatives for nursing-home-eligible residents include Adult Foster Homes, Assisted Living Facilities, and Residential Care Facilities. In addition to facilitating the aforementioned options aimed at providing choice, dignity, and independence to those requiring long-term care services, Oregon's waiver system has garnered savings for the state (Burwell, Sredle, & Eiken, 2006). Under Oregon's system, fewer Medicaid beneficiaries were relegated to nursing homes. Instead, many people chose alternative facilities, which cost less per day than nursing homes. The resulting savings have been reallocated to furthering community-based care options (Kutza, 1998). Oregon still ranks at the top of the list in terms of the supply of residential care beds and use of Medicaid waivers for residential care services (Hernandez, 2007).

In 2007, Oregon Medicaid expenditures for older adults and adults with disabilities averaged $179 per person for the year (Houser, Fox-Grage, & Gibson, 2009). While this number may not appear remarkable in itself, a closer investigation into *how* these Oregon Medicaid dollars were spent provides interesting insight into Oregon's long-term care delivery system. Of the $179 average per person expenditure of Medicaid funds, only $78 was spent on nursing home care. The remainder ($101) was spent on home and community-based services. Whereas other states spend an average of only 27%

of their Medicaid funds for older adults and adults with disabilities on home and community-based services, Oregon spends approximately 56% of its funds on such services. In fact, Oregon is ranked second in the nation in terms of spending on home and community-based services (Houser et al, 2009).

Oregon Long-Term Care Licensure Categories

This subsection will provide a brief description of each type of facility licensed in Oregon and the important differences in their licensure categories. Although in-home care, respite care, and adult day services are considered long-term care options by the state (Oregon Department of Human Services, 2009), they do not provide substitute living arrangements. Therefore, they will be omitted from the following subsection.

It is important to note that nursing homes must adhere to both state and federal regulations in order to be eligible to receive Medicaid funding, whereas facilities operating under Oregon's home and community-based services waiver are regulated by the Department of Human Services, Seniors and People with Disabilities Division. Because licensing and regulation of non-Medicaid long-term care facilities in the United States is left to individual states for the most part, facilities within the same category may differ substantially from state to state. For example, assisted living facilities in Oregon are required to provide residents with private rooms, but in other states, residents may share rooms.

All licensed long-term care facilities in Oregon have several attributes in common. For instance, all long-term care facilities licensed to operate within the state undergoes periodic inspections or "surveys" to ensure each facility continues to comply

with the standards set forth in Oregon's Administrative Rules. Each facility's survey results are public record, and facilities are required to provide copies of the most recent survey results upon request (Oregon Department of Human Services, n.d.). Long-term care facilities licensed in Oregon must also offer the following services: three meals a day and snacks, housekeeping, laundry, 24-hour supervision, planned activities, assistance with medications, and assistance with activities of daily living (e.g., bathing, dressing, using the toilet, and eating). Additionally, facilities must provide assistance finding transportation, assistance with confusion or forgetfulness, and sufficient staff to meet residents' needs (Oregon Department of Human Services, 2007). Certain services, such as meals and basic housekeeping, are often included in basic monthly fees, whereas other services, such as laundry and medication assistance, may result in additional charges. Staff members at all facilities are also required to pass a state criminal background check. A brief description of each type of group living facility licensed in the state of Oregon follows.

Skilled nursing facilities. A skilled nursing facility is typically a hospital-like setting in which residents typically share a room and a common bathroom, although private rooms may also available. Nursing facilities provide the most comprehensive care of all the facility types, including 24-hour nursing care by licensed staff, post-hospital care and, rehabilitation and restorative treatments by licensed physical therapists, speech therapists and occupational therapists. Nursing facilities are regulated by both federal and state laws and are the only facility type required to provide 24-hour nursing services, physical rehabilitation and restorative services. Nursing facilities are most appropriate for

people who need 24-hour medical oversight and a protective/structured setting. Residents may have medical and behavioral needs that cannot be met in other care settings. Most residents must share their room. Living space is limited, but residents are allowed to bring personal items to encourage a more home-like atmosphere.

Alzheimer's care units. These facilities, also called “endorsed units” because they require an endorsement from the state on the facility license, specialize in providing care only to persons with Alzheimer's disease or other types of memory impairment. These facilities may be free-standing, or they may occupy a wing or floor of an assisted living or residential care facility. Oregon Administrative Rules direct Alzheimer’s Care Units to provide residents with “positive quality of life, consumer protection, and maximum individualized care that promotes rights, dignity, comfort, and independence in the least restrictive environment” (Oregon Administrative Rules (OAR) 411-057, p. 1, 1993). Alzheimer’s care units feature secure areas that alert staff if a resident has exited, interior finishes that are well lit and non-glare, and visual contrast between floors, walls, and doorways. They are also required to have a secure and safe outdoor area that provides outdoor freedom to residents. Programmatically, these settings must include gross motor activities, self-care activities, social activities, craft activities, sensory enhancement activities, and outdoor activities (Oregon Department of Human Services, 2009).

Adult foster homes. Adult foster homes in Oregon offer personal and health care to five or fewer individuals in private or purpose-built residences. Care and supervision are provided to maintain a safe and secure setting. Although all adult foster homes are required to provide 24-hour supervision and assistance by staff, support with daily living

activities, and help with personal care, adult foster homes may provide different levels of care depending on their individual licenses. Generally, staff in adult foster homes are not licensed nurses, but some homes may provide care by licensed nurses. People often choose adult foster care because it is more affordable than other facility-based care options and because care is provided in a non-institutional, homelike setting (Oregon Department of Human Services, 2009). All adult foster home providers and primary caregivers must pass a criminal record check, complete a basic training course and pass a state examination, and be considered physically and mentally able to provide care. Further, the physical plant of the home in which care is provided must meet the state's structural and safety requirements.

Continuing care retirement communities. Continuing care retirement communities offer a continuum of care which often includes some type of independent living residences, an assisted living or residential care facility, and a skilled nursing facility. Some continuing care retirement communities may also have a specialized residence for people with Alzheimer's disease or a related dementia. Continuing care retirement communities are required to register with the state and disclose specific information about the services they provide and their finances, but only a nursing facility, residential care or assisted living facility located on the campus must be licensed by the state.

Residential care facilities. Residential care facilities are similar in many ways to assisted living facilities. They provide housing and supportive services for six or more residents who do not require 24-hour nursing care. Unlike assisted living facilities,

however, residential care facilities offer both shared and private rooms and bathrooms, and they may or may not provide kitchenettes. Residential care facilities are not required to have licensed nurses on staff for a specific number of hours per week, and staff nurses do not typically provide hands-on personal nursing care. Staff to resident ratios in residential care are typically lower than those required for nursing homes, and duties and qualifications of direct care workers vary among facilities. Direct care workers in residential care are not required to be certified, although training prior to providing services to residents is mandatory in all residential care facilities.

Assisted living facilities. Based on the idea of a social model of care that is as close to "normal life" as possible (Reinardy & Kane, 2003), Oregon's assisted living facilities are directed to provide, "A program approach…to promote resident self-direction and participation in decisions that emphasize choice, dignity, privacy, individuality, and independence" (Oregon Administrative Rules (OAR) 411.054, p. 5, 2009). These facilities provide housing and supportive services, such as congregate meals and activities, for six or more residents. Assisted living facilities provide private apartments with kitchenettes and private bathrooms, and they must be completely wheelchair accessible, including having accessible showers. According to the Oregon Department of Human Services (2009), assisted living facilities are best suited for individuals who want to maintain as much independence as possible and who are able to direct their own care. Over time, even as individuals become frailer and "age in place," assisted living facilities are encouraged to allow residents to remain, as long as they do not require skilled nursing care (Eckert et al, 2009). Although assisted living facilities are

not required to have licensed registered nurses on staff 24-hours-a-day, and direct care workers in these facilities are not required to be certified, direct care worker training prior to providing services to residents is mandatory.

Recent Developments in Long-Term Care

The following subsection focuses on the inception and evolution of the culture change movement, a recent and important development within the long-term care industry. Arguably, the two groups most affected by long-term care are those who live in long-term care facilities and those who work in these facilities. Therefore, this subsection also provides a brief overview of characteristics associated with both the "typical" assisted living resident and the typical direct care worker.

The culture change movement. The term "culture change" has recently become popular in the realm of long-term care, but researchers such as Kane (2001) question whether true systemic change is really occurring. The next subsection focuses on the history of the culture change movement, its operational components, several models of culture change that have received positive attention, and the challenges faced by facilities embarking on culture change efforts.

In 1997, a small group of long-term care professionals, who later called themselves the Pioneer Network, gathered to advocate for what they called, "a radical change in the culture of aging" (Pioneer Network, November 21, 2009). They believed that older people should live in environments in which they are respected as individuals, where they are recognized for their contributions, and where they are able to make their own choices. They felt that in order to accomplish these ideals, the entire culture of aging

needed to be refocused away from institutional models of care and toward, more flexible, consumer-driven models in which care was provided according to the preferences of the older person and in which relationships between older adults and their caregivers were of paramount importance. According to Rahman and Schnelle, "culture change is a process, and as such, the term connotes a transformation… that goes beyond superficial changes to an inevitable reexamination of attitudes and behavior, and a slow and comprehensive set of fundamental reforms" (p. 142). Three central tenets are essential to culture change: 1) person-directed care; 2) staff empowerment; and 3) regenerative environments.

Person-directed care, which has also been referred to as person-centered care, individualized care, consumer-directed care, consumer-centered care, patient-centered care, and relationship-centered care, emphasizes the central role of the older adult in his or her own care choices and daily routines (Rabig, Thomas, Kane, Cutler, & McAlilly, 2006). Person-directed care also acknowledges the importance of knowing and being responsive to each resident's individual characteristics and family situation; viewing each resident from a biopsychosocial framework, as opposed to simply treating his or her medical condition; providing care that respects each resident's values, preferences, and needs; emphasizing residents' freedom of choice and working to balance risk with autonomy; fostering relationships with residents that are consistent and build trust over time; providing each resident with comfort, both physically and emotionally; and involving each resident's social network in appropriate ways (Talerico, O'Brien & Swafford, 2003) Person-directed care highlights the importance of residents making decisions as to when and how their care and services are delivered. For example, person-

directed care dictates that residents go to bed and wake according to personal preference, and assistance with bathing (Rader, Barrick, Hoeffer, Sloane, McKenzie, Talerico, et al., 2003), eating (Nijs, de Graaf, Siebelink, Blauw, Vanneste, Kok, et al., 2006), and other activities of daily living is given according to resident choice.

Staff empowerment refers to the idea that direct care workers are valued members of the care team and that their knowledge, experience, and contributions should be valued. Moreover, their views should be considered when policies, procedures, and care plans are developed. To this end, staff empowerment includes the notion of flat organizational structures, rather than the top-down management style associated with many facilities. Permanent or consistent assignment, in which a direct care worker consistently assigned to care for one resident, may play a role in empowering staff. While some research on consistent assignment is inconclusive (Burgio, Fisher, Fairchild, Scilley, & Hardin, 2004), many studies have indicated benefits to this type of staffing, including increased staff accountability and decreased turnover (Campbell, 1985), increased job satisfaction (Goldman, 1998), and a greater sense of self-efficacy among care workers (Cox, Kaeser, Montgomery, & Marion, 1991; Teresi, Holmes, Benenson, Monaco, Barrett, Ramivez, et al, 1993). Consistent assignment has also been associated with residents' increased feelings of personal control and choice, a decrease in disruptive behavior among residents, and increases in resident health outcomes (Patchner & Patchner, 1993).

Regenerative environments are settings in which both empowered frontline staff and residents can flourish, and where residents experience enhanced quality of life.

Regenerative settings are made to feel as homelike as possible, often incorporating plants, animals, and opportunities for intergenerational interaction. Public or common areas are comfortable and easily accessible to encourage socialization, and furnishings are designed to feel homelike rather than institutional. Residents' friends and family are encouraged to visit at anytime rather than during specific visiting hours. Although the majority of the research refers to culture change within nursing home environments, advocates emphasize the fact that culture change can occur within any type of long-term care facility.

Models of culture change. Although many notions of culture change exist, two models of culture change have gained notoriety and been replicated in facilities in various parts of the country. They include the Eden Alternative (which is now called the Green House Project; Thomas, 2003) and the Wellspring Model (Kehoe & Van Heesch, 2003). Both project LEAP and the Better Jobs Better Care initiative approach the issue of culture change from a workforce standpoint. Although all of the aforementioned models concentrate on different aspects of culture change and the emphasis of each model is slightly different, they are all designed to promote well-being for staff and residents, thereby improving quality of life and quality of care.

The Eden Alternative/Green House Project was developed to combat the boredom and loneliness they observed in nursing home environments (Thomas, 2003). The Eden Alternative was developed with the idea of creating small, intentional communities called "green houses" that include plants, pets, children and only six to ten residents per home. The Green House concept is based on "meaningful relationships built on equality,

empowerment, and mutual respect; where people want to live and work; and where all are protected, sustained, and nurtured without regard to the ability to pay" (NCB Capital Impact, 2009). In this model, large staffing hierarchies are replaced with small staffing teams, and direct care workers often work together to create their own work schedules. This method of staffing stands in stark contrast to the practice of employing a full-time scheduler, which is common in many nursing homes. Residents in green houses are integrated into everyday routines, often walking the dogs, watering the plants, or feeding the birds. This model has gained a great deal of notoriety recently, including mention in a recent Senate Finance Committee white paper on healthcare reform (Senate Finance Committee, 2009).

The Wellspring model, initially developed by a coalition of nursing facilities in Wisconsin, emphasizes evidence-based clinical practice, person-directed care, and staff empowerment by providing education, guidance, and assistance to nursing homes interested in pursuing culture change (Kehoe & Van Heesch, 2003). Three primary tenets are the focus of the Wellspring model: 1) Care decisions need to take place closest to the resident; 2) A substantial knowledge base is required by all staff to enable participation in decision making; 3) An empowered workforce increases resident and employee satisfaction and reduces staff turnover (Wellspring Institute, 2005). One of the strengths of the Wellspring approach is that it enables nursing homes to affect culture change within their existing physical plant and wherever they are along the continuum of change. Member facilities pay a monthly fee to cover the costs of qualified consultants who assist the facilities in implementing research-based practices. Rather than emphasizing

competition, facilities involved in the Wellspring model share resources and benefit from each other's experience. Wellspring has received acclaim from researchers such as Stone and Reinhard (2001), who state "The dual focus on changes in clinical practice and changes in nursing home culture distinguishes the Wellspring model" (p. 1).

Project LEAP (Hollinger-Smith, Lindeman, Leary, & Ortigara, 2002), which stands for Learn, Empower, Achieve, and Produce, is a workforce development program aimed at educating, empowering, and retaining staff in nursing homes and building bridges between nurses and nursing assistants. LEAP includes training for both nurses and nursing assistants, as well as a two-level nursing assistant career ladder that allows nursing assistants opportunities for advancement greater responsibility, mentoring, and small pay raises. The initial step in the LEAP process is an assessment of the organization and its management to determine its management style, readiness for learning, and capacity to implement and sustain LEAP, and the success of LEAP is contingent on the commitment of top management to promote and sustain the program throughout the facility. Thus far, LEAP has been associated with significant reduction in nurse and nursing assistant turnover rates and significant improvements in work empowerment, job satisfaction, and sense of organizational climate (Hollinger-Smith and Ortigara, 2004).

Low wages, few benefits, and little room for advancement have contributed to challenges for providers in recruiting and retaining direct care workers in long-term care (Stone & Weiner, 2001), and without a quality workforce, culture change cannot occur. In 2008, the Institute of Medicine concluded that the future health care workforce "will be woefully inadequate in its capacity to meet the large demand for health services for

older adults if current patterns of care and of the training of providers continue" (p. 29-30). Workforce shortages have already been implicated as one culprit in quality of care issues facing long-term care consumers (Stone, Dawson, & Harnahan, 2003). To address concerns in the policy and practice of recruiting and retaining direct care workers, the Better Jobs Better Care initiative was initiated.

Funded by The Robert Wood Johnson Foundation and The Atlantic Philanthropies and administered by the Institute for the Future of Aging Services, the national Better Jobs Better Care initiative was developed to "bring about changes in policy and practice that would lead to improved recruitment and retention of high-quality direct care workers in nursing homes as well as in home- and community-based settings" (Yallowitz & Hofland, 2008, p. 14). Of the 200 proposals submitted, five demonstration projects were funded in five different states: Iowa, North Carolina, Oregon, Pennsylvania, and Vermont. Each of the states developed a coalition that included one or more of the following: state agencies, trade associations, consumers, direct care workers or organizations that represented them, and an educational institution (Kemper, Brannon, Barry, Stott, & Heier, 2008). Projects focused on a variety of practice interventions, including management training, team building, peer mentoring, and skill development, as well as policy-related goals, such as examining wages and benefits, creating initiatives for job redesign, designing curriculum and credentialing, working with professional associations, and promoting awareness of public policy.

Across states, participating direct care workers (N = 3,468) were asked to identify the most important thing their employer could do to improve their job as a direct care

worker (Kemper, Heier, Barry, Brannon, Angelelli, Vasey, & Anderson-Knott, 2008). Across settings, workers asked for better pay, as well as improved work relationships, including better communication, supervision, and appreciation, as well as more respectful treatment and to being listened to more often. Within assisted living workers in particular (N = 473), 36% requested increased compensation, with 19% requesting better work relationships, and 10% requesting better staffing (Kemper et al., 2008). Although improving job conditions for direct care workers in long-term care may not single-handedly improve residents' quality of life, research indicates that more person-centered workplaces are conducive to caregivers who are more satisfied with and committed to their jobs and, in turn, work to provide better care and enhance the quality of life of residents (Barry, Brannon, & Mor, 2005; Castle & Engberg, 2005; Sikorska-Simmons, 2005; Tellis-Nayak, 2007).

Within the state of Oregon, the Better Jobs Better Care initiative resulted in the development of the first person-directed care measurement tool designed to measure success regarding person-directed care and to aid in determining person-directed care's potential impact on resident outcomes. This tool measures staff perceptions about six central dimensions of person-directed care, including, knowing the person, providing comfort care, facilitating resident autonomy, honoring personhood, and supporting relations (White, Newton-Curtis, & Lyons, 2008). The latter category, supporting relations, is of particular interest to the present study. Although the scale is still new, these preliminary findings may provide some insight into the ways in which social

relationships and interactions with others may impacted or be affected by dimensions of person-directed care.

Although the aforementioned culture change models offer a glimpse of what long term care can become, there are substantial challenges involved in embarking upon systemic culture change. Talerico and colleagues (Talerico et al., 2003) cite a lack of leadership acceptance, outdated or inappropriate facility policies, and use of standardized assessments that may offer an incomplete picture of a person's needs as barriers to achieving person-directed care. Additionally, despite widespread endorsement of organizational culture change (CMS, 2005), facilities may still be hesitant to undergo such efforts for fear of citations from state regulators. Regulations are often worded ambiguously, and facility operators are inclined to continue with the status quo rather than risk receiving citations for misinterpreting vaguely worded regulations. Additionally, investors and operators of long-term care facilities may still hold the perception that culture change is finically unfeasible. Many providers make the assumption that that providing personalized care is much more time-intensive (and thus, expensive) than adhering to the "industrialized, assembly line model of care" (Talerico, et al., 2003, p. 15) that occurs when tasks, strict schedules, and institutional routines are given priority over fostering meaningful interactions and trust between residents and staff . Research indicates, however, that culture change efforts may reduce direct care staff turnover, thereby actually saving the approximately $3800 it costs to replace a nursing assistant (Pillemer, 1996). Finally, culture change is a lengthy and often arduous process. It involves an organization making a long-term commitment to consistent training,

reinforcement of a new cultural norm, and constant questioning of accepted practices. Further, it may also involve some initial staff turnover, as well as negative changes in a building's census as residents comfortable with the status quo may disagree with changes being implemented.

Assisted Living Residents

Because this study involves older adults who reside in assisted living settings in the Portland, Oregon metropolitan area, it is important to understand the profile of a "typical" assisted living resident. The average assisted living resident is 86.9 years old (female average age, 87.3; male average age, 85.7; ALFA, 2009), and 54% of residents are aged 85 and over (Caffrey, Sengupta, Park-Lee, Moss, Rosenoff, & Harris-Kojetin, 2012). Most (76.6%) assisted living residents are widowed, although 12.5% are still married, 6% are divorced, and just under 5% have never been married. There are about three times as many female residents as male residents (ALFA, 2009). Generally, residents of assisted living facilities are less impaired than those in nursing home facilities, who typically require more assistance with activities of daily living (ADLs) and need daily nursing care or monitoring (Hawes, Phillips, & Rose, 2000). Of the five ADLs considered in a 2009 Assisted Living Federation of America study (bathing, dressing, toileting, transferring, and eating), residents most frequently needed help with bathing (64%) followed by dressing (39%), toileting (26%), transferring (19%), and eating (12%). Assisted living residents have better perceived health and lower prevalence of chronic diseases than do nursing home residents, but they do still use hospital care frequently. Annually, approximately 32% are admitted for inpatient hospitalization, and

24% use emergency services (Hawes, Phillips, & Rose, 2000). Over 80% of residents in assisted living also receive medication assistance, and researchers estimate that between 38% (ALFA, 2009) and 67% (Rosenblatt, Samus, Steele, Baker, Harper, Brandt, Rabins, & Lyketsos, 2004) of assisted living residents are cognitively impaired.

The average length of stay for residents in assisted living is about 28 months, with an average yearly turnover of 42% per building (ALFA, 2009). The greatest proportion of men move into AL communities between the ages of 80 and 84, while the greatest proportion of women move in between the ages of 85 and 89. In almost three-quarters of the cases, residents are either entirely or partially responsible for making the decision to move into an assisted living facility (ALFA, 2009). Other than the resident, the most common decision maker is usually the resident's adult child or another family member. The majority of assisted living residents move directly from their homes (ALFA 2009) or from other settings of less formal care, such as retirement apartments or other assisted living settings, as opposed to being admitted directly after a hospital stay (Reinardy & Kane, 2003). More than 60% of the time, residents relocating to an assisted living facility move fewer than 10 miles from their previous permanent residences, and 80% of residents choose facilities within 25 miles of their closest family members. When residents move from assisted living, they typically move to a higher level of care such as a nursing home (Phillips, Munoz, Sherman, Rose, Spector, & Hawes, 2003), although some assisted living facilities accommodate a range of residents' needs as they age in place, including services that may be delivered in a skilled nursing facility.

In terms of frequency of visitors from outside of the facility, 10% of assisted living residents report receiving visitors on a daily basis, 38% receive visitors several times a week, 35% receive visitors once a week, and 15% receive visitors once a month (ALFA, 2009). It is also notable that while less than one-third of assisted living communities provide a common pet, more than two-thirds of communities allow residents to have a personal pet such as a cat, dog, or bird.

Direct Care Workers

Although residents living in long-term care settings may interact with activity professionals, housekeepers, dietary or dining staff, maintenance and facilities staff, and administrators, it is their relationships with direct care workers that are often cited as having the greatest impact on a resident's quality of life (Health Resources and Services Administration, 2009). Therefore, it is helpful to understand characteristics of direct care workers that may impact their social interactions with residents.

Direct care workers are staff members who provide personal care and assistance with activities of daily living (e.g., bathing, dressing, using the toilet, and eating) to older adults in long-term care settings. They have the most "face time" with residents, providing 70% to 80% of paid care residents receive (Paraprofessional Healthcare Institute (PHI), 2009). Direct care workers (DCWs), whose average age is 41(PHI, 2009), numbered approximately 2.7 million, or 2% of the American workforce, in 2006 (Smith & Baughman, 2007). The title "direct care worker" may refer to nursing assistants, resident aides, personal care assistants, or other titles given to those workers who provide most of the personal care given to residents in long-term care facilities (Stone & Weiner,

2001). Home health aides and personal care workers who provide care within individuals' homes are also considered direct care workers. Although much of the literature on direct care workers comes from the nursing home literature, job responsibilities of direct care workers in many facility-based long-term care settings are similar. These responsibilities include assisting with personal care and activities of daily living, monitoring changes in condition, preparing and/or serving meals, providing housekeeping services, assisting persons with memory loss, measuring vital signs, and in some cases, administering medications. Direct care work occurs in shifts, which are usually broken into a day shift, an evening shift, and an overnight shift. Because many residents are asleep during night shift hours, direct care workers on the day and evening shifts frequently have more contact with residents (Burgio et al., 2001).

Eighty-eight percent of direct care workers employed in nursing homes are female (PHI, 2009), 28% are single mothers, and half have children under the age of 18 (Smith & Baughman, 2007). In terms of race and ethnicity, 52% of direct care workers are considered minorities, 32% are black, non-Hispanic, 14% are Spanish, Hispanic, or Latino, and 21% are foreign-born. Fifty-eight percent of direct care workers have no education beyond high school, with 48% having attended some college or obtaining an advanced degree (PHI, 2009). The median hourly wage for all direct care workers in 2006 was $10.22, almost $5 less per hour than the median wage for all U.S. workers (PHI, 2009).

Summary. With a basic understanding of the history of long-term care, the evolution of assisted living in particular, a basic knowledge of the characteristics of

residents and staff members who live and work in assisted living facilities, and the recent focus on person-directed philosophy, it is possible to begin to appreciate the circumstances in which social interactions involving assisted living residents may occur. Whereas interactions between residents may occur most often during mealtimes or scheduled activities, interactions between residents and direct care workers are likely to transpire during care routines in the privacy of a resident's room.

The next section will explore literature related to social interactions and examine the psychological ramifications of these interactions for older adults. Following the section on social interactions, a subsequent section will explore the social function of humor and the potential impacts of social interactions involving humor in long-term care settings.

Literature Pertaining to the Study of Social Exchanges

In this section, I will review literature related to social relationships and how they may contribute to, or detract from, emotional well-being. Following this section, I will discuss social interactions involving humor and how they, in particular, may also impact emotional well-being.

Social relationships foster a sense of belonging (Durkheim, 1951), as well as impact daily mood (Clark & Watson, 1988). Newsom, Rook, Nishishiba, Sorkin, and Mahan (2005) explain, "people seek social bonds for the intrinsic satisfactions they afford, such as shared leisure, humor, and other forms of pleasurable interaction" (p. 310). The mere presence of social contact is not, in itself, enough to ensure psychological well-being, however. Although research on social interactions offers abundant

information on the benefits of support, scholars have recently begun to investigate the negative impact of harmful or hurtful social interactions that create social strain. Additionally, relatively few studies about social interactions have involved older adults living in long-term care settings, and even fewer have fully examined the impact of negative exchanges on residents' mental health. Consequently, much remains to be learned about the way social interactions impact the daily lives and psychological well-being of long-term care residents. The following review includes relevant research on both supportive or positive and harmful or negative interactions; how they are defined, categorized, and measured; and their associations with mental health and well-being. The section concludes with implications of this research for long-term care residents and their social interactions with direct care workers and others prevalent social network members.

Defining and Measuring Social Exchanges

Social relations have been measured in a variety of ways. While providing a comprehensive review of all methods of assessing the multiple facets of social relations is beyond the scope of this review, this section will provide a brief overview of some important concepts related to quantifying various aspects of these relationships.

The first concept requiring clarification surrounds the use of the term "social exchange." Recently, some scholars have shifted their research focus toward studying the ramifications of social interactions that are hurtful or harmful. As a result, the term "social exchange" has been adopted by some researchers to describe social interactions involving not only the provision of support, but also including interactions that result in increased social strain (Krause & Rook, 2003). The term "social exchange" is a neutral,

encompassing term that covers both supportive and destructive social interactions. Positive social exchanges refer to interactions that are intended to provide social support or help, whereas negative social exchanges describe hurtful or harmful interactions or affronts. Throughout this review, the terms “social exchange” and “social interaction” will be used interchangeably. It is also important to distinguish between structural and functional measures of social exchanges (Due, Holstein, Lund, Modvig, and Avlund, 1999).

Structural measures. *Structural* measures of social exchanges usually involve some type of social network analysis to determine an individual’s level of social integration. Social networks may be evaluated according to their overall size, the amount of contact each member of the network provides the individual, the type of support each member provides, the interconnectedness among members, and the degree of reciprocity in relationships between the individual and various network members (Uchino, 2004). Network structure is generally studied in terms of the number of social relations that an individual has, the frequency with which they interact with network members, and the reciprocity of social relations. One example of the value of structural measures is Kahn and Antonucci’s (1980) convoy model of social relationships in aging, which acknowledges the need for a social network that provides a protective shield of support as an individual ages. In order to achieve this shield, older adults are likely to prioritize their needs and decrease the number of peripheral ties in order to focus limited energy on network members they find most meaningful or supportive (Lang & Carstensen, 1994).

Cohen and Wills (1985) found that structural measures of social relations were more likely to be associated with health promoting effects because social embeddedness seems to provide a general sense of stability and well-being. For example, researchers associated with the MacArthur Studies of Successful Aging (Unger, McAvay, Bruce, Berkman, and Seeman, 1999) examined social network size as a predictor of functional decline. Conversely, Aartsen and colleagues (Aartsen, van Tilburg, Smits, & Knipscheer, 2004) used cognitive and functional decline as predictors of changes in network size. Recently, researchers (Fiore, Smith, & Antonucci, 2007) used data from the Berlin Aging Study to identify six different network types or "constellations" and their association with well-being. Because the present study is focused on functional measures of social exchanges, additional issues related to structural measures will not be addressed here. A recent review of structural measures related to social integration may be found by Brissette and colleagues (Brissette, Cohen, & Seeman, 2000), however.

Functional measures. Whereas structural measures of social relations focus on individuals' social networks and social embeddedness, *functional* measures deal with the function or type of support received from each social tie, the frequency of the support received, and the perception of available future support (Uchino, 2004). In essence, functional measures of support are used to examine the "relational content" of each social tie (House, Umberson, & Landis, 1988). In some cases, a subjective appraisal of social interactions is also involved (Newsom, Nishishiba, Morgan, & Rook, 2003; Newsom et al., 2005). Subjective appraisals involve a respondent reporting his or her feelings of satisfaction or distress about those interactions. Acquiring subjective appraisals allows

researchers to compare the relative impact of different types of social interactions, as well as the frequency, on health and well-being. In fact, some studies indicate that an individual's perceptions about support provided are more strongly related to well-being than the actual amount of support received (Barrera, 1986; Sarason, Sarason, & Pierce, 1990).

Cohen and Wills (1985) surmised that functional measures of social ties were more likely to be associated with protection or buffering from stressors than structural measures, and research also indicates that functional measures of social interaction appear to be more strongly related to psychological distress than structural aspects of social interaction, such as the number of social network members who provide support (Blazer, 1982; Finch, Okun, Pool, & Ruehlman et al., 1999; Newsom & Schulz, 1996; Sarason, Pierce, & Sarason, 1990). Before delving further into research related to functional measures of support, however, it is important to distinguish between two dimensions of functional support: perceived support and received or enacted support. *Perceived support* involves an individual's perception of the availability and sufficiency of future support (Barrera, 1986), whereas *enacted support* refers to an evaluation of previously provided support (Barrera, 1986). Although these two dimensions are not necessarily correlated (Barrera, 1986; Dunkel-Schetter & Bennett, 1990), they do correspond more in close relationships (Antonucci & Israel, 1986). They are also more highly correlated when the person receiving the support has recently experienced a stressful life event (Cutrona, 1986).

Although the provision of support is certainly beneficial in many cases, the perception of available support in the future appears to be a more powerful resource for coping. Sarason and Sarason (1986) found that the mere reassurance of support predicted better performance on a laboratory task, and Uchino and Garvey (1997) found that just the availability of support (without actually receiving support) with a speech task lowered respondents' rates of cardiovascular reactivity. There are several explanations that may shed light on why perceived support appears to be a more potent source of well-being than enacted support. Barrera (1986) suggests that those reporting greater levels of enacted support do so because they are under greater stress in the first place and thus, have more to cope with. Failed attempts at support may also result in individuals being less satisfied with enacted support (Uchino, 2004). As was mentioned earlier in this section, attempts at support may be offered at the wrong time or in the wrong way, creating dissonance between the provider's intention and the receiver's appraisal. Finally, asking for support may result in an individual feeling of personal incompetence and lower self-esteem (Nadler & Fisher, 1986).

Simply highlighting the coping effects of perceived support, however, oversimplifies the complexity of the relationship between social support and well-being. The type or domain of support enacted also plays a role in predicting well-being. For instance, research by Finch and colleagues (Finch, Barerra, Okun, Bryant, Pool, & Snow-Turek, 1997) suggests that enacted tangible and informational support are associated with increased depression, companionship or belonging are associated decreased depression, and emotional support did not predict depression. Similarly, Pennix and colleagues

(Pennix, van Tillburg, Kreigsman, Deek, & van Eijk, 1998) found that tangible support predicted increases in depression; however, in their study, emotional support predicted decreases in depression. The domain-specific effects of social support may be explained by the matching hypothesis, which suggests that different stressors are best ameliorated by specific types of support (Cohen & Wills, 1985). Specifically, support from the emotional and informational domains appears to be well suited to many different types of stressors, as this combination appears to provide both an endorsement of self-worth and useful facts or advice.

The central focus of this study is to examine the how long-term care residents' perceptions of their social interactions affect their psychological health. Thus, functional measures are of primary interest in the present study, and research reviewed in this section will focus primarily on studies that employ functional measures of social relations.

Measuring social exchanges in long-term care. A unique set of challenges accompany research in long-term care, with one primary challenge being the number of residents with cognitive impairment in such settings. Newsom and colleagues (Newsom, Bookwala, & Schultz, 1997) note that although the presence of cognitive impairment among long-term care residents may discourage some researchers from attempting to measure social exchanges in long-term care settings, other researchers have achieved high reliability from self report measures of physical functioning and depression among this population (Brod, Stewart, Sands, & Walton, 1999; Feinberg & Whitlatch, 2001). Researchers may also experience challenges gaining access into long-term care facilities

and receiving consent form residents who may be weary of an outsider asking questions that may seem personal. As a result of these challenges, data collected from long-term care settings is often incomplete or lacks validity.

For example, each of the four domains of positive and negative social exchanges are distinct and empirically different from one another (Barerra, 2000) and may serve different functions in terms of coping with stressors; however, many of the measures that have been used in long-term care settings thus far do not distinguish between these domains (Newsom et al., 1997). The lack of specificity leaves many unanswered questions about the functions and outcomes of different types of support, as well as how support may differ when provided by other residents versus staff. Items related to negative exchanges, too, are conspicuously absent from measures that have been used with institutional samples, despite the disproportionately strong influence negative exchanges appear to exert on the psychological health of older adults (Finch et al., 1999; Rook, 2001).

Additionally, a recent review found that many scales employed to measure social ties or social interactions lack psychometric data for an institutionalized population, and many fail to meet acceptable reliability standards (Newsom et al., 1997), indicating that existing measures that have been previously used in institutional settings may also benefit from improvement, given the current state of knowledge about positive and negative social exchanges. Levin (2000) concurs, pointing out that there is no “gold standard” for measuring the various aspects of social functioning. Kane (1987) also notes the importance of measuring not only the current levels of social functioning but also a

person's expectations and past patterns of social interaction. While there is no single measurement instrument currently available that accomplishes all of these goals, social exchange researchers still advise against attempting to devise completely new measures. Instead, scholars recommend that future research employ measures previously-tested on community-dwelling samples and adapt them for use in institutional settings (Newsom et al., 1997).

Although an understanding of the current state of social exchange research is crucial, knowledge about the theory behind current practices is also important. The following subsection examines the theoretical issues involved in social exchange research.

Theoretical Underpinnings for Social Exchange Research

One of the earliest scholars to pair social behavior with science was Durkheim (1897/1951), who studied the importance of social integration and social regulation as predictors of suicide. He theorized that individuals' actions were a function of both their embeddedness within a social network and their adherence to social norms. Durkheim found that those with both too little and too much social integration were most likely to commit suicide. Whereas those with too few ties lacked the guidance and social support needed to bind them to social norms, those with too much social integration often lost sight of their identity and sacrificed their lives in the process. Durkheim used the term *anomie* to describe a state of alienation related to a mismatch between an individual and society's rules and norms (Durkheim, 1897/1951). Almost a century later, both Cassel (1976) and Cobb (1976) produced seminal work relating social interactions to health.

Cassel (1976) introduced the idea that social support may be particularly beneficial during times of stress. This notion has become known as the buffering hypothesis, and it will be explained in more detail later in this section. Cobb (1976) used a variety of studies from medical literature to illustrate social support's benefits, both for mental and physical health, and called upon researchers to continue to explore these relationships.

Although health outcomes were not the focus of Weiss's (1973, 1974, 1998) research, he made important contributions to the study of social relationships. Weiss (1974) described six provisions of personal relationships, including attachment, or emotional bonding; reassurance of worth, competence, and value as a person; guidance or advice when needed; reliable alliance and assistance in times of need; social integration, or shared interests, ideals, and goals; and the opportunity to nurture and reciprocate support. In explaining these provisions, Weiss (1974) emphasized that each individual requires a variety of relationships in order to achieve well-being and that while no one relationship can fill an individual's every need, certain close relationships, called "attachments," can fulfill several needs at once. Weiss (1998) later defined two categories of relationships in an attempt to further explain the way certain relationships function differently than others. The first category of relationships, called *attachments*, consists of close relationships marked by exclusivity, persistence, and the "provision of a secure base" (p. 677). Pair-bonds, parental bonds, and bonds with a person who provides guidance are three types of attachment bonds mentioned by Weiss (1998). Conversely, *affiliations* are non-exclusive, somewhat more fragile relationships whose purpose is to

advance some common interest, even if that interest is shared companionship. These include friendships, work relationships, and many kinship ties.

Weiss's (1974; 1998) work is particularly relevant when considering relationships between residents and the direct care workers who provide the majority of care and have a greater amount of "face time" with residents (Frazier, 1995). Recent research indicates that older adults' contact with family and friends decreases by approximately half following admission to a nursing home (Port et al., 2001) and that a move to a residential care home significantly decreases older peoples' contact and material linkages with their primary social network (Bear, 1990). Thus, in many cases, direct care workers may become de facto attachments for residents and, by default, "responsible" for fulfilling many or all of the provisions that might typically be spread across multiple members of a social network. Despite direct care workers' crucial role in the social worlds of residents, little emphasis is placed on helping direct care workers to understand and fulfill their social roles as residents' companions, confidants, and providers of support (Chant, Jenkison, Randle, & Russell, 2001; McGilton, O'Brien-Pallas, Darlington, Evans, Wynn & Pringle, 2003), and few social interactions take place that are not directly related to care (Burgio et al., 2001).

Theoretical Perspectives on Social Exchanges in Older Adulthood

The aforementioned work of Durkheim, Cassel, Cobb, Weiss, and others provided a theoretical foundation for research on social relationships. Gerontological researchers have also developed theories related to the way individuals change throughout the life course and into older adulthood (Baltes, 1987). Both social support theory and

gerontological theory have been influential in discovering new insights into to older adults' social relationships.

Rowe and Kahn (1987) expanded the traditional view of aging as a period of loss and disability, suggesting that many factors, including psychosocial factors, had the potential to improve individuals' ability to age optimally. Baltes and Baltes (1990) suggested that optimal aging was a function of prioritizing goals and pursuits, maximizing remaining strengths, abilities, and resources, and adapting to or compensating for age-related losses. Carstensen (1992) elaborated on the Baltes' theory, relating it specifically to older adults' social systems. *Socioemotional selectivity theory* (Carstensen, 1992; Carstensen, Isaacowitz, & Charles, 1999) explains the decreases commonly seen in older adults' social interactions in terms of the increasing importance of emotion (as opposed to information seeking or self-concept maintenance) in their lives. In other words, as individuals age, they appear to self-limit their interactions to those involving network members who provide emotionally beneficial information or support (Lang, 2000; Lang & Carstensen, 1994).

Although no single theory may account for all of the results achieved in social exchange research, the aforementioned theories have added a structure by which to conduct such research, as well as a means of examining potential interpretations of research findings. The next section will provide more detail on specific aspects of positive and negative social exchanges.

Positive Social Exchanges

The following subsection explores research related to positive or supportive social exchanges, how they are categorized, and avenues by which they appear to impact the health and well-being of older adults.

Domains of positive exchanges. Social exchanges are often categorized into domains according to their function (Kane & Kane, 2000; Uchino, 2004). Cutrona & Russell (1987) developed a scale to assess Weiss's (1974) six provisions of social relationships, (guidance, reliable alliance, reassurance of worth, emotional attachment, social integration, and opportunity for nurturance), offering each as a domain. More recently, however, researchers (Barrera, 2000; Cutrona & Russel, 1990) have narrowed these domains to include *instrumental or tangible support*, the provision of actual physical help or material aid (Heitzmann & Kaplan, 1988); *informational support*, the offering of helpful advice or information (Cohen & Wills, 1985); and *emotional support*, the giving of esteem, comfort, encouragement or other reassurances (Winemiller, Mitchell, Sutliff, & Cline, 1993). A fourth domain, *belonging* (Barerra, 2000, Cutrona & Russel, 1990) *or companionship*, which involves being included in leisure events and activities with friends or family, has also appeared in the empirical literature (Rook, 1987; Rook & Ituarte, 1999; Sorkin, Rook, & Lu, 2002). In fact, one recent finding suggests that positive social exchanges involving companionship may be more beneficial to psychological health than exchanges involving the other three domains (Newsom et al., 2005).

Positive social exchanges have long been associated with positive impacts on mental and physical health (for reviews, see Cohen & Wills, 1985; House, 1987; Kessler

& McLeod, 1985). The buffering hypothesis offers the most widely-regarded explanation of how this may occur.

The buffering hypothesis. The notion that social support could buffer or moderate the effects of life stress originated with Cobb (1976). Several years later, Lazarus and Folkman (1984) theorized that the impact of stress on an individual's coping process is mediated by his or her appraisal of the stressor. Social support, then, is thought to buffer stress by attenuating or preventing a stressful appraisal (Cohen & Wills, 1985). Additionally, stress buffering effects of social support are found more frequently when measures assess subjective, functional aspects of support, as opposed to structural measures that assess social integration. Wheaton (1985) distinguished between stress buffering models in which support may occur before, simultaneously with, or after the impact of stress on mental health, and Barerra (1986) differentiated between measures of support which examine perceived or expected support as opposed to those which examine received or enacted support. Relatedly, in a study of caregivers of persons with Alzheimer's disease, Pagel, Erdly, and Becker (1987) found that caregivers' expectations of assistance from network members affected the degree of satisfaction they experienced with the support they received from those members.

Positive exchanges and health. Positive exchanges affect older adults' emotional health in a variety of ways. They help older adults to maintain a sense of meaning in life (Krause, 2004) and to feel understood and appreciated (Rook, 1987). They also bolster self-esteem (Krause, 1987) and moderate the impact of stressful life events (Chou & Chi, 2001; Krause, 1986). Further, positive or supportive social exchanges appear to replenish

feelings of control and self-worth (Krause & Borowski-Clark, 1994), as well as boost perceptions of the future availability of support (Krause & Liang, 1990). Jang and colleagues (Jang, Haley, Small, & Mortimer, 2002) found that satisfaction with social support both directly affected depression and moderated the relationship between disability and depression in an older adult sample. Krause (2004) further specified the role of stressful life events in a study comparing the effect of stressors on life roles that were highly valued by older adults versus those with less value. Results indicated that stressors related to more salient life roles were more corrosive to older adults' sense of purpose in life but that emotional support often served to attenuate the effects of those stressors.

Research indicates that positive social exchanges appear to be beneficial to physical health as well as mental health. In reviewing extant literature on social support and health, Uchino (2004) found that most studies indicated a positive relationship between support and lower rates of all-cause mortality. For example, data from the Alameda County study of older adults (Berkman & Syme, 1979) indicated that both being married and having a greater number of social ties were associated with lower mortality rates. Several studies have also found connections between social support and immune functioning (Seeman, Berkman, Blazer, & Rowe, 1994; Uchino, Cacioppo, & Kiecolt-Glaser, 1996), as well as social embeddedness and risk of functional disability (Avlund, Lund, Holstein, & Due, 2004).

Of particular interest to this project are studies linking social ties, or the lack thereof, with cognitive functioning. For example, social interaction is associated with

better cognitive functioning across the lifespan (Ybarra, Burnstein, Winkielman, Keller, Manis et al., 2008), with emotionally supportive interactions, in particular, serving to protect against age-related cognitive decline (Seeman, Lusignolo, Albert, & Berkman, 2001). Conversely, loneliness, or a lack of meaningful social interaction, has been associated with an increased risk of cognitive decline (Bassuk, Glass, & Berkman, 1999; Fratiglioni, Wang, Ericsson, Maytan, & Winblad, 2000; Wilson, Krueger, Arnold, Schneider, Kelly et al., 2007).

Negative Social Exchanges

Whereas early research on interpersonal exchanges focused primarily on the social support's beneficial effects, Rook's (1984) seminal study illuminated the power of negative exchanges and sparked researchers' interest in exploring the consequences of such interactions in greater depth. This section reviews literature related to negative social exchanges, how they are classified, and the apparent pathways by which they may impact older adults' physical and mental health.

Domains of negative exchanges. Negative social exchanges, also termed negative or harmful support, social strain, or interpersonal conflict, are interactions with others that are perceived as hurtful or harmful by the receiver. Although positive and negative exchanges are thought to be independent constructs (Rook, 2001), negative exchanges may transpire within parallel domains of social functioning to positive exchanges. Based on domains found to be important in the literature and present in existing measures of social support, Newsom and colleagues (Newsom et al, 2003) developed a measure of social exchanges that included both positive and negative

exchange domains. Extensive work combining qualitative methods, such as focus groups and card-sorting tasks, with quantitative methods, such as confirmatory factor analyses, resulted in a measure that assessed positive domains, as well as the following parallel negative domains: inadequate or unsuccessful attempts at help, unwanted advice, criticisms or expressions of dislike, and exclusion from social activities. The most potent negative exchanges appear to be related to the emotional domain and consist of actions such as expressions of anger or criticism (Newsom et al., 2005).

Salience of negative interactions. Although positive or supportive exchanges have received greater attention in the literature on social relationships, several studies indicate that negative exchanges may, in fact, be more potent forces on mental health (Newsom, et al., 2005; Rook & Pietromonaco, 1987). Attribution theory (Heider, 1858) may provide some insight into the strength of negative interactions on mental health. Attribution theory states that events which seem unnatural or upsetting are weighed more heavily that those that do not, and negative social interactions may be viewed as one form of an upsetting or stressful event. In fact, Zautra and colleagues (Zautra, Schultz, & Reich, 2000) found that even trivial negative events were associated with deleterious effects on older adults' psychological health, despite the fact that they occur less frequently than positive interactions. In fact, research on marital interactions indicates that couples in healthy relationships need to provide five positive interactions to neutralize just one negative interaction (Gottman, 1994).

Lazarus and Folkman's (1984) stress-appraisal-coping model, in which the method of coping with a particular stressor is mediated by the individual's appraisal of

that stressor, may also provide better understanding about the potent influence of negative interactions on mental health. Because negative exchanges appear more salient, they are likely to be appraised as more distressing and, therefore, are more difficult to cope with or overcome. Krause (1994) found that stressors which threaten or jeopardize a person's self-concept or self-esteem, in particular, cause greater distress than stressors that do not. Incongruent relationships, in which a network member's perception about an individual differs from that individual's perception of him or herself, are also more likely to result in problematic interactions (Rook & Pietromonaco, 1987). This may be particularly relevant when considering relationships between direct care workers in long-term care settings, who may view residents they assist as frail or incompetent due to residents' chronic illnesses or impairments, and residents, who, despite needing assistance, still see themselves as capable.

Negative exchanges and health. Social networks and support needs often change as individuals age, and researchers in gerontology have begun to investigate the impact of negative interactions specifically on older adults' mental and physical health. In a study of older widowed women, Rook (1984) found that problematic social ties were associated with lower reported well-being, whereas supportive or neutral social ties were unrelated to well-being. Subsequently, numerous studies established that negative exchanges are associated with creating psychological distress (Antonucci, Akiyama, & Lansford, 1998; Newsom, et al., 2005), low self-esteem (Rook, 1992), less subjective well-being (Trompetter, Scholte & Westerhol, 2011), and dysfunctional attitudes (Lakey, Tardiff, and Drew, 1994). Although negative exchanges do appear to be less stressful when they

occur in tandem with other stressful life events (Rook, 2001), studies suggest that they are nonetheless more salient than positive exchanges (Finch, Okun, Pool, & Ruehlman, 1999; Finch & Zautra, 1992; Rook, 2001). Repeatedly, studies have suggested that positive exchanges appear to contribute to positive affect, but they do not seem to counteract negative affect. Negative exchanges, however, both incite negative affect and corrode positive affect (Rook, 2001).

Additionally, recent research indicates that negative exchanges have detrimental effects on physical health. Ongoing stress can create arousal of physiologic systems (such as the immune system), which when constantly engaged without the opportunity for recovery, can create additional wear and tear on the body. The degree of stress placed on the body due to the chronic and persistent arousal of these systems is called allostatic load (McEwan, 2000). Seeman and McEwen (1996) found that negative exchanges are one form of stressor that may trigger increases in allostatic load, which can then lead to susceptibility for a variety of health risks. Subsequently, conflictual social interactions have been associated with poorer physical health (McQueen, Newsom, & Rook, 2005; Uchino, 2004), poorer self-rated health (McQueen & Newsom, 2006), and poorer cognitive functioning (Seeman, Lusignolo, Albert, & Berkman, 2001). Thus, information about the types of social interactions that may reduce allostatic load could lead to changes in the way interactions occur during care routines in institutional environments for older adults.

Failed attempts at support. Negative interactions can also occur when a well-intentioned caregiver's attempts at support fail, only to be perceived as unhelpful or

intrusive. Such negative reactions to assistance may occur for several reasons, and researchers are just beginning probe more deeply into the nature of these kinds of responses.

Lakey and colleagues (Lakey & Cassidy, 1990; Lakey, Moineau, & Drew, 1992) recognized that the effects of social support were only partially attributable to actual enacted support. In samples of college-age respondents, Lakey and Cassidy (1990) found evidence that a substantial proportion of the effects of support could be explained by individuals' cognitive personality variables, or the stable "schemas" surrounding their own perceptions of support. Specifically, individuals reporting high levels of perceived support rated hypothetical situations as more supportive than their counterparts who reported low perceived support. In a later study, Lakey et al. (1992) found that those with low levels of perceived social support also experienced greater dysphoria, lending credence to the idea that thoughts about others and thoughts about the self are inextricably linked (Higgins, King, & Mavin, 1982).

Other factors may also impact the way in which support is viewed. For instance, help might be provided at the wrong time, in the wrong way, or in inappropriate amounts by a caregiver (Newsom & Schulz, 1998). Additionally, individuals who receive physical assistance may view the help as indicating their own inadequacy or as a reminder of their increasing frailty (Fisher, Nadler, Whitcher-Alagna, 1982; Seeman, Bruce, & McAvey, 1996). In some studies, care recipients have reported feelings of incapability or negative self-attributions in response to help they receive (Turk, Kerns, & Rosenberg, 1992).

Existing research also indicates that both the level of self-esteem of the care recipient (Lakey, Tardiff, & Drew, 1994; Clark & Stevens, 1996) and the type of relationship the care recipient has with the care provider (Wills, 1991) may impact the likelihood of care recipients responding negatively to assistance. Newsom and Schulz (1998) found that nearly 40% of a sample of over 250 physically disabled older adults reported negative reactions to some type of assistance provided by a caregiving spouse. Krause (1995) suggests that there are limits to the stress-reducing effects of assistance and that exceeding those limits may actually increase psychological distress rather than attenuate it. In fact, growing number of studies suggest that older adults who receive assistance from a spouse or adult child do not always respond favorably to the help they receive and that these instances have detrimental impacts on older adults' mental health. (Silverstein, Chen, & Heller, 1996).

The effects of failed support from formal caregivers have not been explored in detail, however. Further, no studies to date have investigated the impact of paid caregivers' failed attempts at support on long-term care residents. One issue that may play a role in residents' perceptions of support is the cultural divide between many long-term care residents and the paid care workers employed in many long-term care facilities. Approximately 20 percent of direct care workers in the 2005 American Community Survey were foreign-born; however, the proportion of older adults in the United States was nearly 90 percent native-born (Leutz, 2007). Further, research indicates that norms and attitudes surrounding death and dying (Hayslip & Peveto, 2005), the expression of emotion (Huttlinger, 1996), and respect for elders (Sung, 2001; Sung, 2002) often vary

substantially between different cultural groups. As a result, the ways in which ethnically diverse direct care workers initiate and respond to social interactions with residents may differ from native-born residents' expectations, thereby creating a social environment conducive to misunderstanding or miscommunication (Stone & Dawson, 2008).

Social control. Another source of conflict for residents in institutional settings relates to social control. Social control refers to well-intentioned actions that are intended to improve another person's health behavior (Rook & Ituarte, 1991). Social control can have beneficial effects on health behaviors while simultaneously creating negative affect (Hughes & Gove, 1981). Consider the situation of a care worker who pressures a resident to take her blood pressure medicine. Although the care worker's reminders may be emotionally aversive for the resident, they may also increase the regularity with which the resident takes her medication, thereby having a positive impact on her physical health.

The way in which social control occurs can also have a notable impact on the recipient's mental health. For example, in a recent longitudinal study examining the effects of social control, Stephens and colleagues (Stephens, Fekete, Franks, Rook, Druley, & Greene, 2009) compared total knee-replacement patients whose spouses used persuasion, (a form of positive social control) to encourage adherence to post-surgical adherence with those whose spouses used pressure (a negative form of social control) Results indicated that while both sets of patients were compliant with post-surgical orders, those whose spouses offered positive social control via persuasive techniques experienced more positive emotions. These positive emotions mediated the effect of the

spousal control on physical functioning and emotional well-being such that those receiving positive social control reported greater physical functioning, as well as better emotional health and well-being. These results suggest that emotionally aversive messages of social control may be attenuated by delivering those messages in a more positive and persuasive manner. As the next section of this review explains, the use of humor may be one way to make messages of social control more palatable.

The Independence of Positive and Negative Exchanges.

While it may seem plausible that positive and negative exchanges simply examine two aspects of the same construct, a number of studies support the view that positive and negative social exchanges actually represent independent factors, rather than opposite ends of a single factor (Finch, Okun, Barrera, Zautra, & Reich, 1989; Fiore, Becker, & Coppel, 1983; Krause, 1995; Newsom et al., 2003; Newsom et al., 2004; Rook, 1984; Stephens, Kinney, Norris, & Ritchie, 1987). For example, Newsom and colleagues (Newsom et al., 2004) used second-order confirmatory factor analysis to study the correlation between the frequency of positive and negative exchanges. When they examined the correlation between specific parallel domains of positive exchanges and negative exchanges, they found no significant correlations with only minor exception.

Recent research also indicates that the connection between positive and negative exchanges cannot be explained by a simple causal relationship (Newsom et al., 2005). For example, the absence of support does not automatically equate to social conflict, especially if support is not expected in the first place (Pagel et al., 1987). For example, if an older adult is not in need of assistance with work around the home, then a lack of help

from others is not problematic. Likewise, the presence of conflict is not necessarily indicative of less support. Disputes over one matter with a family member, for example, do not necessarily mean that the same family member will be unsupportive on other matters. Rather, difficulties with one individual may actually provide the impetus for those affected to seek out others for support (Coyne & Bolger, 1990; Newsom et al., 2005).

Sources of Support

Individuals may receive support from multiple network members, and the type of support received is often dictated by the type of relationship an individual has with the support provider. Informal support refers to support provided by family members or friends, whereas formal support refers to support provided by paid or professional caregivers. It is worth mentioning that the overwhelming majority of studies relate to informal rather than formal support.

Informal support. Although both family and friends are considered to be informal support providers, research indicates that the impact of support given by family versus friends differs. Overall, family members tend to use social control as a means of support more than non-family (Rook & Ituarte, 1999), which may explain why friends appear to be more effective at reducing loneliness and increasing morale than children and grandchildren (Lee & Ishii-Kuntz, 1987).

DeLeon (2005) surmised that the value in friendships for older adults, in particular, lies in the fact that they are a matter of choice, whereas relationships with children or other family members are pre-determined. The idea that friendships hold

specific value in older adults' lives is supported the literature. For example, Larson and colleagues (Larson, Mannell, & Zuzanik, 1986) used self-reports from 92 older adults aged 55-88 to examine differences between friend and family member support, determining that friends had a greater impact on subjective well-being than family members, even though family members tended to provide more emotional and instrumental support. Fulton and Berry (1992) determined that although support was deemed important regardless of its source, instrumental support from family was more meaningful, while emotional support from non-family was more meaningful.

Other research suggests that participation in social activities outside the family may also positively impact cognitive function to a greater degree than social contact with family (Glei, Landau, Goldman, Chuang, Rodrìguez, & Weinstein, 2005). Finally, whether the presence of a spouse impacts the importance of friendships is not completely clear. In a sample of 997 married and widowed adults over age 50, Dean and colleagues (Dean, Kolody, & Wood, 1990) found that spouses and friends were more important sources of emotional support than adult children; however, Antonucci, Lansford, and Akiyama (2001) found that, regardless of the presence of a spouse, older women without a confidant suffered more from depression than older men.

Although less frequently studied, negative exchanges also differ between family and friends. According to Walen and Lachman (2000), support from individuals' friend network predicted subjective health status, whereas strain from family members and partners predicted health problems. Akiyama and colleagues (Akiyama, Antonucci, Takahashi, & Langfahl, 2003) found that negative interactions in all relationships

decreased linearly with age, with the exception of negative interactions with a spouse, which stayed somewhat constant over time. They also found that older adults' negative exchanges with their elder parents increased with age. These results lend credence to the notion that whereas friendships may be abandoned when they are no longer beneficial or enjoyable, family and marital bonds are more difficult to sever. Thus, these bonds appear to stay intact even when they result in negative interactions.

Friendships in old age are not without their problems, however. Fisher, Reid, and Melendez (1989) observed that older adult friendships may be particularly susceptible to conflict due to jealousy and difficulties adapting to the process of growing older, and Rook (1989) cited interpersonal and situational factors as potentially causing divergence in friendships. Despite these problems, older adults may be more likely to continue with friendships out of habit (Blieszner and Adams, 1998).

Friendships in long-term care. Patterson and colleagues (Patterson, Bettini, & Nussbaum, 1993) conducted interviews with older and younger adults to investigate the meaning of friendship across the lifespan. Their results indicated that older adults are discriminating about friends and that the meaning of friendship becomes more complex and sophisticated as people grow older. Their study also provides further evidence that older adults' friendships play a unique role which is separate from the role of family. This section is devoted to literature on friendships in long-term care environments.

Although research related to friendships in long-term care settings is sparse, several studies indicate the enduring importance of these relationships. Bergland and Kirkevold (2007) assert that while not all residents seem to need peer relationships to

thrive in an institutional setting, residents who did desire peer bonds were still able to develop them, especially with caregivers' assistance in facilitating opportunities for such relationships to grow. Miller and Beer (1977) provided one of the first detailed snapshots of institutional friendship patterns in a nursing home setting, although their sample of residents was small with only 38 respondents and their analyses were limited to descriptive statistics. Two-thirds of the sample named other residents within the nursing home as friends and seventy-six percent of residents sampled also mentioned at least one staff member with whom they felt close. Personality, common backgrounds, and common interests, respectively, were mentioned by respondents as important qualities in friends. Interestingly, the largest numbers of residents without friends were those who had been in the nursing home the longest. Later research may explain this finding. Two studies, in particular, suggest those residents with greater cognitive functioning, speech ability, and sight (Retsinas & Garrity, 1985), as well as the ability to ambulate, and to hear (Bitzan & Kruzich, 1990) were positively associated with respondents reporting having a friend within a nursing home. In fact, according to Retsinas and Garrity (1985), "For residents who are able to communicate, the nursing home may offer new friendships. Indeed, withdrawing from the larger world may enable residents to enter a new social world" (p. 380).

Whether or not a resident has a roommate is also a factor to consider when examining friendships in long-term care. Kovach and Robinson (1996) examined the factors increased roommate rapport and whether rapport with one's roommate predicted life satisfaction. They found that for those who talked with their roommates, roommate

rapport predicted life satisfaction; however, for those who did not engage their roommates in conversation, lack of rapport did not predict life satisfaction. Moreover, their results indicated that the lack of conversation and rapport between roommates did not occur as a result of dislike. Rather, it occurred because of the communication barriers such as cognitive impairment, deafness, or inability to speak.

Although residents in long-term care settings may face barriers to communication, such as those listed above, social interactions are still beneficial to residents' mental health. Gutheil (1991) found that "friendly relations" among nursing home residents provided companionship and pleasant social interaction without being too taxing on residents emotionally. Reinke, Holmes and Denny (1981) studied the effect of conversational interaction on cognitive functioning and morale in nursing home residents. Residents were randomly assigned to a control group, a conversation only group, or a conversation and game playing group. Both conversation groups focused on social interactions. Residents were then visited by an undergraduate who visited and facilitated the groups. Results indicated significant improvement in both cognitive functioning and morale in the conversation only and conversation and games groups, with the conversation and games group demonstrating the greatest improvement. Work by Parmellee (1982) also suggests positive associations exist between nursing home residents' life satisfaction, self esteem, and perceived social control and self-initiated interactions with friends and other residents.

Friendships with other residents may also provide opportunities for older adults to reciprocate support and adopt helping roles (Roberto & Scott, 1986). Research conducted

by Liang and colleagues (Liang, Krause, & Bennett, 2001) indicates that having opportunities to provide assistance and support to others can reduce psychological distress among older adults. In fact, these researchers found that those who received more assistance especially benefited from opportunities to reciprocate support because they were at greater risk of experiencing psychological distress related to feelings of over-benefiting from others' help.

These studies indicate long-term care residents have the ability to create, sustain, and benefit from friendships and social interactions with other residents, as well as staff (Kutner et al., 2000), and that caregivers can do much to encourage and foster these relationships (Bergland & Kirkevold, 2007).

Formal support. Few published studies have examined social support exchanges between formal caregivers in long-term care settings. This is likely due to several distinct challenges these environments pose, one of which is the high number of residents with some form of dementia who live in most long-term care facilities. In fact, recent studies estimate that approximately two-thirds of residents in assisted living settings (Rosenblatt et al., 2004) and approximately half of nursing home residents (Magaziner et al., 2000) have some form of cognitive impairment. As a result, many long-term care residents require more instrumental support, or tangible assistance, (Newsom, Bookwala, & Schulz, 1997) to complete activities of daily living, such as bathing, dressing, using the restroom, and eating. Support providers also differ between community and institutional settings. Whereas family and friends provide the majority of support to community-dwelling older adults, paid professional caregivers are relied upon to provide much of the

instrumental support, as well as other types of support. The caregiver/care recipient relationship in long-term care is unique in many aspects. Unlike family or friends, who often play a specific role in an older individual's life (i.e., daughter, brother, friend), expectations of formal caregivers in long-term care settings may be somewhat ambiguous. At times, care workers may serve as housekeepers, confidants, personal assistants, or providers of medication and other medical services.

Offering the right type of support for each individual resident at the right time is another challenge present within long-term care settings. Because paid caregivers are not generally as familiar with each resident's life history, accomplishments, or care preferences as his or her friends or family members, providing personalized care can also be challenging for care workers, especially if residents have expressing their needs or wishes. The challenge of providing individualized support is compounded by the fact that paid caregivers in institutional settings may care for between 7-11 residents during regular waking hours (OAR 411-086-0100, 2008), leaving little time for personal one-to-one interactions with each person. Finally, the training care workers receive also tends to focus on physical aspects of care and underplays the importance of providing emotional or companionship support to residents (Williams & Tappen, 1999).

Further, because paid caregivers are financially compensated for their efforts by the facility, care workers do not expect their support efforts to be returned by residents. Thus, caregiver/care recipient relationships often fail to provide opportunities for older adults to reciprocate the provision of any type of support. Rakowski and colleagues (Rakowski, Clark, Miller, & Berg, 2003) posit that reciprocity, or the provision of help or

support to others, is a significant predictor of assisted living residents' reports of aging successfully. Moreover, as Baltes (1996) states, "The social world in long-term care institutions is highly structured and differentiated… Specifically, dependent behaviors lead to dependence-supportive behaviors, independent behaviors to no response…dependent behavior is not the product of helplessness but of overcare" (p. 109-110). In other words, residents' independent behaviors, such as attempts at reciprocity or independence, may be met with either indifference or negativity by care staff. As a result, residents may find that dependent behaviors are the best way to provide social support to their busy care workers. Beel-Bates and colleagues (Beel-Bates, Ingersoll-Dayton, & Nelson, 2007) found that assisted living residents used several forms of deference as a means of offering support. These forms of deference included cooperation and pleasantness (Baltes, Wahl, & Reichert, 1991), as well as participation and gratitude (Beel-Bates et al., 2007). For example, some residents offered cooperation by withholding criticisms or requests in an attempt to ease the burden and provide support to their caregivers. Some residents in this study participated in activities at the urging of staff, because they envisioned their participation as a way of supporting the staff and contributing to staff members' well-being, but not as a means of contributing to their own well-being.

Summary

This section has reviewed existing literature related to social exchanges. Research indicates that social interactions, both positive and negative, have important connections to older adults' psychological health. While the presence of support is beneficial to

mental health, an even more important factor may be the absence of harmful or hurtful interactions. In fact, interventions aimed at reducing or alleviating negative social exchanges may be more effective than those aimed at bolstering support (Coyne & Bolger, 1990; Rook, 2001). Existing literature also illustrates that relationships between social interactions and psychological health are both complex and multi-faceted. A variety of factors have the potential to influence the way social interactions are perceived and appraised, and thus, how they impact mental health. These include how, when, and by whom support is provided; the type and level of support that is both expected and received; and the perception of available future support.

While research involving older adults has produced new knowledge about the function of social relationships in late adulthood, long-term care residents have been conspicuously absent from studies of this kind. Dwindling social networks and an elevated susceptibility to social isolation render this population especially important in terms of studying social interactions and their effects on well-being. Additionally, given the level of reliance most long-term care residents have on direct care workers, few researchers have examined the outcomes of positive and negative social exchanges between the two. Findings in this area have the potential to improve residents' as well as direct care workers' quality of life, as well as the quality of care provided in many institutional settings.

In addition to investigating domains of tangible support, instrumental support, emotional support, and companionship, the presence of humor may also potentially alter individuals' appraisals of their social interactions. Humor has been shown to facilitate

social interactions (Hampes, 1992) and is associated with social attractiveness (Cann, Calhoun, and Banks, 1997; Wanzer, Booth-Butterfield, & Booth-Butterfield, 1995), likeability (Derks &Berkowitz, 1989), and communicative competence (Graham, Papa, & Brooks, 1992). Although researchers acknowledge the contribution of humor to social interactions (Nezlek & Derks, 2001), thus far, no attempt has been made to quantify instances of humor or interactions involving humor within a social exchange framework. The following section will review literature on humor and its functions within social interactions, as well as illuminate the reasons why measuring humor as an additional domain of both positive and negative social exchanges is warranted.

Humor and Its Function in Social Interactions

> "The sense of humor of each individual has is a complex network of traits and constructs… It is compounded by social factors, including cultural restraints and traditions, social acceptability of the uses of humor, and familial patterns of uses of humor. It may have relationships to aggression and situation coping in some instances… In other circumstances, humor simply may be an act of kindness: getting others out of awkward or embarrassing situations or an effort to ease another's pain" (Thorson & Powell, 1993, p. 807-808).

As the quote above illustrates, humor is a multi-faceted social and communication phenomenon. Humor is frequently present in human interactions, and although having a "sense of humor" is generally regarded as a positive quality, attempts at humor are not always received favorably. Similar to existing domains of social exchanges, interactions involving humor may be perceived as supportive or destructive, thereby affecting the interpersonal relationships and emotional well-being of those involved. An examination of pertinent humor research makes it possible to see the value in studying humor-related exchanges in much the same way researchers have studied other types of positive and

negative social exchanges and their impacts on health and well-being. Specifically, considering humor as an additional domain of social exchanges may offer new insights into the impact of humor on individuals' appraisals of their social interactions with others. Further, studying humor-related exchanges between assisted living residents and their facility-based social networks in this way could potentially lead to humor-based training and interventions designed to strengthen communication, enhance relationships, and improve quality of life in long-term care settings.

Following a brief explanation of clarifying concepts related to humor and a synopsis of the historical and theoretical background of humor research, the subsequent review will examine several facets of humor research that are relevant to the understanding of its function within social interactions. These include an examination of literature related to humor and emotion; humor and personality; and humor and health. Shifting focus from research focused on individuals to research focused on interactions, the next major subsection will explore the role of positive and negative humor in social exchanges, including a subsection on interactions taking place specifically in healthcare settings. A final subsection will overview humor research involving older adults.

Clarifying Concepts Related to Humor

Thorson and Powell (1993) claim that "getting a firm grasp on all the elements of humor might be like what W.C. Fields once said of controlling the use of liquor: it's like trying to tie a hair ribbon on a bolt of lightening" (p. 808). Nonetheless, academics and intellectuals have been intrigued by the workings of humor for many years. Philosophers dating back to the Ancient Greeks theorized about the purpose of comedy and humor.

Psychologists have investigated the emotional and personality aspects of humor. Communication scholars have explored the cognitive workings of humor, as well as its role in interpersonal and group interactions, and medical researchers within biology, physiology, and neurology have studied the effects of humor and laughter on the human body.

Rod Martin offers the following definition of humor:

> "anything people say or do that is perceived as funny and tends to make others laugh, as well as the mental processes that go into both creating and perceiving such an amusing stimulus, and also the affective response involved in the enjoyment of it" (Martin, 2007, p. 5).

As this definition suggests, humor encompasses many different elements. In order to understand the role of humor specifically within the context of social interactions, it is necessary to clarify the basic process involved in humor-related social exchanges, as well as to define and distinguish between several important elements of interpersonal humor, including mirth, laughter, and sense of humor.

Although some researchers choose to study humor that occurs non-socially or inadvertently (see Wyer & Collins, 1992), the focus of this study is to examine humor that occurs deliberately within the context of a social interaction, as a result of some motive (either conscious or unconscious) on the part of the producer. For the sake of brevity, such social exchanges will be referred to hereafter as *humor-related social exchanges* or *humor-related social exchanges*.

Basic Elements of Humor-related social exchanges

Humor-related social exchanges often occur according to a basic pattern. Although recent work (see Attardo, 1997; Coulson, 2001; Norrick, 2003; Ritchie, 2005)

has uncovered a multitude of subtleties that illuminate the cognitive processes behind humor-related exchanges, such detail is beyond the scope of this project. Therefore, the following explanation provides a cursory overview of only the most basic elements involved in humor-related exchanges.

The first basic element comprising a humor-related exchange includes some form of stimuli that is cognitively processed and appraised as humor-related by its receiver. This stimulus could take the form of a joke or anecdote, a comment, or a physical behavior. The second element involves the mental or emotional state elicited in the receiver as a result of his or her appraisal of the stimulus as funny or humor-related. The third element consists of the receiver's outward physical display of the humor-inspired emotional state, which may be accompanied by certain psychological and physiological effects. Defining and clarifying certain terms related to these elements is also essential in avoiding confusion about different aspects of humor-related communication. This occurs in the paragraphs that follow.

Mirth. The emotional state elicited by the perception of humor or the appraisal of a stimulus as funny or humor-related has been referred to as *mirth* (Martin, 2007), as well as *amusement* (Morreal, 1987), or *exhilaration* (Ruch, 1993).[1] Martin (2007) points out that similar to other emotional states, mirth can occur with varying levels of intensity, which, in turn, dictate the intensity of related physical responses, such as laughter and smiling. Mirth and other related positive emotions will be considered in more depth later in this section.

[1] Of course, not all humor-related stimuli results in a positive emotional state. This will be explored in greater detail later in this review.

Laughter. Laughter, like smiling, is a physical expression of the mirthful emotional state that occurs when humor is detected. Laughter involves the expulsion of air from the lungs and related vocal sounds (Morreal, 1987) and the coordinated movement of 15 facial muscles, as well as chest, abdominal, and skeletal muscles (Berk, 2001). Although laughter may accompany instances of humor, distinguishing between laughter and humor is crucial. Morreal (1987) points out that although laughter often occurs as a result of humor-related stimuli, it can also occur in response to stimuli that is not perceived as humor-related. John Dewey (1894) stated, "The laugh is by no means to be viewed from the standpoint of humor; its connection with humor is secondary. It marks the ending … of a period of suspense, or expectation …which is sharp and sudden" (p. 558). Until recently, however, many researchers used the terms "laughter" and "humor" interchangeably, with laughter often being used as a proxy for humor (Thorson & Powell, 1993). Researchers are now beginning to recognize that humor and laughter are separate and distinct concepts and that although humor may incite laughter, laughter does not necessarily indicate the presence of humor. Laughter is a physical response to a stimulus, and that stimulus may or may not be related to the presence of humor. What separates humor-related laughter from other types of laughter (e.g., nervous laughter or laughter resulting from tickling) is the presence of the mirthful emotional state that accompanies an appraisal of humor.

Sense of humor. Whether an individual appraises a stimulus as humor-related or funny is related to his or her predisposition toward experiencing (or initiating) the emotional state of mirth. This predisposition is referred to as the *sense of humor*. The

concept of sense of humor, too, is quite ambiguous, as Thorson and Powell (1993) explain:

> When we speak of sense of humor we are speaking of a vast variety of psychological and social abilities and traits: getting the joke, wanting to get the joke, creating the joke, level of effort one is willing to expend to create the joke, need for social approval, need to go onto the offensive, desire for control, comfort in a social setting, extraversion, and the willingness and ability to communicate (p. 808).

As this definition implies, an individual's sense of humor is defined by and related to a variety of personality traits. Although complex, the notion of sense of humor is an important concept because it offers a glimpse into why some people's mental health may be influenced to a greater or lesser degree than others' by humor-related social exchanges. The relationship between sense of humor and personality will be explored further in a later subsection of this review.

Historical and Theoretical Background of Humor Research

Having distinguished between several key concepts related to humor, it is also useful to examine some of the prevailing historical and theoretical notions about humor and how humor research has evolved. Much of the research on humor theory originated within the field of philosophy, whose scholars attempted to explain what humor is and why certain things or situations may be considered humor-related or comic. Several major theories have emerged over time: (1) *superiority/disparagement theory*, (2) *relief theory*, (3) *psychoanalytic theory*, and (4) *incongruity theory*. Although each theory attempts to provide an explanation of the fundamental aspects of humor, these theories are not necessarily in competition with one another. Instead, they simply focus on different aspects of humor and treat certain aspects as more essential than others. When

reading about these theories, it is also important to bear in mind that until recently, scholars often made broad attempts at explaining humor-related phenomena. As such, many of the distinctions between stimuli and responses made above are not present in early theoretical writings. Following the descriptions of the major theories, this subsection concludes with a brief discussion of current research developments related to humor and neuroscience.

Superiority/disparagement theory. Focusing on aggression as the most important facet of humor, superiority or disparagement theory is based on the notion that most people possess innate hostility and feel a sense of delight in laughing at the misfortune of others. The ideas behind this theory originated in the works of Plato (428-348 B.C.) and Aristotle (348-322 B.C.). In his *Republic*, Plato (1991) professed that laughter was an outward sign of malevolence and human beings' tendency to feel a sense of delight at others' adversity. Aristotle held a similar though less stringent view of laughter as ill-mannered but not seriously harmful. He stated, "The comic mask …is unseemly and distorted but does not cause pain" (Poetics, ch.5, 1449a). In the seventeenth century, Thomas Hobbes (1651) elaborated on these early ideas, emphasizing that reactions to humor were based in human beings' constant struggle for dominance. In *Leviathan*, he stated,

> "Sudden glory is the passion which makes those grimaces called laughter; and is caused either by some sudden act of their own that pleases them; or by the apprehension of some deformed thing in another, by comparison whereof they suddenly applaud themselves" (Part 1, Ch. 6).

Hobbes believed that laughing at another person was tantamount to professing triumph over that person. Descartes (1989) subscribed to a similar view, although he

conceded that laughter could potentially result from causes other than malice. Bergson (1980) also contributed to the evolution of superiority theory, asserting that disparaging humor could serve as a social corrective or as a means of encouraging conformity to social standards. Over time, however, superiority theorists have increasingly acknowledged humor's playful and social aspects, and have assimilated these more positive aspects into their theories. Self-deprecating humor's relation to superiority theory is one example of such assimilation. According to modern superiority theorists such as Gruner (1999), self-deprecating humor offers individuals the opportunity to diminish their own inadequacies and to minimize stressors that plague their self-concepts and self-esteem by asserting superiority over their own faults. Thus, humor offers a way for individuals to feel a sense of triumph over threats to the self. Kallen (1968) illustrates this point, stating, "I laugh at that which has endangered or degraded or has fought to suppress, enslave, or destroy what I cherish and has failed. My laughter signalizes its failure and my own liberation" (cited from Martin, 2007, p. 48). Robert Solomon (2002) has essentially flipped superiority theory on its head, developing what he calls an inferiority theory of humor. According to Solomon, self-recognition in silly antics and self-deprecating behavior, such as that presented in the Three Stooges, is characteristic of a source of humor based in inferiority or modesty. Rather than focusing on your own past inferiority, he argues that the ability to not take yourself seriously, or to see yourself as less than ideal, is a source of virtuosity and compassion.

Relief theory. Relief theory is predicated on the notion that the experience of laughter and other physical expressions of humor provide a means of releasing tension

(Spencer, 1860). Spencer (1860) combined elements of philosophy and biology, claiming that laughter is one avenue by which physical tension may be expelled through muscular action. In *The Physiology of Laughter*, Spencer (1860) stated, "It is the coerced from of seriousness and solemnity without the reality that gives us that stiff position from which a contact with triviality or vulgarity relieves us, to our uproarious delight" (reprinted in Morreal, 1987, p.104-105). Kant (2007) and later Gregory (1924) also subscribed to the idea that humor provided a form of tension release. Contemporary relief theorists have shifted their focus more toward cognitive and emotional processes associated with humor. These researchers have investigated the effects of autonomic arousal in response to perceptions of funniness and expressions of mirth (Schacter & Wheeler, 1962), the relationship between outward expressions of mirth and individuals' emotional enjoyment of humor (Gavanski, 1986), and the relation of mirthful emotion to facial expression (Ruch, 1997). Martin (2007) suggests that the strength of relief theory lies in its acknowledgement of the importance of both cognition and emotion in appreciating humor and in producing humor-related responses.

Psychoanalytic theory. Freud's (1960) psychoanalytic theory also centers on the belief that all human beings have repressed energy that is released during humor-related or mirthful experiences. Freud classified laughter-related phenomena into three distinct categories: jokes, the comic, and humor, according to the type of energy release with which they are associated. Jokes allow for the release of aggressive or sexual energy through laughter. Comic refers to nonverbal sources of mirth, mainly physical forms of humor or clowning. Comic-induced laughter involves individuals catering to their inner

child through releases of mental or ideational energy in the form of laughter. Humor refers to the defense mechanism that protects individuals from potentially difficult or unpleasant situations. He also used the term "wit" to describe that which is dangerous or taboo but presented in a humor-related and biting way. In an essay on humor, Freud explained, "Humor has in it a liberating element. But it also has something fine and elevating… It insists that it is impervious to wounds dealt by the outside world, in fact, these are merely occasions for affording it pleasure" (reprinted in Morreal, 1987, p. 113). Some of Freud's basic ideas, such as his view of humor as an adaptive defense mechanism, have remained relevant to psychologists (Valliant, 2000); however, the popularity of psychoanalytic theory has greatly decreased over the past several decades, as many recent studies have cast doubt on its validity (see Ruch & Hehl, 1998).

Incongruity theory. Incongruity theory (Morreal, 1987; Martin, 2007) is based on the idea that unexpected or inconsistent circumstances elicit a humor-related reaction, as long as the circumstances are related to one another and the incongruity is non-threatening. According to Martin (2007), an incongruity occurs "when a situation, event or idea is simultaneously perceived from the perspective of two self-consistent but normally incompatible or disparate frames of reference" (p. 63). The cognitive recognition of the incongruity is thought to bring about a state of mirth or amusement. Puns provide excellent illustrations of incongruity theory. Consider the pun, "A thousand dogs were stolen from a pet shop on Saturday. Police say they have no leads." In this case, the concurrent meaning of "lead" as both evidence and a pet's leash creates an incongruity. The cognitive awareness and recognition of the unexpected double meaning

of the word “lead” is thought to be humor-related and bring about a humor-related emotional response.

Although he believed that the enjoyment of humor was baser than the enjoyment of aesthetics or moral integrity, Kant is credited with developing the foundational principles of incongruity theories. In *Critique of Judgment* (2007), he posits that “In everything that is to excite a lively laugh there must be something absurd (in which the understanding, therefore, can find no satisfaction). Laughter is an affection arising from the sudden transformation of a strained expectation into nothing” (I, I, 54, p.223). Kant asserted that the sheer cognitive shift or frame switch from what is expected to what actually occurs stimulates a humor-related response. Kierkegaard (1992) also subscribed to the idea that incongruity was ultimately responsible for humor-related or comical responses, adding that the primary ingredient necessary for humor is contradiction. He also believed that having a religious view of life was connected to having a sense of humor. Bergson, too, was instrumental in the development of incongruity theory. In his essay, Laughter (1980), Bergson speaks of incongruity resulting from the “mechanical encrusted upon the living” (p. 84). He also described humor as occurring when listeners expect one outcome, and take “a fall” as a result of being presented with an entirely different outcome.

Recently, humor theorists have described an expanded version of incongruity theory called the General Theory of Verbal Humor (GTVH; Attardo 1997). This theory focuses on semantic aspects of humor and sets forth elaborations on three chronologically sequenced phases present within humor-related texts: (1)the *set up phase*, which lays the

foundation for the incongruity by creating an initial frame of reference and a meaning consistent with that frame of reference; (2)the *incongruity discovery phase*, in which the expectancy created by the initial frame of reference is violated; and (3)the *resolution phase*, in which the conflict created by the expectancy violation is reduced the realization of an alternate meaning in which the joke makes sense in light of the new information presented in the joke's punch line.

Although incongruity theories of humor brought a new appreciation of the cognitive aspects of humor to the forefront of humor research, they also tend to ignore or discount the importance of social context. As Suls (1983) notes, incongruity explains why a person might "get" a joke but fail to explain the emotional circumstances that make a humor-related pleasant or enjoyable.

New Developments: Humor and Neuroscience

Each of the previously described theories of humor illustrates humor's social nature, and the burgeoning field of social neuroscience (Cacioppo & Berntsen, 1992) has begun to illuminate the biological mechanisms that underlie such social behavior.

With the availability of technologies such as functional magnetic resonance imaging (fMRI), neuroscientists have contributed to a greater appreciation of the human brain's role in processing humor, thereby adding to existing theoretical approaches. Coulsen and Kutas (2001) explored the processes of frame shifting and humor appreciation using electroencephalography (EEG), finding differences in brain activation patterns between those with low humor comprehension and those with high humor comprehension. Shammi and Stuss (1999) studied patients with brain lesions to

determine how damage to certain areas of the brain effect humor appreciation. Their results indicated that one specific brain region, the right frontal lobe, was pivotal to the integration of cognition and emotion necessary for humor appreciation and that damage to this area of the brain was associated with diminished physical and emotional responses to humor. Moran and colleagues (Moran, Wig, Adams, Janata, & Kelly, 2004) used fMRI to differentiate between the neurological processes involving humor detection, (i.e., "getting the joke") and humor appreciation (i.e., finding the joke funny or amusing). They found that the two processes were associated with unique neural pathways in the brain such that humor detection appears to activate portions of the brain associated with the understanding and processing of language, and humor appreciation activates areas of the brain related to emotional arousal. As technology further improves and becomes more accessible, new findings related to humor will undoubtedly surface in the neuroscience literature.

Humor's Relationships with Emotion, Personality, and Health

Scholars from many academic disciplines have contributed to current knowledge about humor and how it relates to an individual's emotions, personality characteristics, and physical and mental health. Emotion researchers have examined mirth within the context of other positive emotions. Researchers studying personality have uncovered several traits associated with both production and appreciation of certain types of humor. The impact of humor has also been investigated through the lenses of physical and mental health and longevity. Each of the aforementioned aspects is relevant to the understanding of humor-related communicative exchanges.

Humor and emotion. How an individual reacts and responds during any particular communicative interaction is the result of many factors. One key factor is the individual's emotional or affective state. *Affect* is a general term describing the subjective mental and physiological states associated with various feelings, thoughts, and behaviors (Isen, 2002). Affect is often temporary and fleeting, and can be influenced by a variety of social and environmental factors. For the purposes of this review, the terms *affect* and *emotion* will be used interchangeably to refer to the temporary, subjective state brought about by the subjective appraisal of some specific event or occurrence. This appraisal my happen consciously or unconsciously, thereby triggering a host of other thoughts, urges, expressions, and physiological responses. Depending on an individual's appraisal of any given situation, he or she may experience a positive or negative affective state (Lazarus & Folkman, 1984). Likewise existing affective states can impact the way in which an individual appraises future events or situations, as well as his or her level of happiness and life satisfaction (Schwarz & Clore, 1983). As mentioned earlier in this section, mirth is a positive affective state brought about by the detection of humor. The following paragraphs focus on research related to humor-related mirth and other similar emotions.

Ekman's (1992) research focused on several categories of positive emotion, including joy, interest, contentment, and love, and he identified mirth as a form of joy that is categorized by the willingness to participate in social, artistic, and intellectual play (Frederickson & Branigan, 2001). Literature on play indicates that it facilitates relationships and interpersonal bonds (Martineau, 1972) and that the information acquired during play is enduring and can contribute to the acquisition of knowledge long

after the actual play experience has occurred (Frederickson and Branigan, 2001). Positive emotional states also appear to have facilitative effects on cognition, activating brain regions that involve thought and planning (Ashby, 1999), memory related to social information (Isen, 1990), and creativity in problem solving (Isen, 2003). In fact, Isen (2003) suggested that positive emotions, including mirth, are associated with more flexible thinking and problem solving abilities. These findings are consistent with research on humor indicating that those high in humor initiation also tend to score higher on measures of creativity than those lower in humor initiation (Murdock & Ganim, 1993). According to Ziv (1988), the cognitive processes involved in resolving an incongruity are similar to those involving other forms of creativity. Each requires a shifting of perspectives and the ability to envision schema in novel ways. Finally, research from the field of education also indicates that positive affective states can increase comprehension and retention, facilitate attention and memory, and contribute to environments conducive to learning (Garner, 2005).

Another benefit of positive emotional states such as mirth is their potential ability to counteract negative emotional states. According to Frederickson's (1998) broaden-and-build hypothesis, positive emotions have the unique ability to broaden and expand individuals' momentary thought-action repertoire and build upon his or her social, intellectual, and physical resources. Further, she posits that the narrowing of thought patterns associated with negative emotions may be attenuated by the expansion associated with positive affect. Several studies appear to support this hypothesis. One study revealed that spontaneous smiling during a negative emotional arousal accelerated

cardiovascular recovery following the arousal (Frederickson & Levinson, 1998). Another indicated that films inducing mild joy or contentment significantly hastened cardiovascular recovery from an induced state of negative emotional arousal, whereas didactic or sadness-inducing films had no such effect (Frederickson, Mancuso, Branigan, and Tugade, 2000). The broaden-and-build hypothesis (Frederickson, 1998) also encompasses the notion that experiences of positive affect and broader thinking are multiplicative. According to Frederickson (1998), these experiences build upon one another over time, producing an upward spiral toward emotional well-being.

How social interactions among residents and between residents and staff in long-term care facilities affect residents' emotional states is a question that has yet to be answered. Few studies to date have explored the types of social interactions that commonly occur among residents or between residents and staff, especially those involving humor. Research does indicate, however, that approximately 44% of nursing home residents either suffer from a major depressive disorder or exhibit depressive symptomatology long-term care residents (Teresi, Abrams, Holmes, Ramirez, & Eimecke, 2001). Teresi and colleagues (2001) also found that only between one-third and one-half of these cases are recognized. If the broaden-and-build hypothesis holds true, efforts of direct care workers and others to facilitate mirth and other positive emotions may contribute to their mental health, quality of life, and possibly even their ability to learn and remember information.

Humor and personality. The frequency and intensity with which an individual experiences the positive emotional state of mirth is thought to be closely associated with

personality. In *Laughter and Liberation*, Mindess (1971) alluded to the relationship between humor and personality, stating:

> "Humor...is a frame of mind, a manner of perceiving and experiencing life. It has a kind of outlook, a peculiar point of view, and one which has great therapeutic power. It can enable us to survive both failure and success, to transcend both reality and fantasy, to thrive on nothing more than the simplicity of being" (p. 21).

Researchers have attempted to describe a humor-related personality, or the likelihood of an individual to respond favorably to humor-related stimuli, in several different ways. Rotton (1992) distinguished between state humor, a temporary state resulting from experiencing positive emotion of mirth, and trait humor, a person's enduring tendency to see things with a humor-related outlook. Kuiper and Martin (1998) refer to each person's "sense of humor" as a stable personality trait encompassing at least four components: the propensity to use humor as a coping mechanism in the face of adversity, the tendency to respond with amusement in a variety of situations, the ability to perceive and understand humor-related or witty situations or comments, and the importance they place on humor or humor-related people. Ruch (1997), however, adopted a slightly different view, positing that humor could vary both interindividually (between individuals) and intraindividually (across situations). They chose to use the term "humor-related temperament" rather than "sense of humor" to distinguish their conceptualization of the propensity to appreciate humor. (For the purposes of this review, however, these two terms will be used interchangeably to refer to a set of characteristics that describe an individual's ability to maintain a humor-related perspective or outlook.)

Ruch, Kohler, and van Thriel (1996) posited that the humor-related temperament encompassed both state and trait characteristics. The State-Trait-Cheerfulness Inventory

(SCTI) measures both state and trait facets of cheerfulness, seriousness, and bad mood as a means of conceptualizing the humor-related temperament. According to this model, higher state and trait cheerfulness scores indicate a more humor-related temperament, with higher seriousness and bad mood scores indicating a less humor-related temperament. Using the Eysenck Personality Questionnaire (EPQ-R; Eysenck & Eysenck, 1985) and two versions of the five factor model (FFM) of personality (Costa & McCrae, 1992; Caprara, Barnaranelli, Borgogni, & Perugini, 1993), Ruch and Kohler (1998) found that cheerfulness scores were positively correlated with extraversion, openness, agreeableness, energy, friendliness, and emotional stability but negatively correlated with neuroticism, and conscientiousness. Seriousness was positively correlated with neuroticism and conscientiousness but negatively correlated with extraversion openness, energy, and friendliness. The third factor, bad mood, was positively correlated with neuroticism but negatively correlated with extraversion, openness, agreeableness, conscientiousness, energy, friendliness, and emotional stability.

Kuiper and Martin (1993) also found that those scoring higher on measures of sense of humor had higher levels of self-esteem, more stable self-concepts, less discrepancy between actual and ideal self-concepts, and were less critical and more realistic in judgments about themselves. Further, sense of humor is also associated with individuals' ability to show intimacy (Hampes, 1992), to trust others (Hampes, 1999), and to express empathy (Hampes, 2001), and to maintain optimism (Korotov & Hannah, 1994). In summary, many studies suggest that elements of the sense of humor or humor-

related temperament are associated with positive, emotionally healthy personality attributes.

A series of more recent studies, however, call some of the aforementioned findings into question. Kuiper and Martin (1998) found only small correlations between humor and optimism, self-acceptance, purpose in life, and positive relations with others. The same studies also found only weak associations between components of sense of humor and sociability, between humor and self-esteem, between humor and depression, between humor and anxiety, and between coping humor and positive individualism. Despite these findings, Kuiper and Martin (1998) still defend the possibility that humor may, indeed, contribute to health in a variety of ways. They state, "There is considerable evidence, from our own past research and that of many others, indicating that humor and laughter can have beneficial effects on emotional well-being, interpersonal relatedness, physical health, and so on" (p. 178). They do warn, however, that "overly enthusiastic and uncritical endorsements of humor… are unwarranted" (p. 178). They reconcile these competing statements by surmising that current scales available for measuring the personality components of a sense of humor may be insufficient in distinguishing between different types of humor, some of which may be divisive or damaging.

Humor and health. Humor's role in health is one that has recently received a great deal of attention. The saying "laughter is the best medicine" has been used or incorporated into the titles of numerous books and articles. An estimated 2,000 laughter clubs meet regularly in the United States (World Laughter Tour, Inc., 2009) with over 6,000 clubs worldwide (Laughter Yoga International, 2009). These clubs tout the health

benefits of laughter and offer individuals the opportunity to laugh together in a group (without jokes or humor). A non-profit organization called Rx Laughter, collaborates with medical experts to examine the positive health benefits of entertainment on serious physical and emotional issues of children and adults through a combination of therapy, education, and research (Rx Laughter, 2009). Although there appears to be some scientific basis for all of the attention therapeutic humor has received, results in many areas are equivocal. The following subsection reviews literature related to humor's impact on aspects of both physical health and mental health.

Physical health. The view that humor has extensive physical health benefits is widely accepted, yet whether it is the mere presence of humor-related stimuli or the physical response of laughter that stimulates these health benefits is not necessarily clear. In a frequently-cited laboratory study, Berk and colleagues (1989) found that humor-induced laughter resulted in a form of "eustress," a stress that is healthy, and results in muscle stimulation and decreased stress hormones that are known to compromise the immune system. Other studies suggest that laughter is good conditioning exercise for wheelchair-bound or bedridden people, that it creates muscle relaxation, eases muscle tension, and breaks the muscle spasm-pain cycle in patients with neuralgias and rheumatism (Morreal, 1997). Laughter also clears mucus and aids ventilation for patients with respiratory conditions, enhances blood oxygen levels, helps fight infection (Fry, 1992; Wooten, 1996), and increases interpersonal responsiveness, alertness, and memory (Fry, 1992). Several studies also indicate that laughter may increase pain thresholds (Cogan, Cogan, Waltz, & McCue, 1987; Hudak, Dale, Hudak, & DeGood, 1991; Rotton,

1996); however, a recent controlled laboratory experiment conducted by Mahony, Burroughs, and Hieatt (2001) challenges these results, suggesting that the effects achieved in prior studies may have been due to a placebo effect based on existing beliefs about the power of laughter.

In reviews of studies pertaining to laughter and health, Martin (2001; 2002) evaluated a large group of studies pertaining to the physical benefits of laughter, finding that research often lacked theoretical background or was not sufficiently methodologically rigorous. Thus, while mirthful laughter may be associated with a variety of health benefits, current research may be insufficient to validate such claims. Further studies with adequate controls and larger sample sizes are needed to further explore proposed relationships.

Mental health. Although researchers continue to debate claims of laughter's impact on physical health, relationships between various aspects of humor and mental health are more widely accepted. As previously mentioned in this section, however, the benefits of humor appear to be dependent on the presence of certain personality characteristics, such as the propensity to acknowledge and appreciate humor. Those possessing such traits appear to be able to better cope with stress. According to Lazarus and Folkman (1984), the effects of a particular source of stress are moderated by the way in which the affected individual appraises or evaluates that stressor. If an individual is able to appraise a stressor as less detrimental (or even beneficial), rather than as injurious, he or she is better able to cope with that stressor, and harmful effects on mental health may be minimized.

Research indicates that a sense of humor may help individuals to appraise stressful life events in more positive and less damaging ways, thereby improving coping abilities and decreasing negative affect, depression, and anxiety (Martin & Lefcourt, 1983; Lefcourt & Martin, 1986). Martin and colleagues (Martin, Kuiper, Olinger, & Dance, 1993) found that people with high humor (defined in their study as having a high propensity to use and appreciate humor) appraise stressful events in a more positive and challenging way than those with low humor (or a low propensity to use and appreciate humor). Those with high humor also benefited more from positive life events, with positive affect increasing as positive life events increased. The opposite was true for those with low humor, whose affect seemed to stay stagnant, even as the number of positive life events increased.

Humor appears to have other mental health benefits as well. Kuiper & Martin (1993) found that humor was associated with more positive self-concept and lower levels of perceived stress. Their study employed four separate measures to determine a composite humor score. These included a measure identifying an individuals' use of humor as a coping mechanism, a measure indicating an individual's propensity to appreciate humor in a variety of situations, and two scales measuring a general ability to detect humor and to like humor, respectively.

Other researchers have found that high levels of humor were associated with more positive self-esteem and reduced depressive symptomatology (Kuiper & Borowicz-Sibenik, 2005), and empirical evidence suggests that external humor-related stimuli can simultaneously impact emotional responses to stressors and enhance positive mood and

state hopefulness (Vilyathong, Arnau, Rosen, & Mascaro, 2003). For example, Danzer, Dale, & Klions (1990) found that a humor-related audiotape significantly decreased laboratory-induced depression to pre-experimental baseline levels in female undergraduate students when a didactic audiotape had no significant effects. Another study found that the affective benefits achieved from watching a 20-minute humor-related television show were similar to those achieved by doing 20 minutes of light exercise (Szabo, 2003). Further, Cann, Calhoun, and Nance (2000) ascertained that exposure to humor-related stimuli could improve affect following a stressful experience, as well as act as a buffer for subsequent stressful experiences.

Although many researchers have focused their efforts on humor as creating positive affect, some researchers have also examined humor as a means of mitigating negative affect. For example, humor may decrease negative affect simply by acting as a cognitive distraction (Strick, Holland, van Baaren, & van Knippenberg, 2009), thereby prohibiting the cognitive processing of negative emotions.

The recent development of a new measure, called the Humor Styles Questionnaire (HSQ; Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003) allows researchers to examine an individual's propensity to use and appreciate both positive and negative styles of humor. Kuiper and colleagues (Kuiper, Grimshaw, Liete, and Kirsch, 2004) administered the HSQ, as well as the Coping Humor Scale (CHS; Martin & Lefcourt, 1983), which measures individuals' use humor as a mechanism to aid in coping with stressors, and the revised Humor-related Behavior Deck (HBD-R; Craik, Lampert, & Nelson, 1996), which quantifies individuals' use of socially skilled humor, rude or bawdy humor, and

belabored humor. They also assessed mental health through measures of depression, anxiety, and judgments of self-competency. Individuals with greater levels of the positive dimensions of humor and a greater tendency to use humor as a coping mechanism had very low depression levels, greater self-esteem, more positive affect, and more positive judgments of their own self-competency in controlling anxiety and interacting socially. However, individuals with greater levels of the negative dimensions of humor experienced the opposite effects on mental health, with lower levels of self-esteem being particularly pronounced.

In summary, while findings related to laughter and physical health are questionable, research related to humor and mental health are more pronounced. Findings indicate that humor can be beneficial to mental health, but it can also be detrimental. Positive or affiliative styles of humor are related to better coping, self-esteem, and reduced depression; however, maladaptive styles of humor that are rude, self-defeating, or aggressive are associated with the opposite effects on mental health.

The duality of humor is similar in many ways to that of social interactions. In both cases, exchanges meant to be positive or supportive may be appraised differently by the receiver. Just as an offer of advice may be intended as helpful but perceived by its recipient as meddling or interfering, a humor-related comment intended to lighten the mood may be perceived by its recipient as offensive or inappropriate.

Humor-related social exchanges: The Positive and the Negative

According to Wyer and Collins (1992), the thoughts or elaborations produced by attempts at humor can elicit either positive or negative affect. This notion is also in

keeping with Lazarus's (1991) idea that how an individual appraises or evaluates a stimulus or an event impacts his or her ability to cope and, in turn, his or her emotional well-being. Whereas research on humor and emotion, humor and personality, and humor and health focus primarily on the positive or beneficial impact of humor on from an individual standpoint, this subsection focuses on humor from a relational standpoint, acknowledging both the potential positive and negative functions of attempts at humor within social interactions.

Positive humor-related exchanges. Much of the existing research on the interpersonal function of humor might be summed up in Oscar Wilde's statement, "Laughter is not at all a bad beginning for a friendship." In fact, shared humor-related experiences facilitate feelings of closeness among strangers interacting for the first time (Fraley & Aron, 2004). According to Berger and Calabrese (1975) a central focus of communication is to share and exchange information in order to reduce uncertainty about the other person's actions and the social situation. As individuals engage in social interaction and other forms of communication, they produce shared meaning or "common ground" (Clark, 1996) that allows them to gradually reduce uncertainty about one another and coordinate the joint action of conversation. Reductions in uncertainty are also believed to result in increased likeability. Positively-appraised humor can facilitate communication by acting as a tool for self-disclosure and uncertainty reduction. For example, in a discussion of the conversational aspects of humor, Norrick (2003) posited that humor facilitates the ability of an individual to "present a personality, share experiences and attitudes, and promote rapport" (p. 1348).

Positive humor within social exchanges can also build cohesiveness between individuals by providing a means of concealing or softening unpleasant information (Holmes, 2000), decreasing friction within interactions (Fine & DeSoucey, 2005), reducing the perceived power distance between two people (Duncan, 1984), ingratiating oneself to others (Cooper, 2005), and encouraging negotiation and problem-solving (Carnevale & Isen, 1986). Humor is also associated with increased coping skills (Martin & Lefcourt, 1984). Nezlek and Derks (2001) found that people's ability to use humor as a mechanism for coping was positively associated with how pleasurable they found their social interactions, how confident they felt in their social interactions, and how much time they spent with others.

Within the realm of marital interactions, Ziv and Gadish (1989) found that many couples share private jokes and other forms of social humor, and that these practices foster feelings of cohesion and intimacy. Similarly, de Koning and Weiss, (2002) found that husbands and wives who report having their own "couple identity" sense of humor tended to feel closer to one another and more satisfied with their marriages.

To summarize, positive humor-related exchanges appear to facilitate communication and conversation, increase feelings of affinity and closeness between people, and increase satisfaction people feel about their personal relationships. These benefits may be especially important for assisted living residents, who must negotiate relationships with other residents who may be experiencing varying levels of physical or cognitive impairment, as well as with staff with different cultural backgrounds and levels of experience.

Negative humor-related exchanges. Shultes (1997) emphasized that "humor should always be offered in the context of warmth, understanding, love, and support, and perceived as laughing with not laughing at" (emphasis added; p. 565); however, attempts at humor are not always intended or perceived as positive or supportive. In fact, when used carelessly or maliciously, attempts at humor can have detrimental effects, causing people to feel uncomfortable, offended, tormented, or alienated. The following subsection explores literature related to what may be referred to as humor's "darker side." For the purposes of this review, the term "negative humor" will be used to describe attempts at humor that elicit negative appraisals from individuals on the receiving end. These attempts fall into two basic categories, *maladaptive humor* and *failed attempts at humor*.

Maladaptive humor. Some instances of negative or humor occur as a result of humor that is maladaptive, or delivered with negative intent toward others or toward the self. This includes *malicious* (Robert & Yan, 2007) or *aggressive* (Martin, et al, 2003) *humor*, which describes teasing, ridicule, derision, sarcasm, and other forms of humor with a negative or destructive underlying purpose, and *self-defeating humor* (Martin, et al, 2003), which involves excessive self-disparagement and self-ridicule as a means of gaining the approval of others. It is important to differentiate between self-deprecating humor and self-defeating humor. Self-deprecating humor is a mild form of self mockery that many people use occasionally as a means of ingratiation or making others feel comfortable (Meyer, 2000); however, an ongoing reliance on more severe self-defeating humor and extreme self-derision may result in the development of unhealthy social support networks that contribute to the humor producer's poor self concept and impede

his or her psychological well-being (Kuiper & McHale, 2009). For example, a recent study indicates that increased use of a self-defeating humor style and decreased use of self enhancing and affiliative humor styles, are associated with increased depressive symptomatology (Frewen, Brinker, Martin, & Dozois, 2008).

Within marital dyads, negative humor is associated with lower levels of relationship satisfaction (Butzer & Kuiper, 2008). In fact, deKoning and Weiss (2002) developed a scale to measure both positive (affiliative) humor and negative (divisive) humor within marital dyads. Their work indicated that negative humor is often seen as a form of passive-aggressiveness in which one partner uses a statement such as, "I was just kidding" to avoid an argument or curtail a discussion involving conflict.

In work environments, maladaptive humor is associated with failure-producing team cultures within organizations (Wood, Beckmann & Pavlakis, 2007) and with lower ratings of managers' leadership outcomes by employees (Decker & Rotondo, 2001). For instance, Holmes and Marra (2002) examined the use of subversive humor in the workplace finding it was often used to control others, enforce unbalanced power structures, undermine the power of an individual, or isolate an individual as an "outsider."

Negative humor can also be used to communicate messages of prejudice against groups of people, and older adults are one group who may be marginalized by humor. Palmore (2005) states, "The majority of humor about the aged shows ageist attitudes, some is ambivalent, and very little shows positive attitudes. Certain stereotypes tend to predominate - loss of physical or mental abilities; loss of attractiveness; loss of sexual

ability or interest; and age concealment" (p. 87). The content of humor about older adults and the aging process may be explained by the prevailing stereotypes of older people. Research by Schmidt and Boland (1986) and Hummert (1990) investigated the stereotypes of older adults held by young adults. In both studies, the number of negative stereotypes, which included self-centered, impaired, vulnerable, and elitist, outnumbered the number of positive stereotypes, which included small town neighbor, activist, and liberal matriarch/patriarch. Other researchers have found that older adults in age-conscious Western cultures are seen as "feeble, egocentric, incompetent, and abrasive" (Giles, Fox, Harwood, & Williams, 1994, p. 131). The consequence of these stereotypes is evidenced in the way older adults are depicted within humor.

Although Richman (1977) found some jokes about aging referred to older adulthood as a stage of affirmation and transcendence, most of the jokes about older people analyzed in his study were more likely to represent them in a negative way, whereas jokes about children were more likely to represent them in a positive way. Davies (1977) found similar results, with particularly negative representations of older women. Demos and Jache (1981) analyzed the messages in birthday cards, finding that more of the cards portrayed aging negatively than positively. An analysis of over 2,000 cartoons from magazines revealed a generally negative view of older adults, with recurring negative themes such as sexual dysfunction and ultra-conservatism being the most prevalent. A more recent study of narrative jokes (Bowd, 2003) indicated that negative stereotypes of older adults were still prevalent. In this analysis of approximately 100 jokes, eight predominant stereotypes were revealed through content analysis,

including the impotent male, the vain/virile male, the insatiable female, the unattractive female, the infirm old person, the disinterested female, the forgetful old person, and the innocence of second childhood.

Although many people, including older people, may enjoy humor about aging, this type of humor can also be damaging. Whitbourne and Wills (1993) suggest that as humor with negative stereotypes of aging become more commonplace, some older adults may begin to accept these stereotypes. Further, younger persons and care providers may reinforce them in their behavior and interactions with older people, resulting in reduced self-esteem and self-efficacy. In fact, a phenomenological study by Bauer (1999) indicated that nursing home caregivers often humor as a means of avoiding the discomfort they felt about older adults' sexuality, which served to denigrate the residents and convey the message that their needs and desires were trivial.

Failed attempts at humor. Although not intended to do harm, failed attempts at humor can also produce negative affect and, therefore, are included as a category of negative humor. A failed attempt occurs when, regardless of intent, an effort at humor by one conversational partner fails to be interpreted as such by its receiver. This may be the result of the receiver either not understanding a particular humor-related attempt or not finding the humor funny or amusing for any variety of reasons. Francis, Monahan, and Berger (1999) found that the success or failure of humor-related attempts was dependent on several variables: the individuals involved, the setting, the timing, and the sensitivity of the humor producer to recognize the presence of these variables and identify

appropriate opportunities for humor use. When these variables are not aligned, attempts at humor have a greater chance of failing.

Research in advertising indicates that radio advertisements with either overly repetitive attempts at humor or humor not perceived as amusing to listeners were rated as irritating to those listeners (Duncan & Nelson, 1985). Failed attempts at humor may also be related to the current sociopolitical climate (Sev'er & Ungar, 1997). Because of the ever-changing sociopolitical landscape, the boundaries of acceptable humor fluctuate. As a result, there are few universal boundaries to guide individual behavior, and those who inaccurately gauge prevailing boundaries will continue to fail in their attempts at humor.

Gender may also play a role in whether attempts at humor result in failure or success. Statham, Richardson, and Cook (1991) found that male college instructors used humor in the classroom for different purposes than female instructors and that students' preferences for instructors' use of humor differed for male and female instructors. Their study indicated that students tended to rate female instructors who used humor to regain control of classroom disruptions as more likeable, but they rated male instructors who used humor to amuse or enliven their classrooms as more likeable. The gender of the receiver of the humor attempt may also impact how a humor-related attempt is perceived. Smeltzer and Leap (1988) found that within a work setting, women not only rated racist jokes as more offensive than men; they also rated racist jokes as more offensive than sexist jokes. These researchers also found that inexperienced employees tended to rate neutral jokes as more inappropriate than experienced employees.

Yip and Martin (2006) studied the association between humor styles (affiliative, self-enhancing, aggressive, and self-defeating) and social competence and emotional intelligence. They found that, "the absence of maladaptive styles of humor may be just as important as the presence of positive styles in social competence and emotional intelligence" (p. 1207). Similar to research on positive and negative exchanges, humor scholars are beginning to recognize the relative importance of both positive and negative forms of humor. Although positive humor may be beneficial, the detrimental effects of humor that is perceived as negative or unsupportive may be equally or even more harmful to an individual's well-being.

Humor-related exchanges in Health Care Settings

Healthcare settings, in particular, provide a rich environment in which to examine social interactions, and there is a growing research interest in examining humor-related social exchanges within these settings. Frances, Monahan, and Berger (1999) state:

> "Medical interactions between patients and providers, particularly in the case of severe illness, can be fraught with tension and distress. The threat of serious negative consequences, discomfort, debilitation, and even death frequently shadow such meetings. These tensions can be exacerbated by the awkwardness of nudity and physical examinations and the embarrassment of discussing intimate practices and personal failings" (p. 156).

Positive humor, however, can aid patients and practitioners in reframing unpleasant or traumatic events, help both patients and practitioners to distance themselves from difficult circumstances, and challenge self-defeating thoughts about a situation (Moran, 2002). Although assisted living and residential care environments differ in many ways from clinical healthcare settings, some aspects of the patient/provider relationship dynamic are similar to those of the resident/care worker relationship. In both settings, one

person is reliant upon another for care and support. Because of this similarity, humor research conducted in clinical settings may be particularly informative in understanding the potential role of humor-related exchanges within long-term care settings.

The recent interest in examining the function of humor within social interactions taking place in healthcare environments may be due in part to the increasing prevalence of a more psychosocial model of care (Engel, 1977), which has gained momentum over the last few decades. The psychosocial model differs from the traditional biomedical model in that it takes into account psychological and social factors within patients' lives and how they may impact patients' health. One aspect of the psychosocial model in which several researchers have chosen to focus is the examination of social interactions between healthcare professionals and patients. Within this body of literature, several researchers have focused specifically on the use of humor within social interactions.

In a pioneering article discussing the benefits of positive humor use for both critical care nurses and their patients and families, Leiber (1986) discussed humor's facilitative role in patients' coping processes, providing the caveat that the success of humor is dependent upon healthcare providers ensuring that its use is appropriately timed, that patients are receptive, and that the content of the humor-related material is suitable. Similar findings came from a study of humor use in therapy sessions, with patients expressing greater liking of therapists after shared humor-related experiences (Megdell, 1984). More recent work on physician-patent communication suggests that when physicians and patients used humor to lighten the mood, relieve tension, or to otherwise maintain rapport, patients are more likely to express high satisfaction with the

visit (Sala, Krupat, & Roter, 2002). Research also suggests that physicians who laugh more and use more humor in interactions with their patients are less likely to be sued for malpractice (Levinson, 1997).

Patients may also initiate humor in healthcare situations for a variety of reasons. For example, social humor can serve as a means of equalizing the balance of power between themselves and their healthcare providers (DuPre, 1998). In fact, some older adults who receive patronizing speech from healthcare professionals use humor-related retorts to express opposition while still maintaining an appearance of competence and politeness (Ryan, Kennaley, Pratt, Shumovich, 2000). The use of humor can also allow patients to save face (Ting-Toomey & Kurogi, 1998) and maintain a sense of dignity in potentially threatening or embarrassing situations. Hulse (1994) points out that humor-related exchanges initiated by nurses can facilitate communication between them and their patients, allow patients to feel a sense of control over their medical situations, and help both parties to find resolution in conflictual situations. She also notes, however, that many geriatric nursing curricula ignore the benefits of humor for older adults. Examining the use of humor in a rehabilitation setting, Scholl (2003) concluded that "humor can be a catalyst in the creation of an individualized, patient-centered culture, one in which patients' stories, memories, and feelings are encouraged and celebrated for the benefit of all" (p. 329).

Providers may also directly benefit from initiating humor in healthcare situations. Buxman (2000) identified multiple benefits of therapeutic humor use for critical care nurses, whose jobs are often stressful and chaotic. Chief among these benefits were as a

means of reframing and coping with tense situations and as a means of bonding or connecting with patients who may be scared or embarrassed. Wanzer, and colleagues (Wanzer, Booth-Butterfield, & Booth-Butterfield, 2005) found that nurses with high levels of humor orientation (predisposition to using humor in social situations; Booth-Butterfiled and Booth-Butterfield, 1991), were more likely to use humor as a coping mechanism, which was associated with higher job satisfaction. The presence of humor within social exchanges can also promote effective coping for home healthcare and hospice nurses, who must often deal with a wider array of patient conditions and complaints than nurses working in hospital settings (Davidhizar and Shearer, 1996). Schultes (1997) suggested that once patients' immediate concerns are met, completing a humor assessment and therapeutic humor plan can assist home healthcare and hospice nurses in providing creative, cost-effective, and personalized care for clients.

Social humor appears to have myriad benefits for both patients and providers, but research about the potential harm of inappropriate or mistimed humor in healthcare environments is lacking. One study examining the harmful side of social humor found that although humor has been recognized as useful for medical professionals in building rapport with colleagues, managing stress and avoiding burnout, morbid gallows humor used by many healthcare professionals as a coping mechanism in traumatic situations, should be closely monitored and kept from patients, who would likely regard it as cruel, insensitive, and uncaring (Bennett, 2003).

Whereas humor delivered in a sensitive and appropriate way appears to support healthy coping behaviors and facilitate positive interactions between providers and

patients, on its own, humor is not a panacea for developing person-centered care environments or strong, personal bonds between practitioners and patients. Rather, humor appears to be one of several important methods used to establish a culture of caring that promotes open communication, self-esteem, and both psychological and physical health and healing.

Although long-term care environments such as assisted living often make a concerted effort to differentiate themselves from clinical settings such as hospitals, or rehabilitation centers by providing more homelike environments and more personalized care (Zimmerman et al., 2003), care recipients in both types of settings still rely on healthcare professionals for needed assistance. Given this similarity, it seems plausible that supportive forms of humor that facilitate communication, promote bonding and inclusiveness, reduce the likelihood of malpractice suits in medical settings, and support understanding and respect between providers and patients in clinical settings might serve a similar purpose in interactions between direct care workers and residents in long-term care settings. Perhaps supportive humor-related exchanges could help facilitate bonds between workers and residents, reduce feelings of vulnerability, embarrassment, and fear among residents, and reduce the stress levels of residents and direct care workers alike.

Research Involving Older Adults and Humor

Existing research suggests that humor may play an important role in the lives of older adults for several reasons. Older adults, in particular those residing in long term care facilities, suffer from high rates of depression (Teresi et al., 2001). As a result, they may be particularly receptive to the mental health benefits of humor. Conversely, they

may also be especially susceptible to feeling criticized or rejected by social interactions involving humor unless that humor is delivered by a person who has previously established him or herself as kind, tolerant, and accepting (Richman, 1995). This final subsection briefly describes literature related to developmental aspects of humor and aging, as well as the function of humor related to older adults' coping and morale.

Effects of aging on humor. Life-span developmental psychology involves the study of constancy and change in behavior throughout the life course, emphasizing the dynamic and continuous interplay between gains and losses (Baltes, 1987). In addition to measuring these gains and losses, life-span theory demands that researchers also take into consideration the social and contextual circumstances that occur in concert with an individual's adaptation. This framework provides an excellent lens with which to view research related to changes in a person's sense of humor as they age.

Solomon (1996) surveyed 155 respondents, ranging in age from 20-94, to investigate the relationship between age and various aspects of humor, finding that while younger people appreciated satire, sarcasm, and irony more, older people appeared to enjoy more gentle forms of humor, laughed more, knew more jokes, and told more jokes than younger people. Her study indicated that humor was also associated with measures of aging well and with measures of perceived control. Shammi and Stuss (2003) examined the effects of normal aging on humor appreciation and comprehension by comparing 20 older adults over age 60 with 17 younger adults with a mean age of 29. Although the older adults sampled had greater difficulty selecting the correct punch lines to jokes and identifying funny cartoons from a lineup, they did not vary from younger

adults in their ability to identify humor-related statements or in responding with emotional appropriateness to humor-related stimuli. This finding may suggest that cognitive changes in older age have some impact on how humor is processed, but studies indicate thus far that emotional responses to and enjoyment of humor are similar at older and younger ages. Regardless of the cognitive changes age may bring about both older and younger adults appear to agree that humor is associated with the presence of positive emotions and an absence of malice (Mahony, Burroughs, and Lippman, 2002).

As research indicates, some changes in sense of humor may occur as people age; however recognition and enjoyment of humor appear to remain somewhat constant even into older adulthood. Future research may be able to better explain the changes that occur in sense of humor by examining the life circumstances (i.e., loss of a spouse, move to a new residence, onset of illness) that coincide with these changes.

Older adults' coping and morale. As individuals age, they often experience a variety of losses. These may include cognitive and physiologic losses, as well as the loss of close relationships when a spouse, friends, or family members die. While humor is certainly not able to reverse these losses, the presence of supportive humor may promote less damaging appraisals of these incidents and thus, better coping abilities and more positive mental health.

According to Simon (1990), the use of situational humor and coping humor predicts perceived health and morale in older adults. In a sample of assisted living residents, Celso & Ebener (2003) found that older adults with better health benefited more from coping humor strategies than their less healthy counterparts. Another small

study involving assisted living residents (Westburg, 2003) indicated that residents scoring higher in hope reported using humor more often as a coping strategy than those scoring lower in hope. Thorson and Powell (1996) found positive correlations between age and tendency to use humor as a coping strategy, as well as between age and humor creativity. Interestingly, while older respondents in their study reported more negative attitudes about humor-related people, they also reported more positive attitudes about humor itself. Richman (1995) illustrated that therapeutic humor and laughter, when used appropriately, can help relieve symptoms among depressed and suicidal older adults by increasing cohesion, creating a sense of social belonging, and reducing anxiety. Thomson (2004) came to similar conclusions, noting humor's ability to offer a sense of hope and stability in the midst of challenges associated with aging.

Summary

The literature presented in this section of the review indicates that humor within social interactions can be beneficial or detrimental, depending on how, when, and by whom it is delivered. Assisted living settings provide unique social environments within which to examine both positive and negative humor-related exchanges and how they may predict residents' mental health, as well as how humor-related exchanges may interact with other factors specific to individual residents and facilities.

Overall Summary of Literature Presented

Rowe and Kahn (1987) looked beyond the "gerontology of the usual" positing that lifestyle factors could greatly impact the way in which individuals age. Among others, they cited psychosocial factors, specifically social support and connectedness, as

having the potential to alter improve an individual's ability to age successfully or optimally. Recent research confirms their view, indicating that supportive social interactions, as well as the absence of harmful interactions, contribute to emotional health. Rook (1987) states,

> "The unifying theme of social support research is a concern with the different kinds of help provided through informal social ties to those who are experiencing life stress. Emotionally expressive behaviors, such as communication of liking or respect, may be construed as helping behaviors if their goal is to offer relief to the stressed recipient" (p. 6).

Humor is one such expressive behavior that has received comparatively little attention in gerontological literature, despite research indicating its ability to aid in coping with stressors, such as those associated with aging.

Similar to other domains or categories of social interactions, humor-related social exchanges may be perceived as positive or negative, thereby affecting the receiver's emotional well-being. Because direct care workers often provide much of the social interaction experienced by residents in long-term care, direct care workers' use of humor may have the potential to greatly impact residents' quality of life and mental health. Thus, whether and how direct care workers use humor in social interactions with residents is an important component of studying and evaluating social interactions between workers and residents. Quantifying the function of humor within social interactions between residents and care workers could potentially lead to humor-based training and other interventions designed to increase residents' feelings of psychological well-being by strengthening communication and enhancing relationships in long-term care facilities.

The humor-related social exchanges that occur between residents are also an important component to study. Because many assisted living residents have difficulty leaving the facility at times other than during scheduled outings, other residents are likely to constitute a large proportion of any given resident's social network. Social interactions with other residents that include affiliative or inclusive forms of humor are likely to contribute positively to residents' mental health, whereas interactions that include hurtful or harmful forms of humor are likely to detract from residents' mental health.

It is important to note that the newly developed humor measure within this study is not a scale that measures humor or funniness per se. Rather, it is a scale aimed at measuring an individual's perceptions of a social exchange that involved an attempt at humor, as well as his or her attributions of that exchange. In other words, the respondent's subjective report of what happened in a given set of exchanges is the focus of this study, not the actual success or failure of the humor itself.

Measuring humor from the standpoint of both positive and negative humor-related exchanges furthers the study of social interactions. Conducting this research in assisted living settings contributes to knowledge about the social environment of a specific type of group living setting, thereby adding to the long-term care literature as well.

Summary of Research Questions

The following questions are grouped according to outcomes.

1. **Reliability and Validity of New Humor-Related Social Exchange Measure**
    a) How reliable and valid is the new humor measures
        1) Are items and factor structure acceptable?
    b) Does the scale have convergent validity with other established measures?
2. **Predictors of Humor-Related Social Exchanges**
    a) To what extent do the following facility characteristics predict residents' frequency of humor-related social exchanges?
        1) staff hours per resident per day
        2) consistent assignment of direct care workers
        3) dining room seating policies
        4) profit status
    b) To what extent do the following resident characteristics predict residents' frequency of humor-related social exchanges?
        1) cognitive status
        2) the decision maker for the move to assisted living
        3) ADL function
        4) length of resident stay
        5) self-rated health
3. **Mental Health**

a) Controlling for resident and facility characteristics, are there any significant relationships between humor-related social exchanges and mental health?
b) Do humor-related social exchanges mediate any of the relationships between resident or facility characteristics and indicators of mental health?

Chapter 3: Methods

In order to examine how social interactions affected assisted living residents' psychological well-being and to explore whether social interactions involving humor were related to residents' well-being, interviews were conducted with residents living in assisted living communities in Clackamas, Multnomah, and Washington Counties in Oregon. The study design was a cross-sectional convergence sample of residents in 14 assisted living communities.

Data Collection

Design. Data was collected using survey questions asked during structured, one-on-one interviews with residents from assisted living communities throughout the Portland metropolitan area. A cross-sectional, two-stage sampling design was used. First, a random sample of assisted living facilities from each of the three counties mentioned above (Clackamas, Multnomah, and Washington) was drawn proportionate to the number of licensed facilities in each county. Based on criteria set forth by Zimmerman et al (2003), facilities with 16 or fewer beds were eliminated from the sampling frame, as these facilities may have been qualitatively different than their larger counterparts. Administrators of those facilities selected were contacted through letters and follow-up telephone calls or in-person visits in which the researcher explained the purpose of the study and asked for the facility's participation and cooperation in obtaining a list of eligible residents. Second, a list of residents was obtained through systematic sampling from the lists provided by each facility. Residents chosen were approached and asked for

their participation in the study. Those who consented to participate were interviewed. (The consent process will be explained in more detail later in this section.)

Power analysis. A power analysis was conducted a priori to determine an adequate sample size to detect statistically significant effects using GPOWER 3.0 (Erdfelder, Faul, & Buckner, 1996). For a multiple regression with 15 independent variables, a sample size of 139 is needed to attain a medium-sized effect of $R^2 = .15$ (Cohen, 1992) or $f^2 = .13$ (Cohen, 1969) with power = .80, $\alpha = .05$. According to Cohen (1992), detecting a medium effect size is a reasonable goal for social sciences research, as this effect size should be detectable to a careful observer. Thus, the planned sample size for this study was approximately 139.

Phase 1: sampling facilities. The first phase of sampling involved randomly selecting 12-15 facilities (4-5 facilities from Clackamas County, 4-5 facilities from Multnomah County, and 4-5 facilities from Washington County) to approach for participation. Administrators from these facilities were sent a letter from the Institute on Aging at Portland State University describing the study, as well as a letter of support from Oregon Department of Human Services, Seniors and People with Disabilities. Administrators were then contacted by telephone and/or in person to request their participation in the study. Those agreeing to participate were asked to provide the following information: (1) a current list of residents; (2) length of time in business, licensed capacity, and current census; (3) the facility's public/private and profit/nonprofit status; (4) whether the facility accepts Medicaid funding; (5) whether and how often the facility consistently assigns the same direct care worker to specific residents; and (6) the

average ratio of direct care workers to residents during the day, evening, and night shifts. The next phase of sampling involved identifying individual residents at each facility.

Phase 2: sampling residents. From the lists of residents provided by each participating facility, residents were systematically selected using three eligibility criteria: (1) 65 years of age, (2) living in the current room of the facility for at least 6 months (120 days), and (3) able to understand and speak English. The criteria that a resident had lived in the facility for six months was set to ensure time for social relationships to be built within the facility and for social relationships with social contacts outside of the facility to stabilize following initial move-in. Twelve to 16 residents were be identified from each facility in order to ultimately attain 10 participants at each location. The selection of additional residents was intended to account for residents who chose not to participate, who could not participate due to severity of cognitive health, or who provided incomplete data. From the list of residents provided by the facility, a systematic selection of residents was employed using a random start integer (Groves, Fowler, Couper, Lepkowski, Singer, & Tourangeau, 2004). A randomly chosen start number between 1 and 9 was used for the first facility. For each subsequent facility, the number 1 was added to the start integer until the number 9 is reached; then the start number returned to one, and the sequence began again. Counting from the start number, every *n*th resident was selected, with *n* depending on the size of the facility. For instance, if a facility had 80 residents, $n = 5$, so that 16 residents were chosen. A total of 224 residents were randomly selected.

Selected residents were approached by the interviewer, who introduced herself as a doctoral student from Portland State University, and attempted to strike up a friendly

conversation. After the interviewer and the resident had a few minutes to talk, the interviewer asked residents if they were interested in hearing more about the study. After explaining the study in detail, each resident was asked if he or she was willing to participate in the study. Residents who agreed were presented with a consent form, which was also discussed with him or her before requesting his or her signature.

Of the 224 residents randomly selected, 85 residents did not participate in the interview, either because they could not be reached or because they refused to participate. One hundred and thirty-nine residents agreed to be interviewed, and 130 completing the interview. Of the nine residents who did not complete the interview, one did not feel well and did not wish to continue, and eight had cognitive impairment issues.

Risks and safeguards. In-person interviews with residents were chosen as information sources for this study, as residents are considered the best authority on their own attitudes, feelings, and experiences (Kane, 2000). Research, however, indicates that older adults may be at risk for impaired understanding of informed consent information, especially if they have less formal education. Because taking the time to speak with older adults about a research study and their potential role in it appears to be the best way of aiding in their understanding of the consent process (Flory, 2004), the interviewer took as much time as was needed to approach each resident individually, introduce herself, establish communication (Kane, 2000), and build rapport. Once the resident appeared comfortable, the interviewer explained the purpose of the study, the risks, the amount of time the interview would take (between 45-60 minutes, and the resident's right to choose not to participate or to stop the interview at any time. If the resident agreed, only then

was he or she asked to sign the consent form. The risks and safeguards are outlined below.

Confidentiality. All conversations and observations were kept confidential. Each participant was assigned a unique survey identification number. Additionally, the interviewer made every effort to ensure that interviews took place in private areas, such as a resident's suite or a private dining room. She has and continues to protect all completed surveys and interview transcripts in a locked office and on a secure, password-protected server. Finally, no information gleaned from the interviews that would identify any one individual was shared.

Inconvenience. Older adult respondents may become fatigued more easily than their younger counterparts (Kane, 2000). As a result, the number of questions was limited as much as possible to keep each interview to no more than 45-60 minutes, which is within accepted limits (Carp, 1989). If a resident wanted to spend additional time socializing after the interview, however, the interviewer was happy to do so, and this occurred in many cases. The interviewer also paid close attention to various physical cues (yawning, fidgeting, restlessness, etc.) that indicated the resident was tired. In these cases, the interviewer suggested taking a break or continuing the interview at a later time.

Psychological discomfort. While the risk was quite minimal, it was possible that a resident could experience some psychological discomfort when recalling or revisiting an unpleasant social interaction. If a resident became particularly distressed or anxious while answering questions, the researcher was prepared to remind the resident that he or she need not answer the question of it resulted in feelings of sadness or anxiety. The

interviewer was also willing to stay and talk with the resident until he or she recovered from any distressful incidents or, if needed, locate a staff member who could assist. No such incidents occurred, however.

Measures

Facility and resident characteristics. As previously mentioned, the following information was collected from the administrator (or a designee) for each facility selected: (1) length of time the facility had been in business, licensed capacity and current census; (2) the facility's public/private and profit/non-profit status; (3) whether the facility accepted Medicaid funding and if applicable, the percentage of current residents using Medicaid (4) whether and how often same direct care worker was assigned to care for a specific group of residents (*never, not very often, sometimes, very often, always*); (5) the average number of direct care worker hours per resident per day; (6) the facility's policy about whether dining room seating was assigned or whether residents could vary where they sat at mealtimes.

The following information was collected for each participant in the study: age, gender, ethnicity, marital status, years of education, whose decision it was for the resident to move into the facility, and how much the resident wanted to move.

Physical health and function. Although physical health and function were not the central outcomes being assessed in this study, they were nonetheless important to consider given the interrelatedness of physical, mental, and emotional well-being for older adults (Kane, 2000). They were also included as covariates when examining the effects of social interactions on emotional well-being.

Activities of daily living (ADLs). The Katz Index of Independence in Activities of Daily Living (Katz, Ford, Moskowitz, Jackson, & Jaffee, 1963) measures a person's performance in six activities: bathing, dressing, toileting, transferring, continence, and feeding. A three-category scoring model is used for each activity: whether a person requires total assistance, some assistance, or no assistance. According to Pearson (2000), the scale can be improved by removing the item related to continence, which residents may also be reluctant to answer due to its highly personal nature. The coefficient of reliability for the resulting five-item scale is 0.94 – 0.97 (Pearson, 2000). Although the original scale was designed to be completed by a trained observer, the present study will employ residents' self-reports of whether they require "a lot of assistance," "a little assistance," or "no assistance" with the activities listed above.

Self-rated health. Research indicates that self-assessed global health is an independent predictor of functioning and mortality in older adults (Mossey & Shapiro, 1982; Lee, 2000). Self-rated health was measured by the commonly used single-item "How would you describe your health at the present time? Would you say it is excellent, very good, good, fair, or poor?" (0= *poor*, 4 = *excellent*; Ware & Sherbourne, 1992).

Cognitive functioning. One aim of this research was to explore the use of a measure of social exchanges with older adults in long-term care who may have some cognitive impairment. Thus, in the present study, the cognitive assessment serves as a means of measuring cognitive status for comparison purposes rather than as a means of screening out respondents with memory loss. The Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975), which takes approximately 5-10 minutes

to administer, is the most frequently used measure of cognitive function in social science research, and thus, is ideal for comparison purposes. The MMSE has a maximum score of 30 points and assesses six different domains of cognitive function: orientation to time and place (10 points), registration of three words (3 points), attention and calculation (5 points), recall of three words (3 points), language (8 points), and visual construction (1 point). In a review of the literature, Tombaugh and McIntyre (1992) concluded that the MMSE possessed moderate to high reliability coefficients, demonstrated high levels of sensitivity for cognitive deficits in patients suffering from moderate to severe Alzheimer's disease, and reflected the cognitive decline typical of dementia patients.

Social Interactions. ***Social network characteristics.*** The Lubben Social Network Index (LSNI; Lubben, 1988) is a brief instrument designed to gauge social isolation in older adults. It consists of an equally weighted sum of 10 items used to measure size, closeness, and frequency of contacts of a respondent's social network. Internal consistency for the LSNI is adequate with a Cronbach's alpha of .70 (Lubben, 1988). Because all participants in the present study resided in assisted living, the final item, which asks about a respondent's living arrangements, was omitted from the scale.

Positive and negative social exchanges. The Positive and Negative Social Exchanges scale (PANSE; Newsom, Nishishiba, Morgan, & Rook, 2003) was used to assess four domains of positive and negative social exchanges referred to in the literature: informational support, instrumental support, emotional support, and companionship. The four parallel negative domains were: unwanted advice, failure to provide help, unsympathetic or insensitive behavior, and rejection or neglect.

This measure, developed through extensive work combining qualitative methods (focus groups, card sorting tasks) and confirmatory factor analyses (Morgan, 2000; Newsom et al., 2003), was intended to provide a broad assessment of negative social exchanges with strong content validity and reliability. Twelve items (3 per domain) assess the frequency of positive exchanges experienced in the previous month. Participants were asked to consider the people "here at (facility name)" (such as friends who live at the facility and staff members who work at the facility). They were then asked a series of questions that began "In the past month, how often did the people here...?" Cronbach's alpha for the composite measure of positive social exchanges is .90 (Newsom et al., 2005). Parallel negative social exchanges were also assessed with 12 items (3 per domain) that asked about the frequency of negative exchanges with "people here" in the previous month. Cronbach's alpha for the composite measure of negative exchanges is also .90 (Newsom et al., 2005).

To assess appraisals of positive exchanges for the four domains, participants were asked to rate their satisfaction with each domain of exchange (e.g., "In general, how satisfied are you with the advice and information that you receive?"). If the participant reported having experienced one or more positive exchanges in that domain, ratings were made on a 4-point scale ranging from 0 "not at all satisfied" to 3 "very satisfied." Cronbach's alpha for the appraisals of positive exchanges is .68 (Newsom et al., 2005).

A parallel assessment of appraisals of negative exchanges was assessed, with participants being asked how bothered they were by each of the four kinds of negative exchanges. Four questions, such as "In general, how bothered are you when you receive

unwanted advice or opinions?" were rated on a 4-point response scale ranging from 0 (not at all bothered) to 3 (very bothered). Cronbach's alpha for the 4-item negative exchange appraisal measure is .75 (Newsom et al., 2005).

Humor. ***Humor-related social exchanges*****.** Many scales have been designed to measure humor-related constructs; however, to date, no existing set of items has been developed to measure the frequency and appraisals of humor within everyday social exchanges. One primary aim of this research was to do so. In developing items related to humor-related exchanges, a list of 30 items (17 items related to positive exchanges and 13 items related to negative items) were created to be pilot tested. Items related to positive humor-related exchanges were developed based on the main functions of humor identified in the literature, including increasing coping and decreasing negative mood (Martin & Lefcourt, 1983; Lefcourt & Martin, 1986), building rapport and reducing uncertainty (Norrick, 2003), and promoting affiliation or bonding (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003). Parallel items related to negative exchanges were developed to express negative outcomes of failed humor-related exchanges, including generating negative affect, creating hurt feelings or misunderstandings, and producing dislike or offense.

A pilot study using the full list of items with 15-20 older adults took place at Rose Schnitzer Manor, an assisted living facility in Portland. Respondents for the pilot study were recruited using convenience sampling with assistance from the facility's administrator and activities director, as well as through referrals from residents. Results

indicated adequate reliability, and those participating in the pilot had no trouble answering the questions. Thus, the items were retained for the main study.

Sense of humor. It is important to emphasize that measuring humor from a social exchange standpoint did not involve the researcher determining what was considered "humor-related." Rather, items were written to measure respondents' perceptions of attempts at humor use by members of his or her social network. Nonetheless, some respondents were more or less likely to respond positively or negatively to attempts at humor due to their own individual personalities. In order to examine the effect of individual differences in overall sense of humor, 10 items from the Humor Styles Questionnaire (HSQ-10) were used. These items were found to load to a single factor, and reliability analyses have indicated a good internal consistency with Cronbach's alpha of 0.77 to .081 (Martin et al, 2003).

***Open-ended humor questions*.** Three open-ended questions related to humor were included in the resident interview. These questions include: 1) *"How does the staff here react when you say something you think is funny or clever?"* 2) *"How do other residents here react when you say something you think is funny or clever?"* 3)*"What do people here laugh or joke about the most?"* The qualitative data resulting from these questions was intended to inform the results of the quantitative study, as well as to gather information or highlight possible relationships between humor and other factors that may be unintentionally overlooked. The number of these questions was kept to a minimum in order to reduce participant burden that may have resulted from a lengthier interview.

Mental health. A primary objective of this study was to examine relationships between positive and negative social exchanges and several aspects of mental health, as well as overall self-rated health. To meet this objective, measures related to depression, positive and negative affect, self-esteem, and loneliness were employed.

***Depression*.** Depressive symptomatology was assessed using the nine-item version of the Center for Epidemiological Studies – Depression scale (CES-D; Radloff, 1977) developed by Santor and Coyne (1997). This scale has exhibited good internal consistency among large samples of older adults (Newsom et al., 2005). This scale includes three subscales: depressive affect, well-being, and somatic symptoms.

Affect. Affect was measured using 10 items developed by Diener and Emmons (1984, Studies 3 through 5). The five positive affect adjectives (happy, joyful, pleased, enjoying myself, and satisfied) and five negative affect adjectives (unhappy, frustrated, blue, angry, and worried) are parallel in content, and both scales have high internal consistency (Watson, 1988) with a reported Cronbach's alpha of 0.87 in a national sample of older adults (Newsom et al., 2005). Respondents were asked the extent to which each adjective described their feelings over the past month, with ratings made on a 5-point scale ranging from 0 (*very slightly or not at all*) to 4 (*very much*).

***Self-esteem*.** Self-esteem was assessed using three items taken from the widely used scale developed by Rosenberg (1965). These included: 1) "I feel I am a person of worth, or at least on an equal plane with others," 2) "I feel I have a number of good qualities," and 3) "I take a positive attitude toward myself." Responses include: "1=strongly disagree," "2=disagree," "3=agree," and "4=strongly agree," with a higher

score on these items indicating greater feelings of self-worth. An internal consistency reliability estimate of this three-item composite was 0.91 in a national sample of older adults (Krause, 2004).

Loneliness. Six items from the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980) were administered to measure loneliness. Abbreviated and full-length versions of this scale have been used widely to assess loneliness in varying age groups, including the elderly (Martin, Hagberg, Poon, 1997; Russell, 1996). Participants were asked to rate how often they felt each statement on a 4-point scale, ranging from 0 (never) to 3 (often). Items will be averaged to create a composite measure of loneliness. Sample items include "How often do you feel that you belong to a group of friends?" or "How often do you feel isolated from others?" Because there was no known reliability analysis performed on the particular six items used in this study, a reliability analysis was performed. resulting in a coefficient alpha value of .72. These results are slightly lower than those achieved by Russell (1996) ranging from .89 to .94 for the full measure; however, the scale still has acceptable reliability.

Chapter 4: Results

Analysis Overview

Results from several types of analyses are reported. First, reliability analysis using Cronbach's alpha was used to determine initial reliability of the newly-developed humor scale. Second, confirmatory factor analyses (CFA) was used to determine whether each of the items in the new humor scale were consistent with the constructs of positive and negative humor-related exchanges in this sample. Third, descriptive statistics were included for both predictor variables and outcome variables used in subsequent bivariate correlation and multiple regression analyses. Finally, a series of bivariate correlations and multiple regressions were used to examine the relationships between resident and facility characteristics, positive and negative humor-related exchanges, and several indices of mental health.

Reliability Analyses

Several approaches were used to determine which of the 17 original positive humor items and 14 negative humor items to retain in the final version of the humor scale. The first step was to examine the normality for each item using SPSS. Table 1 shows the mean, skewness, and kurtosis for the original positive humor-related exchange items, and Table 1 shows these values for the original negative humor-related exchange items.

Table 1
Mean, Skewness, and Kurtosis of Original Positive Humor-related Exchange Items

Item (How often do residents and staff here…)	Mean	Standard Deviation	Skewness	Kurtosis
1. … spend time kidding around with you	3.28	0.87	-0.15	0.02
2. … use humor to help you cope when you're feeling down	2.73	1.08	0.22	-0.52
3. … share jokes or funny stories with you	3.15	1.09	-0.19	-0.71
4. … use humor to lighten the mood	3.25	0.92	-0.10	-0.04
5. … make fun of themselves	2.72	1.09	0.12	-0.60
6. … use humor to ease something that is bothering you	2.76	1.04	0.20	-0.45
7. … laugh with you about something funny	3.75	0.97	-0.59	0.06
8. … use humor to ease a tense or awkward situation	2.94	1.05	-0.16	-0.47
9. … help you feel less anxious with humor	2.74	1.15	0.16	-0.76
10. … help you see the funny side of life	3.03	1.10	0.01	-0.61
11. … appreciate your sense of humor	3.55	0.90	-0.16	-0.41
12. … help you feel better with humor	3.36	1.12	-0.55	-0.35
13. … help you feel less nervous with humor	2.68	1.16	0.05	-0.81
14. … laugh at themselves	3.05	1.02	-0.24	-0.69
15. … react favorably when you say or do something funny or clever	3.62	0.87	-0.53	0.26
16. … laugh or smile when you tell a joke or funny story	3.74	0.91	-0.60	0.53
17. … cheer you up with a joke or funny comment	3.26	1.07	-0.23	-0.45

Note. $N = 130$.

Table 2
Mean, Skewness, and Kurtosis of Original Negative Humor-related Exchange Items

Item (How often do residents and staff here…)	Mean	Standard Deviation	Skewness	Kurtosis
1. … create tension with inappropriate or insensitive jokes	2.06	.97	0.96	0.95
2. … use humor to avoid dealing with serious situations	2.45	1.14	0.33	-0.76
3. … make jokes/joking comments you don't think are funny	2.41	0.99	0.63	0.24
4. … make jokes about another when he/she is not present	2.36	1.15	0.53	-0.55
5. … try too hard to be funny	2.22	1.01	0.58	-0.16
6. … make jokes/joking comments that offend you	1.90	0.85	1.11	1.80
7. … tease you in a way that hurts your feelings	1.47	0.76	1.89	4.10
8. … tell jokes/make joking comments that are insensitive toward others	2.12	0.95	0.75	0.46
9. … make jokes/joking comments you don't understand	2.16	0.93	0.49	-0.28
10. … make fools of themselves trying to be funny	2.13	1.09	0.80	0.05
11. … make jokes or joking comments that make others uncomfortable	2.09	0.97	0.65	-0.04
12. … fail to appreciate your sense of humor	2.15	0.99	0.85	0.55
13. … fail to see the humor in life	2.88	1.06	0.41	-0.45
14. … make jokes or joking comments that criticize you	1.62	0.82	1.32	1.68

Note. $N = 130$.

Skewness measures the degree to which a distribution of values is not symmetrical around the mean. Skewness values of less than or equal to 2 were considered acceptable, and all items met this criteria. Kurtosis values were used to assess departures from normal distributions in terms of the peak and tail weight of a given distribution, and

kurtosis values of less than or equal to 7 were considered acceptable (Curran, West, & Finch, 1996). All humor-related exchange items met these criteria as well.

Next, an internal reliability analysis for all of the original items was conducted by obtaining a Cronbach's alpha, as well as alpha coefficients for the scale when individual items were deleted. Coefficient alpha is a measure of internal consistency, which gauges the degree to which a set of items are interrelated. A high coefficient alpha value is supportive evidence that several items represent a single underlying construct. Alpha values of over 0.8 are generally considered acceptable. It is important to note that Cronbach's alpha is sensitive to the number of items in a particular scale; scales with more items tend to yield higher alpha values.

The entire group of 31 original humor-related exchange items yielded an alpha value of .925. The deletion of any one item would not have markedly changed the alpha value of the scale. Next, separate alpha coefficients were computed for the 17 positive humor items and the 14 negative humor items. The alpha values were .937 and .876, respectively. Again, the deletion of any one item would not have substantially effected the scale's alpha value. Thus, items for the final version of the scale were chosen based on a combination of theoretical importance, distributional characteristics?, and high item-total correlation.

For the positive humor-related exchange scale the following six items were retained: (a) "… share jokes or funny stories with you," (b) "… use humor to ease something that is bothering you," (c) "… use humor to ease a tense or awkward situation," (d) "… appreciate your sense of humor," (e) "… help you feel better with

humor," and (f) "… cheer you up with a joke or funny comment." These items yielded an alpha value of .873, with item-total correlations of between .535 and .762. For the negative humor-related exchange scale, the following six items were retained: (a) "… make jokes/joking comments you don't think are funny," (b) "… make jokes about another when he/she is not present," (c) "… make jokes/joking comments that offend you," (d) "… tell jokes/make joking comments that are insensitive toward others," (e) "… make jokes or joking comments that make others uncomfortable," (f) "… make jokes or joking comments that criticize you." These items yielded an alpha value of .839 and item-total correlations ranging from .568 to .695. The entire 12-item humor scale had a coefficient alpha value of 0.87 in this sample. Thus, the scale appears to have good reliability for this sample.

Confirmatory Factor Analyses

Confirmatory factor analysis (CFA) was used to further examine the psychometric properties of the newly developed humor scale. Confirmatory factor analysis (CFA) can be employed to examine whether or not data conform to a hypothesized structure or theoretical model (Maruyama, 1998). CFA is also useful in that it allows the researcher to examine whether a set of items relates to a construct or latent variable, which extends the regression models to include unmeasured variables. All models were tested using Mplus version 6.12 (Muthén & Muthén, 1998-2010).

Factor structure of the humor-related interaction scale. CFA was used to examine whether the six positive and six negative items in the newly developed scale

were related to the latent constructs of positive and negative humor-related exchanges, respectively. The a priori model hypothesized in this study is depicted in Figure 1.

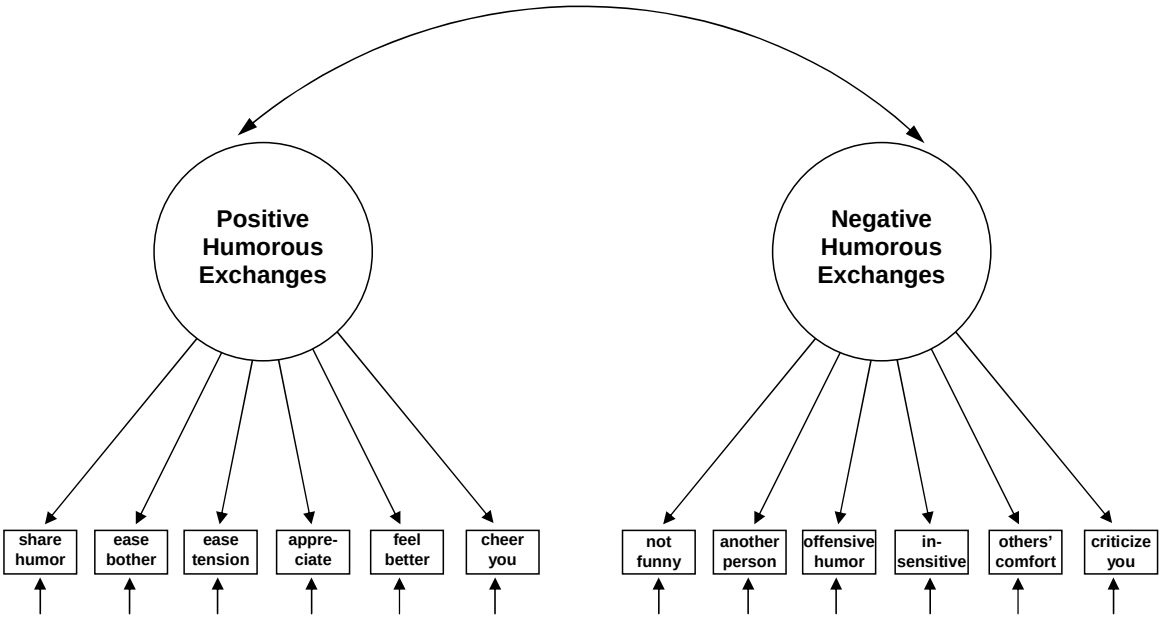

Figure 1.
Two-factor model of humor-related exchanges.

CFA includes several statistical calculations used to illustrate whether and to what extent the proposed model fit the data. The chi-square test indicates the amount of difference between expected and observed covariance matrices. Thus, chi-square values close to zero suggest little difference between the expected and observed covariance matrices—a good fitting model. In addition, the probability level should be greater than .05 to indicate good fit. Chi-square is affected by both sample size and model complexity, however. Whereas larger samples and models with more variables are likely to produce a

significant chi-square and lead to rejection of too many models, smaller samples and fewer variables may lead to rejection of too few models.

Alternative fit indexes are often recommended (e.g., Hu & Bentler, 1999) to avoid the problems with using chi-square as a model fit index in practice. One such index, Bollen's Incremental Fit Index (IFI; Bollen, 1989), was also calculated. Incremental fit indices, such as the IFI, compare a null model to the proposed model as a means of judging fit. IFI values above .95 are recommended. Another alternative to chi-square is the Standardized Root Mean Square Residual (SRMR), an absolute measure of fit that is defined as the standardized difference between the observed correlation and the predicted correlation with values closer to zero indicating better fit. The SRMR has no penalty for model complexity; however the SRMR is larger with smaller sample sizes (Kenny, 2011). A value less than .08 is generally considered a good fit (Hu & Bentler, 1999).

The fit of the model shown in Figure 1 was good: $\chi^2 = 81.587$, N = 130; IFI = .957; SRMR = .059. The two factors, positive and negative humor-related exchanges, were significantly correlated, $\psi = .442$, $p = .000$, suggesting that individuals who report more negative humor-related exchanges also tended to report more positive humor-related exchanges. Standardized loadings for both factors were significant and of acceptable magnitude, as shown in Tables 3 and 4. The two-factor model, χ^2 (53, N = 130) = 81.59 p = .01, fit significantly better than a one-factor model, which had an unacceptable fit χ^2 (54, N = 130) = 260.20, p = .00,. These results suggest that although the two factors of positive and negative humor-related exchanges are significantly correlated, they are distinct.

Table 3
Item Loadings for Positive Humor-Related Exchange Factors

Item (How often do people here…)	Standardized Loading
Positive Humor-Related Exchange Factor	
… share jokes or funny stories with you?	.728***
… use humor to ease something that is bothering you?	.673***
… use humor to ease a tense or awkward situation?	.798***
… appreciate your sense of humor?	.573***
… help you feel better by kidding around with you?	.789***
… cheer you up with a joke or funny comment	.824***

Note. $N = 130$; *** $p < .001$.

Table 4
Item Loadings for Negative Humor-Related Exchange Factors

Item (How often do people here…)	Standardized Loading
Negative Humor-Related Exchange Factor	
… make jokes or joking comments that you don't think are funny?	.631***
… make jokes about another person when he or she is not present?	.703***
… make jokes or joking comments that offend you?	.627***
… tell jokes or make joking comments that are insensitive toward others?	.769***
… make jokes or joking comments that seem to make others uncomfortable?	.745***
… make jokes that criticize you?	.638***

Note. $N = 130$; *** $p < .001$.

Measurement Validity

Measurement validity refers to the degree to which an item or set of items measures what the researcher intends to measure. Convergent validity deals specifically with the degree to which the set of items is similar to (converges on) other items or constructs that it should be similar to theoretically. In this study, items from the newly developed positive and negative humor-related exchange scales were compared with items from the Positive and Negative Social Exchange (PANSE) measure (Newsom et al, 2003), the Lubben Social Networking Index (LSNI; Lubben, 1988), and the 10-item sense of humor scale from the Humor Styles Questionnaire (HSQ; Martin et al, 2003).

The PANSE examines four domains of positive and negative social interactions, so it was expected that the positive humor-related exchange factor from the newly developed scale would be positively correlated with the positive social exchange factors from the PANSE, while the negative humor-related exchange factor from the newly developed scale would be positively correlated with the negative social exchange factors from the PANSE. The LSNI measures the size, frequency, and subjective closeness of an individual's social network, so it was expected that LSNI scores would be positively correlated with the positive humor-related exchange factor from the newly developed humor scale and negatively correlated with the negative humor-related exchange factor from the new scale. Finally, because people with a higher overall sense of humor score are expected to be more aware of both positive and negative forms of humor within social interactions than those with a lower sense of humor score, it was expected the ten-item

sense of humor measure from the HSQ would be positively correlated with both the positive and negative humor-related interaction factors from the new scale.

As illustrated in Table 5, most of the results were consistent with the hypothesized relationships, showing good construct validity for the newly developed humor-related

Table 5
Pearson Correlations of Positive and Negative Social Exchanges (PANSE), Lubben Social Network Scale (LSNI), and Humor Styles Questionnaire (HSQ) with Positive and Negative Humor-Related Exchanges

Variable	Positive Humor-Related Exchanges		Negative Humor-Related Exchanges	
	r	*p*	*r*	*p*
PANSE Domains: Positive				
Material assistance	.388	.000***	.011	.901
Emotional support	.686	.000***	.224	.010*
Helpful advice	.517	.000***	.264	.002**
Companionship	.525	.000***	.049	.582
PANSE Domains: Negative				
Failed attempts at help	.115	.192	.558	.000
Criticism	.161	.067	.611	.000
Unwanted advice	.260	.003**	.493	.000
Exclusion	-.004	.964	.388	.000
LSNI	.352	.000***	-.054	.544
HSQ	.378	.000***	.199	.023

Note. $N = 130$; * $p < .05$, ** $p < .01$, *** $p < .001$

exchange measures. The one exception was the relationship between negative humor-related exchanges and the LSNI. Although the relationship was in the hypothesized negative direction, the correlation was not significant (R = -.054, ns).

Descriptive Statistics

Resident and facility characteristics. Table 6 provides the minimum and maximum values, means, and standard deviations for all of the resident and facility variables in the study.

Table 6
Descriptive Statistics for Resident Characteristics and Facility Characteristics

Variable	*N*	Minimum	Maximum	Mean	SD
Resident Characteristics					
Interview length (minutes)	130	32.00	157.00	62.62	22.31
Age	130	58.00	99.00	84.45	8.87
Gender (male = 0, female = 1)	130	0.00	1.00	0.80	0.40
Marital status (0 = non-widowed, 1 = widowed)	130	0.00	1.00	0.61	0.49
Education	130	4.00	17.00	13.02	2.31
Race (0 = non-white, 1 = white)	130	0.00	1.00	0.95	0.21
Need for ADL assistance	130	0.00	13.00	2.85	3.28
Resident choice to move	119	0.00	1.00	0.56	0.50
Resident desire to move	119	0.00	2.00	1.12	0.68
Cognitive status	130	16.00	30.00	25.79	3.70
Sense of humor	130	2.10	4.70	3.61	0.58
Friendships with residents	123	0.00	10.00	3.03	2.45
Friendships with staff	123	0.00	20.00	2.63	3.12
Facility Characteristics					
Occupancy	130	50.00	100.00	86.99	14.73
Percentage on Medicaid	130	0.00	55.00	28.14	17.52
Time in business	130	8.00	20.00	11.45	2.85
Profit Status	130	0	1	0.68	0.47

Levels of care	130	0.00	1.00	0.31	0.46
Scheduled activities	130	0.00	2.00	1.33	0.59
Mealtime seating policy	130	0.00	1.00	0.47	0.50
Staff turnover	130	3.00	88.00	32.14	20.66
Direct care hours	130	0.68	3.00	1.22	0.66
Consistent assignment of care worker	130	1.00	4.00	2.89	0.73

Note. $N = 130$.

Because of low frequency, some categories for the marital status, race, levels of care, and mealtime seating policy variables had to be combined for subsequent analyses. . Of the 130 respondents who reported their marital status, 10 were never married, 15 were married or living as married, 79 were widowed, 25 were divorced, and one was separated. Thus, a decision was made to combine all of the responses into two responses: widowed and non-widowed. One hundred and twenty-four of the 130 respondents reported their race as White or Caucasian; two reported being Black or African American; two reported being Native American, Eskimo, or Aleut; one reported being Asian or Pacific Islander; and one reported being Hispanic or Latino. A decision was made to combine the responses into categories of white and non-white. The levels of care variable originally distinguished between stand-alone facilities with assisted living as the only level of care available, stand-alone facilities with multiple levels of care available, and facilities that were part of a campus with multiple buildings and multiple levels of care. Although only 40 of the 130 respondents reported living in a stand-alone facility with assisted living as the only level of care, the comparison of assisted living alone versus multiple levels of care was of greater interest in this study than whether or not the facility was stand-alone or part of a campus. Therefore, the two responses indicating multiple levels of care were

combined. Mealtime seating policy also began as an item with three possible responses: residents could sit wherever they chose with no assigned seating; residents were given an assigned seat, but they could arrange with staff to change that seat; and residents were given an assigned seat with changes rarely occurring. Since none of the 130 respondents to this item chose the last option, the variable was recoded to reflect either a flexible assigned seating option or a free-choice seating option.

Diagnostic Analyses

Outliers and Influential Cases. A series of diagnostic tests were performed to examine possible outliers and influential cases. Outliers are atypical data points that may result in regression results that fail to capture general relationships present in the majority of the data. Outliers on Y are indicated by studentized residual scores of over 2.5 to 3.0 (Neter, Kutner, & Nachtsheim, 2004). Outliers on X are indicated by leverage values of .2 to .5. Influential cases are cases that markedly influence the results of a linear regression model. These cases were identified by Cook's Distance and DFFit values of over 1.0.

Although no outliers on Y or X were found, cases 43, 98, 108, 111, 112, and 129 were found to be influential cases with DFFit values of 1.34, 1.22, -1.53, -1.33, 1.44, and 1.34, respectively. The regression model was tested a second time with the influential cases eliminated. Results were almost identical, with all of the same variables from the first model retaining their significance. Thus, decision was made to include the influential cases.

Multicollinearity. When two or more predictor variables in a regression equation are highly correlated with one another, multicollinearity occurs. Multicollinearity inflates standard errors and leads to unreliable regression coefficient estimates (Cohen, Cohen, West, & Aiken, 2003). Variance inflation factor (VIF), is one index used to measure problems with multicollinearity, with acceptable values of less than 7. The most striking evidence of multicollinearity occurred with the variable measuring the percentage of residents on Medicaid in each community (VIF = 57.33). Other variables also had high VIF values (profit status = 9.96, staff turnover = 27.66, direct care hours = 15.28, consistent assignment = 10.27). Although the reason for the high multicollinearity values appeared to be due to a relationship among several variables rather than simply due to a high bivariate association with one other variable, the association between the proportion of Medicaid recipients and occupancy was actually the primary source of the problem. Bivariate correlations showed a significant positive association between these two predictors ($r = .344$, $p < .05$). Because the Medicaid variable was not of primary interest in the present study, it was removed in order to reduce multicollinearity. The removal of Medicaid status brought all VIF values into acceptable range.

Homoscedasticity. One of the major statistical assumptions of a regression model is that error variance is constant or homoscedastic across values of X. It can often be detected with a scatter plot of the standardized observed residual against the standardized predicted error. Figure 2 illustrates this distribution of errors and suggests that heteroscedasticity is not a problem in this sample.

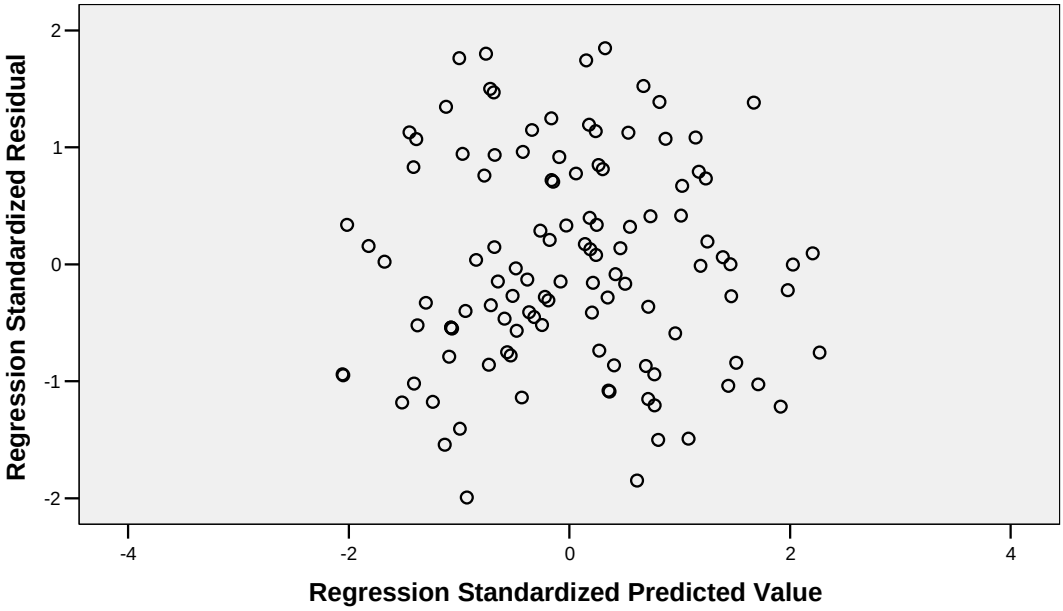

Figure 2.
Positive Humor-Related Exchanges, Scatter Plot of Standardized Residuals

Regression Analyses

First, a set of multiple regression models were tested to examine whether resident and facility characteristics predicted positive and negative humor-related exchanges. Next, a set of regression models tested whether positive and negative humor predicted mental health variables. Finally, a set of multiple regression models included both resident and facility variables and positive and negative humor-related exchanges as predictors of mental health variables.

Resident and facility characteristics predicting humor-related exchanges. Table 7 presents the results of the model regressing positive humor-related exchanges on all 21 of the resident and facility characteristic variables listed in Table 6. Because it was previously determined that positive and negative humor-related exchanges were

correlated, a mean score for negative humor-related exchanges was also included in this model in order to examine the effects of resident and facility variables independent of any effects of negative humor-related exchanges. Results indicated that the variables included in the model explained approximately 48 percent of the variance in positive humor-related exchanges, $R^2 = .48$, $F(21, 97) = 4.22$, $p < .01$. Other variables in this model that were significant were gender, sense of humor, friendships with staff, and negative humor-related exchanges. Male respondents tended to report more positive humor-related exchanges than females (b = .35, β = .017, SE = 0.09, $p < .05$), and respondents with higher sense of humor were also more likely to report positive humor-related exchanges, (b = .035, β = .025, SE = .09, $p < .05$). Because the CFA indicated the two variables were correlated, it was not surprising that negative humor-related exchanges predicted positive humor-related exchanges (b = .33, β = .29, SE = .10, $p < .01$) in this model. Although there was a positive relationship between close friendships with staff members and positive humor-related exchanges (b = .06, β = .22, SE = .09, $p < .05$), the number of close friendships a respondent had with other residents did not significantly predict positive humor-related exchanges.

Table 7
Resident and Facility Characteristics Predicting Positive Humor-Related Exchanges

Variable	B	S.E.	Beta	*t*	*p*
(Constant)	2.09	1.79		1.16	0.25
Resident characteristics					
Age	-0.01	0.01	-0.09	-0.86	0.39
Gender (male = 0, female = 1)	0.35	0.17	0.17	2.03	0.05*
Marital status (0 = non-widowed, 1 = widowed)	0.00	0.14	0.00	0.03	0.98
Education	-0.06	0.03	-0.18	-1.84	0.07
Race (0 = non-white, 1 = white)	-0.24	0.31	-0.06	-0.78	0.44
Need for ADL assistance	0.03	0.02	0.13	1.46	0.15
Resident choice to move	0.12	0.14	0.07	0.90	0.37
Resident desire to move	-0.03	0.11	-0.02	-0.29	0.78
Cognitive status	0.02	0.02	0.07	0.77	0.44
Sense of humor	0.35	0.12	0.25	2.87	0.01*
Friendships with residents	0.04	0.03	0.12	1.42	0.16
Friendships with staff	0.06	0.02	0.22	2.51	0.01*
Facility characteristics					
Occupancy	0.00	0.01	-0.06	-0.44	0.66
Time in business	-0.04	0.03	-0.15	-1.54	0.13
Profit status (0=non-profit; 1=profit)	0.12	0.19	0.07	0.67	0.50
Levels of care	0.12	0.23	0.07	0.51	0.61
Scheduled activities	0.25	0.23	0.18	1.08	0.28
Mealtime seating policy	0.34	0.25	0.21	1.38	0.17
Staff turnover	0.00	0.01	-0.06	-0.41	0.68
Direct care hours	0.23	0.14	0.19	1.63	0.11
Consistent assignment of care worker	-0.11	0.21	-0.10	-0.54	0.59
Negative humor-related exchanges	0.33	0.11	0.29	3.02	0.00***

$N = 119$; $R^2 = .48$, $p < .001$
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8 presents the results of the next model, in which negative humor-related exchanges were regressed on resident and facility characteristics and positive humor.

Table 8
Resident and Facility Characteristics Predicting Negative Humor-Related Exchanges

Variable	B	S.E.	Beta	*t*	*p*
(Constant)	6.00	1.49		4.03	0.00***
Resident characteristics					
Age	-0.02	0.01	-0.22	-2.17	0.03*
Gender (male = 0, female = 1)	-0.13	0.16	-0.07	-0.81	0.42
Marital status (0 = non-widowed, 1 = widowed)	0.06	0.13	0.04	0.44	0.66
Education	-0.02	0.03	-0.08	-0.81	0.42
Race (0 = non-white, 1 = white)	0.39	0.27	0.12	1.42	0.16
Need for ADL assistance	0.04	0.02	0.18	2.04	0.04*
Resident choice to move	0.01	0.12	0.01	0.08	0.94
Resident desire to move	0.17	0.09	0.16	1.81	0.07
Cognitive status	0.01	0.02	0.07	0.83	0.41
Sense of humor	-0.10	0.11	-0.08	-0.90	0.37
Friendships with residents	0.04	0.03	0.12	1.42	0.16
Friendships with staff	0.00	0.02	-0.01	-0.14	0.89
Facility characteristics					
Occupancy	-0.01	0.01	-0.23	-1.69	0.09
Time in business	-0.05	0.02	-0.21	-2.10	0.04*
Profit status (0=non-profit; 1=profit)	0.23	0.16	0.15	1.40	0.17
Levels of care	-0.17	0.21	-0.11	-0.82	0.42
Scheduled activities	-0.50	0.20	-0.40	-2.44	0.02*
Mealtime seating policy	-0.55	0.22	-0.38	-2.54	0.01*
Staff turnover	-0.01	0.01	-0.25	-1.62	0.11
Direct care hours	-0.09	0.13	-0.09	-0.74	0.46
Consistent assignment of care worker	-0.31	0.18	-0.32	-1.70	0.09
Positive humor-related exchanges	0.26	0.09	0.30	3.02	0.00*

$N = 119$; $R^2 = .46$, $p < .001$
* $p < .05$, ** $p < .01$, *** $p < .001$

Results from Table 6 indicate that the group of independent variables tested in this model accounted for approximately 46 percent of the variance in negative humor-related exchange scores (R^2 = .46, p < .001). As expected, positive humor-related exchanges were significantly associated with negative humor-related exchanges (b = .26, β = .30, SE = .10, p < .01). Two resident variables predicted negative humor-related exchanges as well. Older age significantly was associated with significantly fewer negative humor-related exchanges (b = -.02, β = -.22, SE = .10, p < .05), whereas the need for assistance with more activities of daily living predicted a greater frequency of negative humor-related exchanges (b = .04, β = .18, SE = .09, p < .05). Several facility variables also predicted negative humor-related exchanges. The longer a facility had been in business, the fewer negative humor-related exchanges residents from that facility reported (b = -.05, β = -.21, SE = .10, p < .05). Residents in facilities with a greater number of activities per day reported fewer negative interactions (b = -.50, β = -.40, SE = .16, p < .05). Residents in facilities with assigned seating also reported fewer negative humor-related exchanges. Finally, the more often residents had assigned dining room seating, the less frequently they experienced negative humor-related interactions, (b = -.55, β = -.38, SE = .15, p < .05).

Humor-related exchanges predicting self-rated health and mental health. The next step in the analysis process was to examine the relationships between positive and negative humor-related exchanges and mental health. Table 9 provides information about correlations between positive and negative humor-related exchanges and self-rated health and mental health outcomes.

Table 9
Bivariate Correlations Between Humor-Related Exchanges and Self-Rated Health and Mental Health Outcomes

Variable	Positive Humor-Related Exchanges		Negative Humor-Related Exchanges	
	r	*p*	*r*	*p*
Self-rated health	-.09	.32	-.20	.02*
Self esteem	.04	.67	.08	.37
Depression Factors				
Depression	-.06	.51	-.18	.04*
Well-Being	.21	.02*	.01	.95
Somatic	.11	.23	.34	.00***
Affect factors				
Positive mood	.29	.00***	-.07	.46
Negative mood	-.09	.32	.09	.33
Loneliness factors				
Social	-.29	.00***	.05	.57
Emotional	-.10	.25	.30	.00***

Note. $N = 130$.
* $p < .05$, ** $p < .01$, *** $p < .001$

More frequent positive humor-related exchanges were associated with well-being (r = .21, p < .05), and positive mood (r = .29, p < .01). In all of these significant relationships, as the number of positive humor-related exchanges increased, mental health increased. Conversely, reports of more frequent negative humor-related exchanges were associated with lower self-rated health (r = -.20, p < .05), more depressive affect (r = .18, p < .05), more somatic symptoms of depression (r = .34, p < .01), and more emotional loneliness (r = .30, p < .01). In this model, significant relationships indicated that as negative humor-related exchanges increased, both self-rated health and mental health decreased.

Full Models: Predictors of Self-Rated Health and Mental Health. The third step in the regression analysis was to include all resident and facility characteristics, as well as positive and negative humor-related exchanges, as predictors of self-rated health and mental health outcomes. Hierarchical regression was used to test all of these models in order to more easily determine the unique effects of both positive and negative humor-related exchanges over and above resident and facility characteristics. Step One included all of the resident and facility characteristics. Step Two included all of the variables from step 1, and the addition of positive humor-related exchanges. Step Three included all of the variables from steps one and two, with the addition of negative humor-related exchanges. Tables 10-18 provide information on the results of these models.

Self-rated health. Table 10 provides information on the full model with self-rated health as the outcome. The R-square for the models at all three steps of the hierarchical regression were non-significant (Step 3 R^2 = .10, ns). In fact, the only variable that

significantly predicted self-rated health was cognitive status. As cognitive status decreased, self-rated health increased (b = -.06, β = .-.23, SE = .03, $p < .05$).

Table 10
Self-Rated Health Hierarchically Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	.01	.01	.08	.01	.01	.07	.00	.01	.04
Gender (male = 0, female = 1)	-.02	.25	-.01	.01	.26	.00	-.01	.26	-.01
Marital status (0 = non-widowed, 1 = widowed)	.00	.21	.00	.00	.21	.00	.01	.21	.00
Education	.04	.05	.10	.03	.05	.08	.03	.05	.07
Race (0 = non-white, 1 = white)	.04	.45	.01	.03	.45	.01	.08	.46	.02
Need for ADL assistance	-.03	.03	-.10	-.02	.03	-.09	-.02	.03	-.07
Resident choice to move	-.02	.20	-.01	-.01	.20	.00	-.01	.20	.00
Resident desire to move	-.03	.15	-.02	-.03	.15	-.02	.00	.16	.00
Cognitive status	-.06*	.03	-.24	-.06*	.03	-.23	-.06*	.03	-.23
Sense of humor	-.01	.18	-.01	.01	.19	.01	-.01	.19	.00
Friendships with residents	-.01	.04	-.02	-.01	.04	-.01	.00	.04	.00
Friendships with staff	.01	.03	.02	.01	.04	.03	.01	.04	.03
Facility Characteristics									
Occupancy	.00	.01	-.08	-.01	.01	-.09	-.01	.01	-.11
Time in business	.01	.04	.03	.00	.04	.02	.00	.04	-.01
Profit status (0=non-profit; 1=profit)	.08	.27	.04	.10	.27	.05	.13	.28	.07
Levels of care	.18	.34	.09	.19	.34	.10	.16	.34	.08
Scheduled activities	.18	.34	.11	.19	.34	.12	.11	.35	.07
Mealtime	.13	.36	.07	.14	.36	.08	.06	.37	.03

seating policy									
Staff turnover	.00	.01	-.10	.00	.01	-.11	-.01	.01	-.14
Direct care hours	.08	.21	.06	.10	.21	.07	.08	.21	.06
Consistent assignment of care worker	-.18	.30	-.15	-.19	.30	-.16	-.24	.31	-.20
Humor-Related Exchanges									
Positive				-.07	.14	-.06	-.03	.15	-.03
Negative							-.15	.17	-.12
Constant	4.23	2.37		4.53*	2.47		5.42*	2.67	5.42
R^2	.09			.09			.10		
ΔR^2				.00			.01		

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Self-esteem. Table 11 provides the results of the model with self-esteem regressed on all other variables. While the resident and facility level predictors included in Step 1 accounted for approximately 30 percent of the variance in self-esteem ($R^2 = .30$, $p < .05$), neither positive nor negative humor were significant predictors of self-esteem in this model. Both sense of humor and direct care hours significantly predicted residents' self-esteem, however. Increases in both sense of humor (b = .40, β = .52, SE = .08, $p < .05$) and the number of direct care hours per resident per day (b = .20, β = .31, SE = .09, $p < .05$) were associated with higher self-esteem.

Table 11
Self-Esteem Hierarchically Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	.00	.01	.00	.00	.01	-.03	.00	.01	-.02
Gender (male = 0, female = 1)	-.13	.11	-.12	-.10	.11	-.09	-.10	.11	-.09

Marital status (0 = non-widowed, 1 = widowed)	-.08	.09	-.09	-.08	.09	-.08	-.08	.09	-.08
Education	-.01	.02	-.03	-.01	.02	-.08	-.01	.02	-.07
Race (0 = non-white, 1 = white)	.03	.20	.01	.02	.19	.01	.01	.20	.00
Need for ADL assistance	.00	.01	.03	.01	.01	.07	.01	.01	.07
Resident choice to move	-.03	.09	-.03	-.01	.09	-.02	-.01	.09	-.02
Resident desire to move	.03	.07	.04	.03	.07	.05	.03	.07	.04
Cognitive status	.00	.01	.02	.01	.01	.04	.00	.01	.04
Sense of humor	.36***	.08	.47	.40***	.08	.51	.40***	.08	.52
Friendships with residents	-.01	.02	-.03	.00	.02	.00	.00	.02	.00
Friendships with staff				-.01	.02	-.05	-.01	.02	-.05
Facility Characteristics									
Occupancy	.00	.00	-.10	.00	.00	-.11	.00	.00	-.10
Time in business	-.01	.02	-.09	-.01	.02	-.09	-.01	.02	-.09
Profit status (0=non-profit; 1=profit)	.00	.12	.00	.00	.12	.00	.00	.12	.00
Levels of care	.17	.15	.18	.17	.15	.18	.17	.15	.18
Scheduled activities	.05	.15	.06	.04	.15	.05	.05	.15	.06
Mealtime seating policy	.23	.16	.26	.22	.15	.25	.23	.16	.26
Staff turnover	.00	.00	-.15	.00	.00	-.16	.00	.00	-.15
Direct care hours	.20*	.09	.31	.20*	.09	.30	.20*	.09	.31
Consistent assignment of care worker	-.17	.13	-.29	-.18	.13	-.30	-.17	.13	-.29
Humor-Related Exchanges									
Positive				-.10	.06	-.19	-.11	.07	-.19
Negative							.02	.07	.03
Constant	2.73*	1.03		3.19**	1.06		3.09**	1.15	
R^2	.28*			.30			.30		
ΔR^2				.02			.00		

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Negative affect. Items from the negative affect factor of the CES-D (Radloff, 1977) included: 1) … "how often did you feel that you could not shake off the blues, even with help from your family and friends?" 2) "… how often did you feel depressed?" 3) "… how often did you feel sad?" Results for this factor regressed on all other variables are presented in Table 12. In Steps 1 and 2, higher sense of humor was associated with less negative affect; however this relationship became marginally significant in Step 3, when negative humor-related exchanges were added (b = -.27, β = -.25, SE = .01, $p <$ .10). Negative humor-related exchanges had a significant relationship to negative affect (R^2 change = .05, , $p < .05$). As negative humor-related exchanges increased, negative affect also increased (b = .31, β = .30, SE = .13, $p < .05$).

Table 12
Negative Affect Factor of Depression Hierarchically Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	.00	.01	.03	.00	.01	.03	.01	.01	.10
Gender (male = 0, female = 1)	-.11	.20	-.06	-.11	.21	-.06	-.07	.20	-.04
Marital status (0 = non-widowed, 1 = widowed)	-.11	.17	-.07	-.11	.17	-.07	-.13	.17	-.08
Education	-.04	.04	-.12	-.04	.04	-.12	-.03	.04	-.10
Race (0 = non-white, 1 = white)	.05	.36	.01	.05	.36	.01	-.07	.36	-.02
Need for ADL assistance	.01	.02	.04	.01	.03	.04	.00	.03	-.01
Resident choice to move	.01	.16	.00	.01	.16	.01	.01	.16	.00
Resident desire to move	-.05	.12	-.05	-.05	.12	-.05	-.11	.12	-.10
Cognitive status	.02	.02	.08	.02	.02	.08	.01	.02	.06

Sense of humor	-.31*	.14	-.24	-.31*	.15	-.24	-.27[a]	.15	-.21
Friendships with residents	-.01	.03	-.02	-.01	.03	-.02	-.02	.03	-.05
Friendships with staff	.03	.03	.13	.03	.03	.13	.03	.03	.14
Facility Characteristics									
Occupancy	-.01	.01	-.13	-.01	.01	-.13	.00	.01	-.06
Time in business	.00	.03	.00	.00	.03	.00	.02	.03	.06
Profit status (0=non-profit; 1=profit)	.32	.22	.20	.32	.22	.20	.25	.22	.16
Levels of care	-.24	.27	-.15	-.24	.27	-.15	-.19	.27	-.12
Scheduled activities	-.31	.27	-.23	-.31	.27	-.23	-.15	.27	-.12
Mealtime seating policy	-.15	.29	-.10	-.15	.29	-.10	.02	.29	.01
Staff turnover	.00	.01	-.10	.00	.01	-.10	.00	.01	-.02
Direct care hours	-.05	.17	-.04	-.05	.17	-.04	-.02	.16	-.01
Consistent assignment of care worker	-.04	.24	-.04	-.04	.24	-.04	.05	.24	.05
Humor-Related Exchanges									
Positive				-.01	.12	-.01	-.09	.12	-.10
Negative							.31*	.13	.30
Constant	2.88	1.90		2.93	1.98		1.07	2.09	
R^2	.134			.134			.181		
ΔR^2				.00			.047*		

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Well-being. The well-being subscale of the CES-D includes the following items: 1) … how often did you feel happy? and 2) … how often did you enjoy life? These items were inverse recoded to match the rest of the items in the CES-D. Table 13 provides the results of the model with well-being as the dependent variable. In this model the resident and facility variables significantly predicted residents' well-being, accounting for approximately 29 percent of the variance in well-being ($R^2 = .29$, $p < .05$). In Step 1,

higher need for ADL assistance (b = .05, β = .23, SE = .02, $p < .05$), higher sense of humor (b = .40, β = -.33, SE = .03, $p < .01$), and non-profit facility status (b = -.41, β = .27, SE = .20, $p < .05$) were associated with greater well-being. Younger age and more scheduled daily activities were marginally associated with greater well-being. Results in Step 2 were the same, with the exception of age, which no longer reached significance. In Step 3, results were also the same as in Step 1; however, scheduled activities did not reach significance, and age reached marginal significance (b = .02, β = .22, SE = .01, $p < .10$). Although positive humor was associated with greater well-being in the bivariate correlations in Table 7, neither positive nor negative humor-related exchanges had a significant effect on well-being in Step 3.

Table 13
Well-Being Factor of Depression Hierarchically Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	.02[a]	.01	.20	.02	.01	.19	.02[a]	.01	.22
Gender (male = 0, female = 1)	-.29	.18	-.16	-.27	.19	-.15	-.25	.19	-.13
Marital status (0 = non-widowed, 1 = widowed)	.10	.15	.07	.11	.15	.07	.10	.15	.06
Education	.03	.04	.09	.02	.04	.08	.03	.04	.09
Race (0 = non-white, 1 = white)	.21	.33	.06	.20	.33	.06	.14	.33	.04
Need for ADL assistance	-.05*	.02	-.23	-.06*	.02	-.24	-.05*	.02	-.22
Resident choice to move	-.17	.15	-.11	-.16	.15	-.10	-.16	.15	-.10
Resident desire to move	.00	.11	.00	.01	.11	.00	-.02	.11	-.02
Cognitive status	.00	.02	-.01	.00	.02	.00	.00	.02	-.01

Sense of humor	.43**	.13	.33	.41**	.14	.32	.40**	.14	.30
Friendships with residents	-.02	.03	-.08	-.02	.03	-.06	-.03	.03	-.08
Friendships with staff	.02	.02	.09	.03	.03	.11	.03	.03	.11
Facility Characteristics									
Occupancy	.00	.01	-.03	.00	.01	-.04	.00	.01	.00
Time in business	-.01	.03	-.04	-.02	.03	-.06	-.01	.03	-.03
Profit status (0=non-profit; 1=profit)	-.43*	.20	.27	-.45*	.20	.28	-.41*	.20	.26
Levels of care	-.39	.25	-.24	-.38	.25	-.24	-.36	.25	-.22
Scheduled activities	.45[a]	.24	.34	.44[a]	.25	.34	.37	.25	.28
Mealtime seating policy	-.22	.26	-.14	-.21	.26	-.14	-.12	.27	-.08
Staff turnover	.00	.01	.03	.00	.01	.03	.00	.01	.06
Direct care hours	-.07	.15	-.06	-.05	.15	-.05	-.04	.15	-.04
Consistent assignment of care worker	-.18	.22	-.18	-.19	.22	-.19	-.15	.22	-.15
Humor-Related Exchanges									
Positive				.06	.10	.07	.10	.11	.11
Negative							-.16	.12	-.15
Constant	1.59	1.72		1.86	1.79		.91	1.93	
R^2	.29*			.30			.31		
ΔR^2				.00			.01		

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Somatic symptoms. The somatic symptoms subscale of the CES-D includes the following four items: 1) … how often were you bothered by things that don't usually bother you? 2) … how often did you have trouble keeping your mind on what you were doing? 3) …how often did you feel like everything you did was an effort? 4) … how often was your sleep restless? Results from the hierarchical regression predicting somatic symptoms are presented in Table 14. In all three steps, lower need for ADL assistance

was associated with more somatic symptoms of depression. In Step 1 and Step 2, living in a facility with assisted living as the only level of care and living in a facility in business for more years were both marginally associated with fewer somatic symptoms; however these relationships became insignificant in the Step 3 model. The addition of negative humor-related exchanges in Step 3 did have an effect on the overall model (R^2 change = .05, b = .26, $p < .05$). As negative humor-related exchanges increased, somatic symptoms of depression increased. The only other significant predictor in this model was need for ADL assistance; greater difficulties with more activities was associated with more frequent somatic symptoms of depression (b = .05, β = .31, SE = .02, $p < .05$).

Table 14
Somatic Symptoms Factor of Depression Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	-.01	.01	-.08	.00	.01	-.07	.00	.01	.00
Gender (male = 0, female = 1)	-.10	.16	-.06	-.11	.16	-.07	-.08	.16	-.05
Marital status (0 = non-widowed, 1 = widowed)	.02	.13	.01	.02	.13	.01	.00	.13	.00
Education	-.04	.03	-.17	-.04	.03	-.15	-.03	.03	-.13
Race (0 = non-white, 1 = white)	.09	.28	.03	.10	.28	.03	-.01	.28	.00
Need for ADL assistance	.06**	.02	.31	.06**	.02	.30	.05*	.02	.24
Resident choice to move	-.04	.13	-.03	-.05	.13	-.04	-.05	.12	-.04
Resident desire to move	-.06	.10	-.07	-.06	.10	-.07	-.11	.10	-.12
Cognitive status	.02	.02	.13	.02	.02	.12	.02	.02	.10
Sense of humor	-.17	.11	-.16	-.19	.12	-.18	-.16	.11	-.15

Friendships with residents	.01	.03	.04	.01	.03	.03	.00	.03	-.01
Friendships with staff	.01	.02	.03	.00	.02	.02	.00	.02	.02
Facility Characteristics									
Occupancy	.00	.01	.05	.00	.01	.06	.01	.01	.13
Time in business	-.05[a]	.02	-.22	-.04[a]	.03	-.20	-.03	.03	-.14
Profit status (0=non-profit; 1=profit)	.04	.17	.03	.03	.17	.02	-.03	.17	-.02
Levels of care	-.41[2]	.21	-.31	-.42[2]	.21	-.31	-.37	.21	-.28
Scheduled activities	-.30	.21	-.28	-.31	.21	-.28	-.18	.21	-.16
Mealtime seating policy	-.23	.22	-.18	-.24	.23	-.19	-.09	.23	-.07
Staff turnover	-.01	.01	-.18	-.01	.01	-.18	.00	.01	-.10
Direct care hours	-.07	.13	-.08	-.08	.13	-.09	-.06	.13	-.06
Consistent assignment of care worker	.12	.19	.15	.14	.19	.16	.22	.19	.26
Humor-Related Exchanges									
Positive				.05	.09	.06	-.02	.09	-.03
Negative							.26*	.10	.30
Constant	2.61[a]	1.49		2.40	1.55		.81	1.62	
R^2	.23			.23			.28		
ΔR^2				.00			.05*		

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Positive affect. The mood/affect scale used in this study (Diener & Emmons, 1984, studies 3-5) includes two subscales: positive mood/affect and negative mood/affect. The positive affect items, which ask respondents to rate the frequency with which they experience happiness, enjoyment, satisfaction, joyfulness, and feelings of being pleased were recoded inversely to match the negative affect items, which ask respondents to rate the frequency with which they experience frustration, feeling blue, worry, anger, and unhappiness.

Results for the model regressing positive affect on all other variables are presented in Table 15. In this model, resident and facility characteristics entered in the first step of the hierarchical regression accounted for approximately 28 percent of the variance in positive mood ($R^2 = .28$, $p < .05$). In this model, having a higher sense of humor was significantly associated with greater positive affect. Those who reported having more friendships with residents were marginally significantly more likely to have greater positive affect. In the second model, positive humor-related exchanges did not have a significant effect on the outcome, and friendships with residents was no longer significant; however, sense of humor remained a significant predictor. In the third model, negative humor-related exchanges accounted for an additional three percent of the variance and had a significant effect on the model (R^2 change = .03, $p < .05$), and both positive and negative humor had a significant effect on positive mood. More frequent positive humor-related exchanges were associated with more positive mood (b = .20, β = .24, SE = .10, $p < .05$), and more frequent negative humor-related exchanges was associated with less positive mood (b = -.224, β = -.24, SE = .10, $p < .05$). Less positive mood was also associated with lower sense of humor scores (b = --.40, β = .34, SE = .12, $p < .01$) and marginally associated with fewer friendships with other residents (b = .05, β = .18, SE = .03, $p < .10$).

Table 15
Positive Affect Factor of Affect Hierarchically Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									

Age	.00	.01	-.01	.00	.01	-.04	.00	.01	.01
Gender (male = 0, female = 1)	-.13	.17	-.08	-.08	.17	-.05	-.05	.17	-.03
Marital status (0 = non-widowed, 1 = widowed)	.20	.14	.15	.21	.14	.15	.20	.14	.14
Education	.01	.03	.02	-.01	.03	-.02	.00	.03	.00
Race (0 = non-white, 1 = white)	.06	.30	.02	.04	.29	.01	-.05	.29	-.01
Need for ADL assistance	.03	.02	.13	.03	.02	.16	.02	.02	.12
Resident choice to move	-.07	.13	-.05	-.06	.13	-.04	-.06	.13	-.04
Resident desire to move	-.10	.10	-.10	-.09	.10	-.09	-.13	.10	-.13
Cognitive status	.01	.02	.04	.01	.02	.06	.01	.02	.04
Sense of humor	.47***	.12	-.40	.42***	.12	.36	.40**	.12	.34
Friendships with residents	.05[a]	.03	.18	.04	.03	.15	.05[a]	.03	.18
Friendships with staff	.03	.02	.12	.03	.02	.16	.04	.02	.16
Facility Characteristics									
Occupancy	-.01	.01	-.11	-.01	.01	-.14	.00	.01	-.08
Time in business	.00	.03	.01	-.01	.03	-.03	.01	.03	.02
Profit status (0=non-profit; 1=profit)	.05	.18	.04	.08	.18	.06	.03	.18	.02
Levels of care	-.04	.22	-.03	-.03	.22	-.02	.01	.22	.01
Scheduled activities	-.22	.22	-.19	-.21	.22	-.18	-.10	.22	-.08
Mealtime seating policy	-.21	.24	-.15	-.19	.23	-.14	-.06	.24	-.05
Staff turnover	.00	.01	-.14	-.01	.01	-.17	.00	.01	-.11
Direct care hours	-.11	.14	-.11	-.08	.14	-.08	-.06	.14	-.06
Consistent assignment of care worker	-.14	.20	-.15	-.17	.20	-.19	-.10	.20	-.11
Humor-Related Exchanges									
Positive				.14	.09	.16	.20	.10	.24
Negative							-.22*	-.11	-.24
Constant	4.23**	1.56		4.84**	1.61		3.49**	1.71	
R^2	.28*			.30			.33		

ΔR^2	.02	.03*

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Negative affect. Table 16 provides results of the regression of negative affect onto all of the independent variables in the study. None of steps in this hierarchical regression analyses accounted for a significant amount of variance in negative affect overall (R^2 = .21, ns). In fact, although lower sense of humor was a significant predictor of greater negative affect in Step 1 and a marginally significant predictor in Step 2, the only variable showing significant results in all three steps was cognitive functioning, with less impaired residents reporting more negative mood/affect (b = .05, β = .25, SE = .02, $p <$ .05).

Table 16
Negative Affect Factor of Affect Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	-.01	.01	-.07	-.01	.01	-.09	.00	.01	-.06
Gender (male = 0, female = 1)	.02	.19	.01	.05	.19	.03	.07	.19	.04
Marital status (0 = non-widowed, 1 = widowed)	-.14	.16	-.10	-.14	.16	-.10	-.15	.16	-.10
Education	-.04	.04	-.14	-.05	.04	-.17	-.05	.04	-.15
Race (0 = non-white, 1 = white)	.19	.33	.06	.18	.33	.05	.12	.33	.04
Need for ADL assistance	.02	.02	.10	.03	.02	.12	.02	.02	.09
Resident choice to move	-.04	.15	-.03	-.03	.15	-.02	-.03	.15	-.02
Resident desire	-.10	.11	-.10	-.10	.11	-.09	-.13	.12	-.12

to move									
Cognitive status	.05*	.02	.25	.05*	.02	.26	.05*	.02	.25
Sense of humor	-.28*	.13	-.22	-.25[a]	.14	-.20	-.23	.14	-.19
Friendships with residents	.00	.03	-.02	.00	.03	.00	-.01	.03	-.02
Friendships with staff	.01	.03	.05	.02	.03	.07	.02	.03	.07
Facility Characteristics									
Occupancy	-.01	.01	-.13	-.01	.01	-.15	-.01	.01	-.11
Time in business	.04	.03	.17	.04	.03	.15	.04	.03	.18
Profit status (0=non-profit; 1=profit)	.17	.20	.11	.19	.20	.12	.15	.20	.10
Levels of care	-.25	.25	-.16	-.24	.25	-.16	-.22	.25	-.14
Scheduled activities	-.08	.25	-.06	-.07	.25	-.05	.01	.26	.01
Mealtime seating policy	-.18	.26	-.13	-.17	.26	-.11	-.08	.27	-.06
Staff turnover	-.01	.01	-.17	-.01	.01	-.18	-.01	.01	-.14
Direct care hours	-.11	.15	-.11	-.09	.15	-.09	-.08	.15	-.07
Consistent assignment of care worker	-.10	.22	-.11	-.12	.22	-.13	-.08	.22	-.08
Humor-Related Exchanges									
Positive				-.09	.11	-.10	-.13	.11	-.15
Negative							.15	.12	.15
Constant	2.87	1.75		3.27[a]	1.81		2.35	1.96	
R^2	.21			.22			.23		
ΔR^2				.01			.01		

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Social loneliness. Table 17 lists the results for the hierarchical regression in which social loneliness was regressed on all of the predictor variables. The first model tested all predictors except positive and negative humor-related exchanges. These predictors accounted for approximately 30 percent of the variance in social loneliness ($R^2 = .30$, $p < .05$). In this model, higher sense of humor and more friendships with residents

were associated with less social loneliness. Fewer direct care hours per resident per day were also marginally associated with more social loneliness. The addition of positive humor-related exchanges did not alter the significant relationships from the first model; however, the addition of negative interactions in the final model accounted for an additional three percent of the variance in social loneliness (R^2 change = .03, $p < .05$), with more negative humor-related exchanges predicting greater social loneliness (b = .22, β = .24, SE = .10, $p < .05$). Higher social loneliness was also predicted by lower sense of humor scores (b = -.31, β = -.28, SE = .11, $p < .05$) and fewer friendships with residents (b = -.07, β = -.27, SE = .03, $p < .05$). The length of time a facility had been in business approached significance, with increases in time in business marginally significantly predicting greater social loneliness (b = .05, β = .21, SE = .02, $p < .10$).

Table 17
Social Loneliness Hierarchically Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	.00	.01	.03	.00	.01	.02	.00	.01	.07
Gender (male = 0, female = 1)	-.05	.15	-.03	-.03	.16	-.02	.00	.16	.00
Marital status (0 = non-widowed, 1 = widowed)	-.10	.13	-.08	-.10	.13	-.08	-.11	.13	-.09
Education	-.02	.03	-.08	-.03	.03	-.10	-.02	.03	-.08
Race (0 = non-white, 1 = white)	-.02	.27	-.01	-.03	.27	-.01	-.11	.27	-.04
Need for ADL assistance	.01	.02	.06	.01	.02	.07	.01	.02	.03
Resident choice	-.01	.12	-.01	.00	.12	.00	.00	.12	.00

to move									
Resident desire to move	.06	.09	.06	.06	.09	.06	.02	.09	.02
Cognitive status	.01	.02	.08	.02	.02	.09	.01	.02	.07
Sense of humor	-.35**	.11	-.32	-.33**	.11	-.30	-.31**	.11	-.28
Friendships with residents	-.07**	.03	-.26	-.06*	.03	-.24	-.07**	.03	-.27
Friendships with staff	.00	.02	-.01	.00	.02	.02	.00	.02	.02
Facility Characteristics									
Occupancy	.00	.01	-.10	.00	.01	-.11	.00	.01	-.06
Time in business	.04	.02	.18	.04	.02	.16	.05[a]	.02	.21
Profit status (0=non-profit; 1=profit)	.11	.17	.08	.13	.17	.10	.08	.17	.06
Levels of care	-.30	.21	-.22	-.29	.21	-.21	-.25	.21	-.19
Scheduled activities	-.29	.21	-.26	-.29	.21	-.26	-.18	.21	-.16
Mealtime seating policy	-.33	.22	-.26	-.32	.22	-.25	-.20	.22	-.15
Staff turnover	.00	.01	.11	.00	.01	.10	.00	.01	.16
Direct care hours	-.24[a]	.13	-.25	-.22[2]	.13	-.24	-.20	.13	-.22
Consistent assignment of care worker	.16	.18	.19	.15	.18	.17	.21	.18	.25
Humor-Related Exchanges									
Positive				-.07	.09	-.09	-.13	.09	-.17
Negative							.22*	.10	.24
Constant	2.37	1.45		2.70[a]	1.51		1.40	1.60	
R^2	.30*			.30			.34		
ΔR^2				.01			.03*		

Note: N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Emotional loneliness. The final set of models included emotional loneliness as the dependent variable. Table 18 provides the results of this hierarchical analysis. The first model tested all predictors except positive and negative humor-related exchanges. Results indicate that, as a group, these predictors accounted for approximately 25 percent

of the variance in emotional loneliness (R^2 = .25, p < .10), although this value was only marginally significant. In Step 1, being male, more need of assistance with ADLs, a lower sense of humor, and lower staff turnover were associated with greater emotional loneliness. Higher age and less education were marginally associated with greater emotional loneliness. Results for Step 2 were the same, except age became a significant predictor in this model. In the Step 3 model, however, only gender, sense of humor, and negative humor-related interactions were significant predictors. The addition of negative humor-related interactions accounted for an additional eight percent of the variance in emotional loneliness (R^2 change = .08, p < .01), with more negative humor-related exchanges predicting greater emotional loneliness (b = .41, β = .37, SE = .12, p < .01). Men (b = -.40, B = -.21, SE = .19, p < .05) and those with a lower sense of humor score (b = -.38, β = -.28, SE = .14, p < .05) reported more emotional loneliness.

Table 18
Emotional Loneliness Hierarchically Regressed on All Predictors

	Step 1			Step 2			Step 3		
Variable	B	S.E.	Beta	B	S.E.	Beta	B	S.E.	Beta
Resident Characteristics									
Age	-.02[a]	.01	-.21	-.02[a]	.01	-.21	-.01	.01	-.13
Gender (male = 0, female = 1)	-.46*	.20	-.24	-.45*	.20	-.24	-.40*	.19	-.21
Marital status (0 = non-widowed, 1 = widowed)	-.01	.16	-.01	-.01	.16	-.01	-.04	.16	-.02
Education	-.07[a]	.04	-.20	-.07[a]	.04	-.21	-.06	.04	-.18
Race (0 = non-white, 1 = white)	.38	.35	.11	.38	.35	.10	.22	.34	.06
Need for ADL assistance	.05*	.02	.21	.05*	.02	.21	.04	.02	.15

Resident choice to move	.04	.16	.02	.04	.16	.03	.04	.15	.02
Resident desire to move	.10	.12	.08	.10	.12	.08	.03	.12	.03
Cognitive status	.02	.02	.11	.02	.02	.11	.02	.02	.08
Sense of humor	-.43**	.14	-.32	-.42**	.14	-.31	-.38**	.14	-.28
Friendships with residents	-.02	.03	-.07	-.02	.03	-.06	-.04	.03	-.11
Friendships with staff	.03	.03	.11	.03	.03	.12	.03	.03	.12
Facility Characteristics									
Occupancy	-.01	.01	-.13	-.01	.01	-.13	.00	.01	-.05
Time in business	.00	.03	-.02	-.01	.03	-.02	.01	.03	.05
Profit status (0=non-profit; 1=profit)	.03	.21	.02	.04	.21	.02	-.06	.20	-.03
Levels of care	.06	.26	.03	.06	.27	.04	.13	.25	.08
Scheduled activities	.09	.26	.06	.09	.26	.06	.29	.26	.21
Mealtime seating policy	-.06	.28	-.04	-.05	.28	-.03	.18	.27	.11
Staff turnover	-.01*	.01	-.36	-.01*	.01	-.36	-.01	.01	-.27
Direct care hours	-.02	.16	-.02	-.02	.16	-.01	.02	.16	.02
Consistent assignment of care worker	-.23	.23	-.22	-.24	.23	-.23	-.11	.23	-.11
Humor-Related Exchanges									
Positive				-.03	.11	-.03	-.14	.11	-.15
Negative							.41**	.12	.37
Constant	5.84**	1.84		5.98**	1.91		3.53	1.97	
R^2	.25*			.25			.33		
ΔR^2				.00			.08*		

N= 119.
* $p < .05$, ** $p < .01$, *** $p < .001$, [a] $p < .10$.

Mediation analyses. Mediation occurs when an independent variable affects another variable, which in turn, affects an outcome variable. When there is no remaining direct effect of the independent variable on the outcome variable once the mediator is

accounted for, full mediation occurs. When the independent variable has a direct effect on the outcome variable and an indirect effect on the outcome variable, partial medication occurs. Figures 3 and 4 graphically illustrate partial and full mediation, respectively.

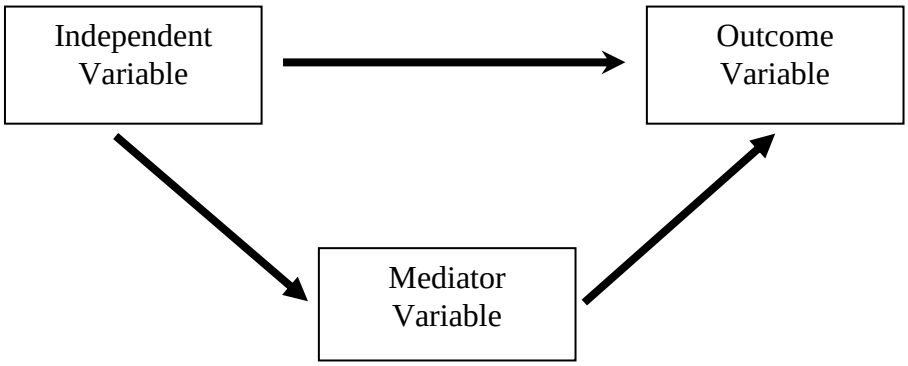

Figure 3.
Partial Mediation

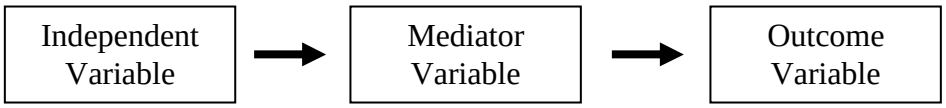

Figure 4.
Full Mediation

Determining whether a relationship between two variables is partially or fully mediated by a third variable is often accomplished using a four-step regression approach (Baron & Kenny, 1986). The first step involves testing the significance of the relationship between the independent variable and the dependent variable, omitting the possible mediator. The second step involves testing the significance of the relationship between the independent variable and the potential mediator. The third step involves testing the significance of the relationship between the potential mediator and the dependent variable Assuming relationships in steps one through three are significant, the final step involves conducting a regression analysis that includes both the independent variable and the potential mediator as predictors of the dependent variable. If both the potential mediator variable and the independent variable are significant in the Step 4 model, partial mediation is supported. If only the potential mediator variable is significant in Step 4, but the independent variable is no longer significant, the finding indicates a full mediation. Because this approach does not test the significance of the indirect effects and because it may result in more Type II errors (i.e., failure to identify some mediation effects), it should also be paired with a test of indirect effects (MacKinnon, 2008). Shrout and Bolger (2002) recommended the use of bootstrapping for standard errors, which seems to have greater power in small samples. Using bootstrap estimation, a confidence interval is calculated. A confidence interval containing zero indicates that the indirect effect is not significantly different than zero.

Based on theory and literature, several mediational models were tested for mediational effects. For each model, the aforementioned steps were completed, using

either positive humor-related exchanges or negative humor-related exchanges as potential mediators. Four cases emerged in which mediational relationships were supported by the findings.

First, results suggested positive humor-related exchanges partially mediate the relationship between friendships with residents and positive affect. Friendships with residents were significantly associated with positive humor-related interactions ($b = .11$, $SE = .03$, $p < .001$), positive humor-related interactions were significantly associated with positive affect ($b = .156$, $SE = .08$, $p < .05$), and friendships with residents were significantly associated with positive affect ($b = .08$, $SE = .02$, $p < .01$). Controlling for positive humor-related exchanges, friendships with residents continued to have a significant association with positive affect ($b = .06$, $SE = .02$, $p < .05$). Bootstrapping results also indicated a significant indirect effect, -.08, 95% CI (-.044, -.018). When remaining resident and facility characteristics were added to the model as covariates, results remained significant for all relationships, as did the indirect effect, -.02, 95% CI (-.049, -.001).

In the another case, results suggested that negative humor-related exchanges may only partially mediate the relationship between dispositional sense of humor and the depressive affect subscale of the CES-D (Radloff, 1977). Dispositional sense of humor was significantly associated with negative humor-related exchanges ($b = .247$, $SE = .107$, $p < .05$), negative humor-related exchanges were significantly associated with depressive affect ($b = .24$, $SE = .09$, $p < .01$), and dispositional sense of humor was significantly associated with depressive affect ($b = -.25$, $SE = .11$, $p < .05$). In the full model,

controlling for negative humor-related exchanges, sense of humor continued to have a significant relationship with depressive affect (b = -.31, SE = .11, p < .01). Bootstrap results also suggested a significant indirect effect, .06, 95% CI (.011, .150). These results changed with the addition of covariates, however. While all other relationships remained significant, the relationship between dispositional sense of humor and negative humor-related exchanges lost significance (b = -.32, SE = .13, ns), as did the indirect effect coefficient, .03, 95% CI (-.025, .115). MacKinnon, Fairchild, and Fritz (2007) have argued that nonsignificant results from the independent variable to the mediator may not always have to be significant in order for the mediation to occur; however, the lack of significance of the indirect effect does indicate that the mediational relationship is, overall, no longer significant when covariates were added in.

Results from a third instance supported with a model in which negative humor-related exchanges partially mediate the relationship between dispositional sense of humor and emotional loneliness. In this instance, sense of humor predicted negative humor-related exchanges (b = .25, SE = .11, p < .05), negative humor-related exchanges predicted emotional loneliness (b = .39, SE = .09, p < .001), and sense of humor predicted emotional loneliness (b = -.27, SE = .12, p < .05). Controlling for negative humor-related social exchanges, sense of humor maintained a significant relationship with emotional loneliness (b = -.36, SE = .11, p < .01). Bootstrap results indicated a significant indirect effect as well, .10, 95% CI (.027, .198). As in the aforementioned model, while all other relationships remained significant, the relationship between

dispositional sense of humor and negative humor-related exchanges lost significance (b = -.32, SE = .13, ns), as did the indirect effect coefficient, .03, 95% CI (-.053, .119).

Lastly, findings supported a model in which negative humor-related exchanges partially mediate the relationship between cognitive status and self-rated health. Cognitive status was significantly associated with negative humor-related exchanges (b = .03, SE = .02, $p < .05$), negative humor-related exchanges were significantly associated with self-rated health (b = -.22, SE = .11, $p < .05$), and cognitive status was significantly associated with self-rated health (b = -.05, SE = .02, $p < .05$). Controlling for negative humor-related exchanges, cognitive status continued to have a significant association with self-rated health (b = -.05, SE = .02, $p < .05$). Bootstrap results also indicated a significant direct effect, -.01, 95% CI (-.023, -.000). This relationship was altered by the addition of covariates in the study, however. The relationship between cognitive status and negative humor-related exchanges became nonsignificant (b = .02, SE = .02, ns), as did the relationship between negative humor-related exchanges and self-rated health (b = -.15, SE = .15, ns).

Qualitative data. Although this study is primarily quantitative in nature, several open-ended questions were asked in attempt to garner qualitative data that could help to explain quantitative results (Miles & Huberman, 1994). Responses to questions about how other residents responded to attempts at humor, how staff responded to attempts at humor, and what topic of conversation elicited joking or laughter from residents or staff at the facility were collected and informally coded. In the next chapter, resulting quotes

from the qualitative data collected will be provided, as well as explanations of how these data inform the quantitative study results.

Summary of Findings

In the Methods chapter of this document, several research questions were outlined. This section will discuss how the findings relate to those original research questions.

Research Question 1: How reliable and valid are the proposed humor measures? Reliability analyses, confirmatory factor analyses, and analyses indicating convergent validity indicate that the newly developed humor measure is both valid and reliable in this sample. Both the positive and negative humor-related exchange factors had acceptable alpha values and strong factor loadings, and showed convergent validity with several commonly used related scales.

Research Question 2: To what extent do resident and/or facility characteristics predict the frequency and appraisals of residents' humor-related exchanges? Several resident and facility characteristics were significantly associated with positive and negative humor-related exchanges, as measured by the newly developed scale. Gender, education, sense of humor, and friendships with staff were all significant predictors of positive humor-related exchanges; however, no facility characteristics emerged as significant predictors of positive humor-related exchanges. Age, activities of daily living function, length of time a facility had been in business, mealtime seating policy, and the number of scheduled activities per day were all significant predictors of negative humor-related exchanges.

Research Question 3: What relationships exist between resident and/or facility characteristics and mental health and between humor-related exchanges and mental health?

Relationships between resident and facility characteristics and mental health. Eight indicators of mental health, as well as self-rated health were measured in this study, and each was significantly predicted by at least one resident or facility variable. The following summary reflects results in which each mental health measure was regressed on all resident and facility variables without positive or negative humor-related exchanges.

Self-esteem was predicted by sense of humor and the number of care hours per resident per day. The negative affect factor of the depression scale was predicted by sense of humor. The positive affect factor of the depression scale was predicted by age (marginally significant), need for ADL assistance, sense of humor, a facility's profit status, and the number of daily activities scheduled (marginally significant). The somatic factor of depression was predicted by need for ADL assistance, the length of time a facility had been in business (marginally significant), and the levels of care offered at a facility. The positive affect factor of the mood/affect measure was predicted by sense of humor and the number of friendships a person had with other residents (marginally significant), while the negative affect factor was predicted by cognitive status and sense of humor. Social loneliness was predicted by sense of humor, friendships with residents, and the number of car hours per resident per day (marginally significant). Finally,

emotional loneliness was predicted by age (marginally significant), gender, education (marginally significant), need for ADL assistance, sense of humor, and staff turnover.

Relationships between positive and negative humor-related exchanges and mental health. Bivariate correlations between positive and negative humor-related exchanges and the various indicators of mental health and self-rated health indicated that positive humor-related exchanges were significantly with the well-being factor of depression, the positive affect factor of the mood /affect measure, and the social factor of loneliness. Negative humor-related exchanges were significantly associated with self-rated health, the depressive affect and somatic symptoms factors of the depression measure, and the emotional factor of loneliness.

Relationships between resident and facility characteristics, humor-related exchanges, and mental health. The following summary represents regression models in which all resident and facility variables, as well as positive and negative humor-related exchanges, were included as predictors of mental health and self-rated health. In these full models, self-rated health was predicted by cognitive status, self-esteem was predicted by sense of humor and care hours per resident per day. The negative affect factor of depression was predicted by sense of humor and negative humor-related exchanges; the well-being factor by age, need for ADL assistance, sense of humor, and profit status of a facility; and the somatic symptoms factor by need for ADL assistance and negative humor-related exchanges. Positive affect was predicted by sense of humor, friendships with residents, positive humor-related exchanges, and negative humor-related exchanges, whereas negative affect was predicted only by cognitive status. Finally social loneliness

was predicted by sense of humor, friendships with residents, the length of time a facility had been in business, and negative humor-related exchanges. Emotional loneliness was predicted by gender, sense of humor, and negative humor-related exchanges.

Mediational relationships. Several instances of mediation occurred within the present study. Positive humor-related exchanges partially mediated the relationship between friendships with residents and positive affect, and negative humor-related exchanges partially mediated the relationship between dispositional sense of humor and depressive affect, between sense of humor and emotional loneliness, and between cognitive status and self-rated health.

The final chapter will discuss these results and the theoretical and practical implications of this study.

Chapter 5: Discussion

Study Contributions

The main objectives of this study were to develop a new scale to measure social exchanges involving both positive and negative humor, to assess the scale's reliability and validity in a sample of older adult residents of assisted living communities, and to use the scale to examine relationships between resident and facility characteristics, humor-related social exchanges, and several indices of mental health. Although numerous scales have been created to measure a person's sense of humor as a trait or disposition, and several scales have been developed to assess the frequency of different domains of social exchanges a person experiences, to date there has been no scale linking the two.

Humor often occurs within the context of social exchange, as "… a way of incorporating, embracing, and even celebrating the contradictions, incongruities, and ambiguities inherent in interpersonal relationships" (Martin, 2007). Thus, humor by its nature is a common and important type of social exchange. Recent work in the field of social exchanges suggests that while positive exchanges are beneficial to individuals' health and well-being (Cohen & Wills, 1985; House, 1987; Kessler & McLeod, 1985), negative exchanges appear to be even more potently detrimental. The present study was the first to examine the effects of positive and negative humor-related exchanges on mental health to determine whether negative humor-related exchanges appear to follow the same pattern, as well as what factors may influence the frequency of these humor-related social exchanges.

Results of this study have much to offer, both theoretically and practically. Theoretically, this study adds to existing research on humor and coping, as well as contributing further knowledge about the various functions of humor within conversations and more broadly, within social relationships. This study also has much to add to researchers' understanding of social ties and their influence on mental health. Practically, this study builds on the work done by many researchers related to the way policies and practices within assisted living and other long-term care settings can impact residents' mental health and quality of life.

Study Findings

A variety of significant and meaningful findings emerged from this study. These are categorized in terms of findings related to validity and reliability of the newly developed humor-related exchange scale, those pertaining to variables that predicted positive and negative humor-related exchanges, those pertaining to humor-related social exchanges as predictors of mental health outcomes, and those pertaining to mediational models within the study.

Reliability and validity of the new humor-related social exchange scale. One of the main objectives of the present study was to develop a new measure designed to assess the frequency of positive and negative humor-related exchanges and to use that scale to examine relationships between these exchanges and several aspects of mental health, as well as self-rated health. The findings suggest that, similar to positive and negative social exchanges, positive and negative humor-related exchanges are

independent constructs. Although they are correlated, they are not opposite ends of the same continuum, and they should both be measured.

The results of the present study are consistent with research findings suggesting that people with higher dispositional sense of humor scores are more likely to notice, appreciate, and seek out positive humor (Martin, 2007). In the present study, there was a positive association between dispositional sense of humor and reports of positive humor-related exchanges. Such findings support convergent validity for the new scale. With the exception of the full Humor Styles Questionnaire (HSQ; Martin, 2003), which measures two positive humor styles and two negative humor styles, most dispositional sense of humor scales are positively biased and measure primarily positive aspects of humor. Although taken from the HSQ, the 10-item sense of humor scale used in this study also focused primarily on beneficial aspects of humor, and thus, is likely to have more in common with positive humor-related exchanges than negative humor-related exchanges. Finally, it is also notable that dispositional sense of humor measure had no significant relationship with negative humor-related exchanges, providing further evidence that the negative humor-related exchanges are a separate and distinct phenomena from positive humor-related exchanges.

Variables predicting humor-related exchanges. Although no facility characteristics were significantly associated with positive humor-related exchanges, resident characteristics of gender, education, sense of humor, and friendships with staff were all related to positive humor-related exchanges. Negative humor-related exchanges were predicted by age, need for ADL assistance, a resident's desire to move to the

assisted living community, the facility's occupancy, the length of time a facility had been open, the number of scheduled activities per day, the dining room seating policy at the facility, and the frequency with which direct care workers were consistently assigned to the same group of residents.

Predictors of positive humor-related exchanges. One important finding in this study was that the positive and negative humor-related exchange measures were positively correlated. This differs from the PANSE (Newsom et al, 2003), whose positive and negative exchange measures have been shown to be negatively correlated. This may be a function of some aspect of the present sample because the positive and negative factors from the PANSE showed no significant correlation in the present sample. The positive correlation between the two humor-related exchange factors may also be a function of how humor functions. In the literature, sense of humor is often defined in terms of a person's ability to both produce and appreciate humor (for a review, see Martin, 2007). It may be that people who can recognize and appreciate humor are more likely to report instances of both positive and negative humor, whereas people who have less ability to recognize and appreciate humor are less likely to report either positive or negative humor-related exchanges. So, although positive and negative humor are distinct, they may be linked to a person's ability to detect them in conversation.

In the present study, gender was one predictor of positive humor-related exchanges, with male residents being more likely to experience these exchanges. Martin (2007) asserts that although men and women do not differ significantly in the frequency of their creation and appreciation of humor, they use humor in different ways during

social exchanges. Although women frequently use humor as a means of developing or increasing intimacy or camaraderie, men are more likely to use humor as a form of self presentation or to establish a positive personal identity. In group living settings, such as assisted living environments, residents are often involved in public activities. Aside from scheduled recreational activities, most assisted living residents eat meals in a public dining room, receive transportation to and from appointments and shopping on a community van or bus, and enter and exit the facility through a front door used by everyone who enters and exits the facility. Additionally, some residents may also choose to read, watch television, or gather with others in any one of the public areas within many facilities, such as a living room, library, parlor, or bistro. These many opportunities for social exchange are likely to give residents ample opportunity to use humor to present themselves in positive ways to others through positive humor-related exchanges.

Education was also marginally significantly associated with positive humor-related exchanges. Those with lower education reported more positive humor-related exchanges. To date, there is very little research related to education and humor; however, a study by Ruch (1992) may provide some insight into this finding. In Ruch's study higher intelligence was weakly related to greater enjoyment of nonsense humor, which was characterized by bizarreness and absurdity, whereas lower intelligence was related to greater enjoyment of incongruity resolution humor, which was unambiguous, uncomplicated, and involved the application of stereotypes. While intelligence is not a proxy for education, it may provide some insight into how education may be related to positive humor-related exchanges. If the humor being used by staff and other residents

within assisted living facilities tended toward incongruity resolution rather than nonsensical humor, those with less education may have been more apt to enjoy it and thus, report more instances of positive humor-related exchanges.

As previously mentioned in the discussion of validity of the new measure, positive humor-related exchanges were significantly associated with dispositional sense of humor. Given the relatedness of the two measures, this finding is not surprising.

Friendships with facility staff were also positively related to positive humor-related exchanges. Insight into this finding may be related to the way staff and the care they give is perceived by residents. Bowers (2001) found that there were three ways residents described quality care: as a means of service, as a means of relating, or as a means of comfort. Residents who envisioned care as service viewed care in terms of their rights and the staff's responsibilities, and any relationships with staff were seen by the residents as purely professional. Those who viewed care as relating focused on the close friendships they had formed with staff, the personal stories and information shared between them and favored staff members, and the reciprocity of the relationships. The group who viewed care as a form of comfort saw good care in terms of small details that staff knew to attend to. They acknowledged and appreciated kindness from staff, but more so in terms of how that kindness affected their comfort than in terms of a friendship or personal relationship.

Responses from one of the open-ended items of the interview provide further insight into these findings. When asked, "How do staff here react when you say something you think is funny or clever?" residents responded in a variety of ways that

were consistent with results reported in Bowers's work. One resident who viewed care as service answered the aforementioned question this way: "I don't handle staff that way. I let them do their work, and I watch TV." Another resident responded, "I don't joke with staff. It doesn't really seem appropriate or necessary…" Conversely, residents who viewed care as relating made statements such as, "Usually, we have good laughs together. Some of the caregivers I'm not the best of friends with, but others ... we hit it off!" or, "They react... I like it. They laugh and say it's fun to be around me. It makes me feel good." Finally, one resident who likely viewed care as comfort stated, "We do very little talking - just about the weather. I think staff are instructed to not do too much joking, just to be helpful."

The finding that friendships with staff were associated with more positive exchanges may indicate that a core group of residents interviewed perceived care as relating. These residents engaged in humorous exchanges with staff members they considered friends on a regular basis. Conversely, residents who did not see staff members as friends or potential friends, did not engage positive humor-related exchanges. The fact that many residents enjoyed friendships with staff , and therefore an increase in positive humor-related exchanges, may be a reflection of the relationship-based model of care espoused by many assisted living communities. Whereas nursing homes are generally known as more institutional environments, assisted living communities emphasize a homelike setting and a social model of care that centers around relationships. Thus, the assisted living setting of this study may have also influenced this finding.

Predictors of negative humor-related exchanges. In the present study, younger age was associated with a greater frequency of negative humor-related exchanges. This result contradicts Martin and colleagues' (2003) finding that older people were less likely to engage in disparaging humor than younger people; however, the setting in which the two studies took place differed. Whereas Martin and colleagues' respondents were community-dwelling older adults, the present study was conducted among older adults in assisted living communities. Younger residents in long-term care may experience negative emotions about having to live in an environment in which they are surrounded by older, frailer people. Thus, they may be more sensitive to negative forms of humor. As people age, their cognitive ability is also more likely to decline, and with it, their comprehension of humor (Martin, 2007). Consequently, negative humor-related exchanges may have simply been more noticeable to younger residents who were experiencing less cognitive decline than older residents.

Residents who reported needing more assistance with activities of daily living also reported more negative humor-related exchanges. Lenze and colleagues (2001) reviewed many studies that indicate a positive relationship between disability and anxiety in later life. Results from these studies suggest that person who needs assistance with daily activities such as bathing and dressing may feel chronic stress or anxiety as a result. He or she may also begin to see him or herself as needy, frail, or incompetent. These feelings may negatively impact the way he or she appraises humor-related stimuli. Krause and Rook's (2003) research also indicates that people who experience negative exchanges often experience them chronically, rather than in isolation. Ongoing feelings

of incapableness and negativity could be factors that contributing to chronic negative exchanges, including those related to humor.

Surprisingly, residents with a desire to move to their assisted living facility reported higher instances of negative humor. This somewhat contradicts research indicating that voluntary moves are less likely to cause negative outcomes and that residents benefit from feeling they have some degree of control over the transition (Heisler, Evans, & Moen, 2004). If a resident who initially looked forward to moving found that life at the assisted living facility was not what he or she had expected, it is feasible that this person could appraise more exchanges with residents and staff as negative. It is also possible that a person whose expectations of a move to assisted living were disappointed could project a negative attitude, potentially encouraging negative exchanges or engaging others in criticisms or complaints about the facility itself or those living or working there.

Residents living in facilities with lower occupancy also reported marginally significantly more frequent negative humor-related exchanges. Although low occupancy can occur for a variety of reasons, it may be an indicator of some problem related to the management of that facility. Issue such as resident or family dissatisfaction, or a dissatisfactory state survey are two possible causes of low occupancy. When occupancy rates fall, many facility managers are forced to cut costs by reducing direct care staff or hours or budgets for activity supplies and entertainment, both of which, may result in dissatisfaction and negative feelings among residents, as well as staff. These negative feelings may be expressed through negative humor-related comments or exchanges.

The greater the number of years a facility had been in business, the fewer negative humor-related exchanges residents from that facility reported. One possible explanation for this finding is that facilities open longer may have staff who have had more time to learn detailed information about residents and their preferences, thus being able to create a more person-centered environment. Such an environment may lead to fewer negative exchanges. Each facility that participated in this study, however, had been in business a minimum of eight years, with the mean length of time in business being over 11 years. Even the facility open the least number years in the present study would likely have had time to adjust its practices to conform with the needs of residents. This relationship should be examined further in subsequent studies.

The number of daily scheduled activities was also associated with negative humor-related exchanges. Residents living in facilities with more activities scheduled on a daily basis were less likely to report negative humor-related exchanges. Given these results, it may seem somewhat surprising that no significant association was found between scheduled activities and positive humor-related exchanges. This combination of findings suggests that while participation in activities may equate to less time for residents to engage in negative exchanges, such participation does not necessarily lead to more positive exchanges. Another explanation of these findings relates to prior research, which indicates that participation in recreation programs can increasing feelings of independence and control, as well as decrease feelings of helplessness, anxiety, and depression (Lilley & Jackson, 1990). In other words, participation in activities appears to create positive affect and attenuate negative affect. If residents have more opportunities

to participate in activities and thus become happier in general, they may be less likely to participate in hurtful or harmful humor or appraise humor-related comments as critical or offensive. Results from the present study, however, do not support this model, as there was no association between scheduled activities and positive or negative affect.

Many social exchanges between assisted living residents take place at mealtime. In fact, when residents described their humor-related social exchanges in response to an open-ended question about topics people tend to laugh about most, many residents spoke of conversations they had experienced at their dining room tables at mealtime. Whether facilities had assigned seating or free seating policies predicted the frequency with which they reported negative humor-related exchanges. Residents in facilities with assigned seating experienced significantly fewer negative humor-related exchanges. This may be due to the fact that assigned seating provides consistency and the chance for residents to get to know one another better than if they constantly moved about and conversed with different people at each meal. Uncertainty Reduction Theory (URT; Berger & Calabrese, 1975) posits that people communicate to reduce the unpleasantness that is inherent in uncertainty about another person. Assigned seating brings with it a sense of predictability and the continued opportunity to reduce uncertainty and ambiguity. This may result in less social tension, more copasetic relationships among residents, and fewer negative humor-related exchanges. For these reasons, assigned seating, although more choice-restrictive than free seating, may be helpful in decreasing the number of negative humor-related exchanges among residents. It should be noted, however, that all 61 of the

facilities who indicated having policies of assigned seating also indicated that changes in assigned seat were arranged if a resident made a request.

Although research on the subject is somewhat inconclusive (Castle, 2011), some research indicates that there are many potential benefits to consistent assignment of direct care workers to the same group of residents. In the current study, residents living in facilities where consistent assignment happened more frequently were less likely to experience negative humor-related exchanges. When a direct care worker is unfamiliar with a resident and his or her needs and preferences, that direct care worker may make failed attempts at humor or inadvertently say something that is offensive or off-putting to a resident. Consistent assignment gives direct care workers the opportunity to get to know individual residents, both in terms of their care needs and in terms of their personalities. Thus, direct care workers who are consistently assigned are likely better able to tailor their exchanges to suit each individual.

Humor-related exchanges and mental health outcomes. Although positive humor-related exchanges were associated with positive affect, they were not significantly related to any of the other mental health outcomes. Negative exchanges, however, were associated with less positive affect, more depressive affect, more somatic symptoms, more social loneliness, and more emotional loneliness. The strong effects of negative humor in this study are consistent with literature from previous work. Prior research related to social exchanges indicates that while the presence of positive social exchanges may be beneficial to mental health, harmful or hurtful exchanges may be a more potent detrimental factor, and reducing or alleviating negative exchanges may be more

beneficial to mental health than the provision of additional support (Coyne & Bolger, 1990; Rook, 2001). Although relatively infrequent compared to positive exchanges, research indicates that negative exchanges are not isolated. In fact, they are consistent over time and cause ongoing stress (Krause & Rook, 2003). One hypothesis proposed for the greater impact of negative social exchanges is that the power of negative exchanges may lie in their relative infrequency. The fact that these exchanges do not occur as often as their positive counterparts may make them more memorable or unexpected. In the present study, negative humor-related exchanges followed the same pattern as in previous social exchange research. They occurred significantly less frequently than did positive humor-related exchanges and had a markedly greater effect on mental health outcomes than positive humor-related exchanges.

Mediational models. Both positive and negative humor served as mediators in several relationships between independent variables and mental health outcomes.

Positive humor-related exchanges moderated the relationship between friendships with residents and positive mood. Furthermore, the mediational results remained significant even after including all covariates from the study. Previous research supports these findings, suggesting that companionship may be more beneficial to psychological health than other types of positive exchanges (Newsom et al., 2005), that friends are effective at reducing loneliness and increasing morale (Lee & Ishii-Kuntz, 1987), and that friendships have a greater impact on subjective well-being than even family members (Larson, Mannell, & Zuzanik, 1986). Findings from this study suggest that companionship may influence these measures of psychological health partially through

positive humor-related exchanges. Residents with more friendships with other residents share more positive humor-related exchanges. These positive changes then appear to increase positive mood.

Negative humor-related exchanges appeared to mediate the relationship between dispositional sense of humor and depressive affect. In other words, a person's ability to detect humor within an exchange and to appraise it as negative was associated with the number of negative humor-related exchanges he or she reported. Those negative humor-related exchanges were then associated with more depressive affect. While these relationships were significant in the simple model, when covariates were added, the significant relationship between sense of humor and negative humor-related exchanges was lost. This may be due to the fact that other covariates, such as disability (as measured by need for ADL assistance), age, or gender, were partially responsible for the association between sense of humor and negative humor-related exchanges. When the effects of those variables were controlled for, the relationship between sense of humor and negative exchanges no longer reached significant levels.

Negative humor-related social exchanges also served to partially mediate between sense of humor and emotional loneliness. Similar to the aforementioned model those with higher sense of humor scores detected and appraised certain exchanges as containing negative humor, and their higher reports of these negative humor-related exchanges were associated with emotional loneliness. Emotional loneliness is typical of people who have lost an irreplaceable social tie, such as a spouse, parent, or child. Because many of the participants in this study, were widowed, they may have been particularly likely to

experience emotional loneliness as well. Adding covariates into this model, however, altered its significance in the same way as the aforementioned model, with other covariates changing the relationship between sense of humor and negative humor-related social exchanges to be nonsignificant.

Finally, negative humor also appeared to moderate the effects of cognitive functioning on self-rated health. Those with lower cognitive function reported a higher frequency of negative humor-related exchanges, and those negative humor-related exchanges were associated with lower self-rated health. In a facility environment, residents without cognitive impairment may become frustrated by those with evidence of cognitive impairment. This was illustrated in several of the statements made by residents in the qualitative portion of the interview. When the interviewee was asked how other residents reacted when he or she told a joke or made a funny comment, he replied, “I just don’t joke with the guys at my table. One of them is off in his own world, and one from our table was already transferred to the other side [the memory care unit].” Another resident replied to the same question in this way: “They laugh. Depends on the resident, though. Some of them have no idea what’s going on, though.” If non-impaired residents are perceived to be “off in their own worlds” or to have “no idea what’s going on,” they may be more likely to be left out of attempts at humor or to be the targets of critical or malicious types of humor. Thus they may experience a greater number of negative humor-related exchanges. These exchanges may impact the way they perceive their own health. As Norrick (1993) asserted, humor is one effective means of maintaining social

norms, even when they are harmful. A person who witnesses others' jokes or comments about memory loss may begin to see him or herself as frail or incapable as well.

Implications

Theoretically, there are two main areas to which this research may contribute. The first area relates to Lazarus and Folkman's (1984) stress-appraisal-coping model, which posits that the way a person handles stressful experiences is dependent upon his or her subjective appraisal of those stressors. Humor may be one effective resource in the coping process (Martin & Lefcourt, 1983; Thorson & Powell, 1993). Results of the present study indicate that positive humor-related exchanges are associated with more positive mood, possibly due to these exchanges' ability to help individuals cope with stressors. In other words, sharing something funny or amusing may help individuals appraise stressors as less threatening or serious. For example, when asked what topic of conversation people at their facility laugh about the most, a common response pertained to the food served in the dining room. One resident stated, "We laugh about the food. Sometimes you don't know what it is!" Another commented, "The food is a big topic. The chef is a real nice guy, but sometimes we just don't like what he makes." In these cases, residents cope with their lack of satisfaction about the food by joking around about it with others, thereby decreasing the seriousness and magnitude of it as a stressor. The food may not be to residents' liking, but they can still find pleasure, connection, and possibly stress relief (Dixon, 1980) by commiserating together. How a person appraises a stressor may also be impacted by the person's mood. Similarly, whether and how a person views attempts at humor may also be related to his or her mood. Thus

understanding the relationship between mood, humor appraisal and coping may also be beneficial in improving mental health.

This study also illuminates the need for further exploration of negative humor as a threat to coping. While there is much research on humor as a means of coping, few studies have examined the influence of negative forms of humor on coping. Recent work has highlighted the role of humor in creating and maintaining social hierarchy, with lower ranking members of a group using it as a means of subordination, appeasement, and ingratiation, and higher ranking members using it to establish competition or dominance (Mahu & Dunbar, 2008). This and other studies underscore the need for an understanding of the context in which humor-related social exchanges take place, and how these exchanges then influence an individual's appraisal and ability to cope with stressors. In other words, older adults within certain social hierarchies may experience more negative humor-related exchanges because they appraise stressors more negatively and, therefore, cope more poorly. A less adaptive coping strategy would be expected to lead to poorer mental health. This may be evidenced in the relationships between cognitive status, negative humorous exchanges, and self-rated health. Initially, a person with cognitive impairment may not initially feel unhealthy or ashamed about his or her memory loss and may cope with it in a psychologically healthy way. However, if that person lives in an environment in which he or she consistently hears derogatory jokes or comments about people with memory loss, he or she may begin to feel stress and cope with his or her own symptoms in less healthy ways. Similar to other types of negative social exchanges,

negative humor-related exchanges appear to have detrimental effects on individuals' ability to appraise stressors in a way that allows for healthy coping.

Other theoretical implications of this research are related to Rowe and Kahn's (1987) work on successful aging and subsequently, Baltes and Baltes's (1990) work on optimal aging. Rowe and Kahn (1987) emphasized that a wide range of aging experiences exist and that a multitude of factors, including psychosocial factors, can affect the way a person ages. Baltes and Baltes (1990) argued that optimal aging involved maximizing remaining strengths, abilities, and resources, and adapting to or compensating for age-related losses. The resent study adds credence to these theories by further illustrating how residents who report more frequent positive humor-related exchanges also report more positive affect and those who report more infrequent negative social exchanges also exhibit better mental health. One way older adults may adapt to various challenges inherent in growing older is through the use of joking and humor. People with a sense of humor who experience more positive humor-related exchanges report more positive affect and arguably, age more successfully. Conversely, those who experience more negative humor-related exchanges experience poorer mental health outcomes and may age less successfully.

This study holds value in terms of practical applications as well. Many of the findings support best practices outlined by advocates of person-centered care and culture change in long-term care. These include an emphasis on residents forging personal relationships with both staff and other residents through consistent assignment and more direct care hours per resident per day. According to the tenets of person-centered care,

consistent assignment of direct care workers to a specific group of residents is thought to be a best practice in long-term care environments. This study supports that idea, showing that residents living in facilities with more frequent consistent assignment had fewer negative humor-related exchanges. One likely explanation for this association is that a direct care worker who spends more time relating to a specific resident comes to know and understand that resident's habits, preferences, and needs in more depth than a direct care workers who may only interact with or encounter that resident occasionally. Care workers who are more familiar with a resident's personalities and routines are also more likely to provide individualized care, develop trusting relationships, and interact with familiar residents on a more personal level. Residents living in facilities with more direct care hours per resident per day also reported better self-esteem. Most likely, care workers in a facility with more staff have more time to forge personal relationships with residents and to focus on each person as an individual. Although providers must be mindful of the cost of labor, providing adequate staffing levels is likely also an important factor in maintaining or improving residents' mental health.

In many long-term care settings, efforts to improve residents' quality of life take the form of support. Direct care workers provide instrumental support in the form of physical care. Activity programs offer opportunities for residents to socialize, exercise, and reminisce. Some communities also offer memory enhancement or "brain aerobics" programs to support residents' cognitive health. Although these activities may be enjoyable and helpful to residents, there may also be other, more effective ways to improve residents' mental health and sense of well-being. This study is consistent with

other research that indicates that it is not the provision of support, but rather the *prevention* of negative exchanges or experiences that have the greatest positive effects on well-being. In fact, a recent study found relational aggression to be quite prevalent in assisted living communities and that the degree of relational aggression residents experienced was related to several measures of subjective well-being (Trompetter, Scholte, & Westerhof, 2011). Increasing the focus on interventions that lessen or alleviate negative exchanges, including negative humor-related exchanges, specifically, may help providers to have a more positive impact on residents' mental health. One such intervention might include training direct care workers about negative humor-related exchanges, how and why they may occur, and how to prevent them during care routines. Another such intervention may be to train dining room staff and activity staff to recognize negative humor-related exchanges and to intervene in the least obtrusive way possible.

Relationships with other residents also played an important role in the present study, and interventions related to cultivating and supporting friendships among residents may also be worthwhile for providers to consider. Activities provide one means of social exchange for residents that could lead to friendships, and training activity professionals to be aware of strategies to help residents to converse and build rapport during activities may be one way of encouraging friendships. Another potential means of supporting opportunities for friendships among residents to develop and deepen is related to dining room seating. In many of the facilities in this study, assigned seating policies were in place, yet in commenting about what topics tend to incite laughter, several residents

asserted that they didn't have much in common with their tablemates, or that their tablemates were unable to hear or understand them. More careful attention to pairing residents with others who share the same interests or past experiences, or conversational abilities and preferences may also increase friendships among tablemates. It is also important to note that all facilities with assigned seating policies were also open to changing residents' assigned seats when such a change was requested.

Limitations

Combining both other residents and staff members into one group in questions about humor-related social exchanges was one major limitation of this study. Questions about humor-related social exchanges should be asked about other residents separately from questions about staff members. The decision to combine residents and staff into one group was made to decrease the length of the interview and respondent burden; however, residents' relationships with staff versus other residents likely differ, and thus, the frequency and type of humor-related exchanges also likely differed somewhat. With a briefer measure, such as the final version, it may be more feasible to ask about the specific source of the humor attempt.

Relatedly, investigating who initiates a positive or negative humor-related exchange is another question that warrants investigation. Krause and Rook (2003) posited that older adults who experienced negative social exchanges may not be simply the passive recipients of such exchanges. Rather, they may play some role in the frequency of their negative social exchanges. Exploring whether that type of relationship also occurs

with humor-related exchanges, regardless of who initiates the exchange, would be of value as well.

Additionally, the cross-sectional design of this study was a limitation. Although it was possible to detect significant relationships between variables, it was not possible to determine the causal direction that accounts for the association among variables. For instance, negative humor-related exchanges were significantly associated with social loneliness, but whether negative humor-related exchanges caused social loneliness or resulted from social loneliness is impossible to know in this study. With a longitudinal sample, a cross-lagged panel analysis could be used examine the causal relationship between two variables over time, each controlling for effects at earlier time points. For example a cross-lagged panel analysis could help to establish whether mood impacts the frequency of humor-related exchanges, whether the frequency of humor-related exchanges impact mood, or whether they take turns impacting each other. Such a study would also allow for the examination of possible moderators of the relationship between humor-related exchanges and mental health, such as mood. Furthermore, although the literature indicates that both positive social exchanges and positive forms of humor can serve as buffers to stress, the cross-sectional nature of his study prohibited an investigation of these relationships.

An additional limitation of this study was its sample size. Although the sample size in the present study was sufficient for the CFA of the newly developed humor scale (Gerbing & Anderson, 1993), it was not possible to fit a full structural model with the number of predictors and outcomes.. A larger sample size would have allowed for more

complex models to be tested because of a higher ratio of participants to parameters in the model (Tanaka, 1987).

Along the same lines, another limitation involves expanding the sample frame to allow for hierarchical linear modeling (HLM). Although this type of study requires a large sample size, HLM allows the researcher to study both within group and between group differences. In Oregon, all facility types except assisted living are licensed to allow residents to share a room. Such a comparison study could also investigate the effects of having a roommate versus a private room and how that arrangement might affect the frequency of positive and negative humor-related exchanges. In the current study, data is clustered within one type of facility. Despite attempts to randomize the sample as much as possible, the current study's clustered data potentially violates the independence of error assumption needed for regression. In other words, because all residents come from an assisted living environment, similarities within that environment may cause related errors. HLM eliminates clustered data, and therefore, the possibility of violating the independence of error assumption. A study using HLM would ideally involve a larger sample size with 5-10 cases per facility and 50 or more facilities needed.

Finally, one variable of interest, the length of time a resident had lived in the facility, was unintentionally omitted from this study. Although each resident randomly selected as a potential interview candidate had lived in their current facility for at least six months, his or her specific length of stay was not recorded. Because close relationships and adversarial relationships may develop or intensify over time, a resident's length of

stay may have been a factor in the frequency of positive and negative humor-related exchanges, as well as mental health.

Directions for Future Research

The present study was an initial attempt at examining humor from a social exchange standpoint. Results from the present study indicate that humor-related social exchanges are an area for growth, and there are many directions future research could take.

As mentioned in the previous section on limitations, investigating humor-related social exchanges with staff separately from those with residents would be beneficial. Some residents in the present study expressed the challenges in trying to evaluate both other residents and staff with one set of questions. When asked to do so, one female participant commented. “I know why you have to do this, but it’s hard. My conversations with staff can be so different that my conversations with residents.” Distinguishing between relationships with different levels of closeness among residents or staff may also provide more insight into what type and frequency of humor residents experience and how it affects their mental health. Exploring more complex relationships using Bowers’s or Weiss’s framework is one way in which this type of research could be structured. Although this scale was developed with long-term care residents in mind, it may be useful in non-institutional settings involving older adults as well.

A related area of research could include examining direct care worker and resident dyads to examine each person’s perceptions of humor-related exchanges within the relationship, how they are similar, and how they differ. This type of study could

contain an observation component as well as the newly developed humor scale. Such a study could also include the measurement of residents' perceptions of the meaning of care according to Bowers's framework as a predictor of the frequency and type of humor-related exchanges.

Another avenue for future research involves examining humor-related exchanges form a social network framework. Examining humor-related exchanges among members of older adults' social networks could address questions about which network members are less likely to have negative exchanges than others, about differences between more peripheral members and acquaintances, as well as difference between family members and friends.

The current study examined the association of positive and negative humor-related social exchanges with mental health and self-rated health. Future research could expand the scope of outcome variables to investigate the relationships between humor-related social exchanges and physical health using chronic conditions or other health outcomes. Many researchers have investigated the impact of humor on health with mixed results. The newly developed humor-related exchange scale could be used as a means of measuring social humor in a study related to physical health outcomes, preferably with a longitudinal design. Additionally, a longitudinal design in such a study would allow for the exploration of causal relationships, such as whether humor-related exchanges contribute to health conditions, whether health conditions impact the frequency of humor-related exchanges, or whether each contributes in some way to the other.

Finally, use of the newly developed humor-related exchange measure on different populations of older adults could continue to test its reliability and validity. The scale is designed for use in a group setting, but wording could easily be changed to fit many different environments.

Conclusion

The present study investigated relationships between resident and facility characteristics, positive and negative humor-related exchanges, and mental and self-rated health. In order to do so, a new measure of positive and negative humor-related exchanges was developed and tested. Results indicated that positive and negative social exchanges do predict several factors of mental health beyond what is predicted by an individual's sense of humor alone. Negative exchanges, in particular, appear to be important predictors of mental health and to a greater degree than their positive counterparts, which is consistent with recent literature from the areas of social exchanges. Additionally, negative humor-related exchanges predicted several mental health indices above and beyond many strong predictors such as ADL function and accounted for a relatively large portion of the variance in several models.

Findings from the current study not only warrant further research and testing of the newly developed scale in a variety of settings, they may also help direct policy and training in assisted living communities. Staff who are trained to use humor in appropriate ways – or possibly more importantly, to avoid humor that is hurtful, critical, demeaning, offensive, or seen as not funny – may be able to improve residents' mental health. Additionally, facilities that implement policies shown to lessen negative humor-related

exchanges and maximize positive humor-related exchanges may also impact residents well-being and enhance their relationships.

During the interview process, one resident stated, “We all seem to be looking for a joke or laugh that eases tension... and helps us to know each other better.” Humor is an important facet of the lives of many older adults, and it can serve many purposes within relationships. Continuing to study humor-related exchanges in a variety of settings and contexts has the potential to influence theory, as well as expand researchers’ knowledge about how conversational humor can impact the health and well-being of older adults in daily life.

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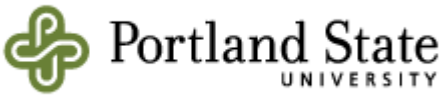
Appendix A: Survey Instrument



Research Study Consent Form for Residents

Who I am:
I am a doctoral student from Portland State University. I want to learn about social interactions in assisted living communities. I am especially interested in the role of humor in these interactions.

Why I am here:
I am interviewing residents about the way they talk with each other and with staff members here. I want to know about what kinds of conversations you have with other residents and with staff. I will ask you about how much you joke around with others here and how you feel about jokes or comments others make. I will also obtain some basic information about you (your age, birth date, and race/ethnicity) from your records here. I may also tape record a few minutes of our interview, so I can hear some of your thoughts in your own words.

Your participation:
You can choose to participate. You do not have to be in this study. If you are or if you are not, it will not affect your relationship with the staff here at all. You can also decide to stop this interview at any time.

Your time commitment:
Your interview will last about one (1) hour.

Logistics:
You can take a break or rest any time during this interview. If you need to take a break or go to the restroom, just let me know, and we'll stop.

Privacy concerns and confidentiality:
Your interview will take place in a private area where others cannot hear your answers. I will ask you questions, and I will write your answers down. Please answer the questions as honestly as you can. There are no right or wrong answers. I just want to hear your opinions.

Protecting the confidentiality of people's answers is very important to me. No one except me will ever see your answers. Results will be reported without personal details, and I always make sure that your responses to questions can not be linked to you.

Risks and safeguards:
There are very limited risks for a person participating in this study, including:

1. **Confidentiality** – I will keep all conversations, observations, and voice recordings confidential unless elder abuse is seen, referred to, or suspected. I will make every effort to ensure that interviews take place in private areas, such as your suite or a quiet alcove, and I will protect all completed surveys and interview transcripts in a locked office and on a secure, password-protected server at Portland State University. Finally, I will not share any information gleaned from the interviews in a way that would identify you or anyone else.
2. **Inconvenience** – I have limited the number of questions and will attempt to keep each interview to no more than one (1) hour. (Of course, if you would like to spend additional time socializing after the interview, I'd love to stay and talk with you!). I will offer you a break or the chance to discontinue the interview if needed or if you ask.
3. **Psychological Discomfort** – While the risk is quite minimal, it is possible that you could experience some psychological discomfort when recalling or revisiting an unpleasant social interaction with a resident or staff member. If you become distressed or anxious while answering these questions, I am prepared to stop the interview.

Contact information:
If you have concerns or problems about your participation in this study or your rights as a research subject, please contact the Human Subjects Research Review Committee, Office of Research and Sponsored Projects, 600 Unitus Bldg., Portland State University, (503) 725-4288 / 1-877-480-4400. If you have questions about the study itself, contact me, Ann McQueen, at (503) 725-9927 or mcqueena@pdx.edu or my faculty advisor, Dr. Jason Newsom at newsomj@pdx.edu or (503)725-5136.

By signing below, I agree to participate in this study.

_____

_____
Name Date

Resident Information

Assisted Living Community: _____
Resident ID #: _____

Date: _____ Start time:_____
End time: _____

Indicate gender of respondent : Male Female

0 1

1. What is your date of birth ? _____/_____/_____

2. What is your marital status ?

Never Married	0
Married or living as Married	1
Widowed	2
Divorced, Not currently Married	3
Separated	4
Refused	99

3. How many years of formal education have you had?

High School (Enter # of years, 1-11)	_____
Grade 12/ High School Diploma/ GED	12
Vocational/ Training after High School	13
Some college/ Associate Degree	14
College Graduate (4-5 yr program)	15
Master's Degree/ Post-Grad. training	16
Doctoral Degree (PhD, MD, EdD, DDS, JD)	17
Refused	99

4. How would you describe your racial or ethnic group? Please indicate any of these that apply.

	No	Yes	Refused
White/ Caucasian	0	1	99
Black/ African American	0	1	99
Native American, Eskimo or Aleut	0	1	99
Asian or Pacific Islander	0	1	99
Hispanic or Latino	0	1	99

Other : _____

5. Was the decision to move here made by you or others?

	No	Yes
You	0	1
Others 0	1	

6. How much did you want to move?

Not at all	0
Somewhat	1
A Lot	2

Cognitive Screening (Mini-Mental State Exam)

Confidential ID Code: _____ Date_____

Orientation

_____ (5) What is the (**year**) ___ (**season**) ___ (**month**)___ (**date**) ___ (**day**) ___
_____ (5) Where are we (**state**) ___ (**country**) ___ (**town**) ___ (**residence**) ___ (**room**) ___?

Registration

_____ (3) Name 3 objects: (**apple, table, penny**)
Take 1 second to say each.
Then ask the person all 3 after you have said them.
Give 1 point for each correct answer.
Then repeat them until he/she learns all 3. Count trials and record.
Trials _____

Attention and Calculation

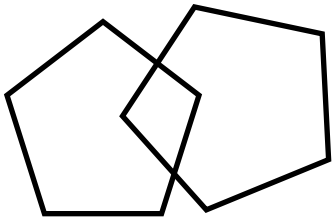
_____ (5) Count backwards from 100 by 7s (serial 7s backwards. 1 point for each correct answer.
Stop after 5 answers (**93, 86, 79, 72, 65**).
Alternatively spell "world" backward. (**D__ L__ R__ O__ W__**).

Recall

_____ (3) Ask for the 3 objects repeated above.
Give 1 point for each correct answer.
(If person couldn't remember the words after 5 trials, score is 0.)

Language

_____ (2) Show the person a pencil and a watch and ask him/her to name them.
_____ (1) Repeat the following "No ifs, ands, or buts"
_____ (3) Follow a 3-stage command:
"Take a paper in your hand, fold it in half, and put it on the floor."
_____ (1) Read and obey the following: **CLOSE YOUR EYES**
_____ (1) Write a sentence.
_____ (1) Copy the design shown.



_____ **Total Score (30 possible)**

Katz Activities of Daily Living Scale[2]
5-Item Version[3]
Cronbach's alpha = 0.94

	Amount of difficulty: 0 = no difficulty 1=a little difficulty 2=some difficulty 3=a lot of difficulty 4=unable to do						
1. How much difficulty, if any, do you have with bathing? (*Bathing includes rinsing or drying the body from the neck down (excluding the back) and may be either tub, shower, or sponge bath, getting into or out of tub or shower)*	0	1	2	3	4	88	99
2. How much difficulty, if any, do you have with dressing? *(can include putting on clothes, getting clothes from closet or drawer, using fasteners, tying shoes)*	0	1	2	3	4	88	99
3. How much difficulty, if any, do you have with using the toilet *(getting to, on and off, cleaning up afterward)*	0	1	2	3	4	88	99
4. How much difficulty, if any, do you have with getting into or out of a bed, chair or wheelchair*? (can be difficulty with any of these)*	0	1	2	3	4	88	99
5. How much difficulty, if any, do you have with grooming? *(Grooming includes brushing teeth, combing or brushing hair, washing hands, washing face and either shaving or applying makeup.)*	0	1	2	3	4	88	99

[2]Katz, S.C., Ford, A.B., Moskowitz, R.W. Studies of illness in the aged. (1963). The index of ADL: A standardized measure of biological and psychosocial function. *Journal of the American Medical Association, 185*, 914-919.

[3] Pearson V. I. (2000). Assessment of function in older adults. In: Kane RL, Kane RA, (eds.) *Assessing Older Persons: Measures, Meaning, and Practical Applications*. New York: Oxford University Press (pp. 17–48).

Humor Styles Questionnaire

People experience and express humor in many different ways. Below is a list of statements describing different ways in which humor might be experienced. Please read each statement carefully, and indicate the degree to which you agree or disagree with it. Please respond as honestly and objectively as you can. Use the following scale:

Totally Disagree	Moderately Disagree	Neither Agree nor Disagree	Moderately Agree	Totally Agree
1	2	3	4	5

1. You enjoy making people laugh. 1 2 3 4 5

2. If you are feeling depressed, you can usually cheer yourself up with humor. 1 2 3 4 5

3. You laugh and joke a lot with your friends. 1 2 3 4 5

4. If you are feeling upset or unhappy, you usually try to think of something funny about the situation to make yourself feel better. 1 2 3 4 5

5. You usually don't like to tell jokes or amuse people. 1 2 3 4 5

6. If you are feeling sad or upset, you usually lose your sense of humor. 1 2 3 4 5

7. You don't have to work very hard at making other people laugh -- you seem to be a naturally humorous person. 1 2 3 4 5

8. It is your experience that thinking about some amusing aspect of a situation is often a very effective way of coping with problems. 1 2 3 4 5

9. You usually can't think of witty things to say when you're with other people. 1 2 3 4 5

10. You don't need to be with other people to feel amused -- you can usually find things to laugh about even when you're by yourself. 1 2 3 4 5

Humor Related Social Exchanges

In general, how often do people here:	very often	often	some-times	not very often	never
1. Spend time kidding around with you?	5	4	3	2	1
2. Use humor to help you cope when you're feeling down?	5	4	3	2	1
3. Share jokes or funny stories with you?	5	4	3	2	1
4. Use humor to lighten the mood?	5	4	3	2	1
5. Make fun of themselves?	5	4	3	2	1
6. Use humor to ease something that is bothering you?	5	4	3	2	1
7. Laugh with you about something funny?	5	4	3	2	1
8. Use humor to ease a tense or awkward situation?	5	4	3	2	1
9. Help you feel less anxious by doing or saying something silly?	5	4	3	2	1
10. Help you see the funny side of life?	5	4	3	2	1
11. Appreciate your sense of humor?	5	4	3	2	1
12. Help you feel better by kidding around with you?	5	4	3	2	1
13. Help you feel less nervous by kidding around with you?	5	4	3	2	1
14. Laugh at themselves?	5	4	3	2	1
15. React favorably when you say or do something funny or clever?	5	4	3	2	1
16. Laugh or smile when you tell a joke or a funny story.	5	4	3	2	1
17. Cheer you up with a joke or funny comment?	5	4	3	2	1

In general, how often do people here:	very often	often	some-times	not very often	never
1. Create tension by making inappropriate or insensitive jokes?	5	4	3	2	1
2. Use humor to avoid dealing with serious situations?	5	4	3	2	1
3. Make jokes or joking comments that you don't think are funny?	5	4	3	2	1
4. Make jokes about another person when he or she is not present?	5	4	3	2	1
5. Try too hard to be funny?	5	4	3	2	1
6. Make jokes or joking comments that offend you?	5	4	3	2	1
7. Tease you in a way that hurts your feelings?	5	4	3	2	1
8. Tell jokes or make joking comments that are insensitive toward others?	5	4	3	2	1
9. Make jokes or joking comments that you do not understand?	5	4	3	2	1
10. Make fools of themselves trying to be funny?	5	4	3	2	1
11. Make jokes or joking comments that seem to make others uncomfortable?	5	4	3	2	1
12. Fail to appreciate your sense of humor?	5	4	3	2	1
13. Fail to see the humor in life?	5	4	3	2	1
14. Make jokes that criticize you?	5	4	3	2	1

Open-Ended Humor Questions

How do staff here react when you say something you think is funny or clever?

How do other residents here react when you say something you think is funny or clever?

What topic of conversation do people here laugh or joke about the most?

PANSE (Positive Exchanges) – Cronbach's alpha = 0.90 (0.75 for items 4,8,12, and 16)

In general, how often do people here (other residents, staff, volunteers)...	**Very Often**	**Often**	**Some-times**	**Not Very Often**	**Never**
1. ...offer helpful advice when you needed to make important decisions?	05	04	03	02	01
2. ...make useful suggestions?	05	04	03	02	01
3. ...suggest ways that you could deal with problems you were having?	05	04	03	02	01
4. In general, how satisfied are you with the advice you receive from people here?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01
5. ...do favors and other things for you?		04	03	02	01
6. ...provide you with aid and assistance?		04	03	02	01
7. ...help you with an important task or something that you could not do on your own?		04	03	02	01
8. In general, how satisfied are you with the help you receive from people here?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01
9. ...provide you with good company and companionship?	05	04	03	02	01
10. ...include you in things they were doing?	05	04	03	02	01
11. ...do social or recreational activities with you?	05	04	03	02	01
12. In general, how satisfied are you with the time you spend and the things you do with people here?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01
13. ...do or say things that were kind or considerate toward you?	05	04	03	02	01
14. ...cheer you up or help you feel better?	05	04	03	02	01

In general, how often do people here (other residents, staff, volunteers)...	**Very Often**	**Often**	**Some-times**	**Not Very Often**	**Never**
15. How often do you discuss personal matters or concerns with people here?	05	04	03	02	01
16. In general, how satisfied are you with the emotional support you receive from people here?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01

PANSE (Negative Exchanges) – Cronbach's alpha = 0.90 (0.68 for items 20, 24, 28, and 32)

In general, how often do people here...	**Very Often**	**Often**	**Some-times**	**Not Very Often**	**Never**
1. ... give you unwanted advice?	05	04	03	02	01
2. ... question or doubt your decisions?	05	04	03	02	01
3. ... interfere or meddle in your personal matters?	05	04	03	02	01
4. In general, how BOTHERED are you when people here give you unwanted advice or opinions?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01
5. ... let you down when you need help?	05	04	03	02	01
6. ... ask you for too much help?	05	04	03	02	01
7. ... fail to give you assistance that you were counting on?	05	04	03	02	01
8. In general, how BOTHERED are you when people here let you down or ask you for too much help?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01
9. ... leave you out of activities you would have enjoyed?	05	04	03	02	01
10. ... forget or ignore you?	05	04	03	02	01
11. ... fail to spend enough time with you?	05	04	03	02	01
12. In general, how BOTHERED are you when people here leave you out of things or don't spend enough time with you?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01
13. ... do things that were thoughtless or inconsiderate?	05	04	03	02	01
14. ... act angry or upset with you?	05	04	03	02	01
15. ... act unsympathetic or critical about your personal concerns?	05	04	03	02	01

In general, how often do people here...	Very Often	Often	Some-times	Not Very Often	Never
16. In general, how BOTHERED are you when people here act unkind or insensitive?	Show new response aid	Very 04	Some what 03	Not very 02	Not at all 01
17. Overall, how satisfied do you feel about your relationships with people here?		04	03	02	01

Lubben Social Network Index (LNSI)[4]
Cronbach's alpha = .70

1. How many relatives do you hear from or see at least once a month?

Zero	0
One	1
Two	2
Three or four	3
Five to eight	4
Nine or more	5
Unknown	88
Refused	99

2. Think about a relative (other than your spouse) with whom you have the most contact. How often do you hear from or see that person.

Less than monthly	0
Monthly	1
A few times a month	2
Weekly	3
A few times a week	4
Daily	5
Unknown	88
Refused	99

3. How many relatives do you feel close to? That is, how many do you feel at ease with, can talk to about private matters, or can call on for help?

Zero	0
One	1
Two	2
Three or four	3
Five to Eight	4
Nine or more	5
Unknown	88
Refused	99

[4] Lubben, J.E. (1988). Assessing social networks among elderly populations. *Family and Community Health, 11*, 42-52.

4. How many friends (not including relatives) do you feel close to? That is, how many friends (not including relatives) do you feel at ease with, can talk to about private matters, or can call on for help?

Zero	0
One	1
Two	2
Three or four	3
Five to Eight	4
Nine or more	5
Unknown	88
Refused	99

5. How many of these friends do you hear from or see at least once a month? (not including relatives)

Zero	0
One	1
Two	2
Three or four	3
Five to Eight	4
Nine or more	5
Unknown	88
Refused	99

6. Think about the friend (not including relatives) with whom you have the most contact. How often do you hear from or see that person?

Less than monthly	0
Monthly	1
A few times a month	2
Weekly	3
A few times a week	4
Daily	5
Unknown	88
Refused	99

7. When you have an important decision to make, how often do you have someone you can talk to, about it?

Never	0
Not very often	1
Sometimes	2
Often	3
Very Often	4
Always	5
Unknown	88
Refused	99

8. When other people you know have an important decision to make, how often do they talk to you about it?

Never	0
Not very often	1
Sometimes	2
Often	3
Very Often	4
Always	5
Unknown	88
Refused	99

Additional Questions:

How many residents here do you feel close to as friends? _____

How many staff members do you feel close to as friends? _____

Center for Epidemiological Studies - Depression (CESD)[5]
9-item Version[6]
Cronbach's alpha = 0.81

	During the past week…	Rarely or none of the time. (< 1 day)	Some or a little of the time (1- 2 days)	Occasion-ally or moderate amount of the time. (3-4 days)	Most or almost all of the time (5-7 days)	Un known	Refused
1.	How often were you bothered by things that usually don't bother you?	0	1	2	3	88	99
2.	How often did you feel that you could not shake off the blues, even with help from your family and friends?	0	1	2	3	88	99
3.	How often did you have trouble keeping your mind on what you were doing?	0	1	2	3	88	99
4.	How often did you feel depressed?	0	1	2	3	88	99
5.	How often did you feel that everything you did was an effort?	0	1	2	3	88	99
6.	How often was your sleep	0	1	2	3	88	99

[5] Radloff, L. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.

[6] Santor, D. A. & Coyne, J. C. (1997). Shortening the CES-D to improve its ability to detect cases of depression. *Psychological Assessment, 9,* 233-243.

	restless?						
7.	How often did you feel happy?	0	1	2	3	88	99
8.	How often did you enjoy life?	0	1	2	3	88	99
9.	How often did you feel sad?	0	1	2	3	88	99

UCLA Loneliness Scale
6-Item version
Cronbach's alpha = 0.89

How often do you feel ...	**often**	**sometimes**	**rarely**	**never**
1. isolated from others?	3	2	1	0
2. that you belong to a group of friends?	3	2	1	0
3. that no one really knows you well?	3	2	1	0
4. that your relationships with others are not meaningful?	3	2	1	0
5. that there are people who really understand you?	3	2	1	0
6. that you lack companionship?	3	2	1	0

Diener and Emmons Affect Scale
Cronbach's alpha = 0.87

During the past month, how often have you felt…?	very often	often	sometimes	not very often	never
1. happy	4	3	2	1	0
2. frustrated	4	3	2	1	0
3. blue	4	3	2	1	0
4. that you were enjoying yourself	4	3	2	1	0
5. worried	4	3	2	1	0
6. satisfied	4	3	2	1	0
7. angry	4	3	2	1	0
8. joyful	4	3	2	1	0
9. unhappy	4	3	2	1	0
10. pleased	4	3	2	1	0

Rosenberg Self-Esteem Scale[7]
3-Item Version[8]
Cronbach's alpha = 0.91

1. You feel you are a person of worth, or at least on an equal plane with others.

Strongly disagree	1
Disagree	2
Agree	3
Strongly Agree	4
Unknown	88
Refused	99

2. You feel you have a number of good qualities.

Strongly disagree	1
Disagree	2
Agree	3
Strongly Agree	4
Unknown	88
Refused	99

3. You take a positive attitude toward yourself.

Strongly disagree	1
Disagree	2
Agree	3
Strongly Agree	4
Unknown	88
Refused	99

[7] Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

[8] Krause. N. (2004). Assessing the relationships among prayer expectancies, race, and self-esteem in late life. Journal for the Scientific Study of Religion 43(3), 395–408.

Self-Rated Health[9]

1. In general, would you say your health is:

Poor	1
Fair	2
Good	3
Very Good	4
Excellent	5

[9] From MOS - SF36 Ware, J.E. & Sherbourne, C.D. (1992). The MOS 36-item Short-Form Health Survey (SF-36): Conceptual framework and item selection. *Medical Care, 30,* 473-483.

Appendix B: Human Subjects Approval

Portland State
UNIVERSITY

Human Subjects Research Review Committee

Post Office Box 751
Portland, Oregon 97207-0751

503-725-4288 tel
503-725-3416 fax
hsrrc@lists.pdx.edu

July 24, 2009

To: Ann McQueen

From: Nancy Koroloff, HSRRC Chair Nancy Koroloff MS

Re: Approval of your application titled, "Social Interactions and Emotional Health of Long-Term Care Residents with Dementia" (HSRRC Proposal # 09960).

Dear Ann,

In accordance with your request, the Human Subjects Research Review Committee has reviewed your proposal referenced above for compliance with DHHS policies and regulations covering the protection of human subjects. The committee is satisfied that your provisions for protecting the rights and welfare of all subjects participating in the research are adequate, and your project is approved. Please note the following requirements:

Changes to Protocol: Any changes in the proposed study, whether to procedures, survey instruments, consent forms or cover letters, must be outlined and submitted to the Chair of the HSRRC immediately. The proposed changes cannot be implemented before they have been reviewed and approved by the Committee.

Continuing Review: *This approval will expire on July 17, 2010*. It is the investigator's responsibility to ensure that a Continuing Review Report (available in ORSP) of the status of the project is submitted to the HSRRC two months before the expiration date, and that approval of the study is kept current.

Adverse Reactions: If any adverse reactions occur as a result of this study, you are required to notify the Chair of the HSRRC immediately. If the problem is serious, approval may be withdrawn pending an investigation by the Committee.

Completion of Study: Please notify the Chair of the Human Subjects Research Review Committee (campus mail code ORSP) as soon as your research has been completed. Study records, including protocols and signed consent forms for each participant, must be kept by the investigator in a secure location for three years following completion of the study.

If you have questions or concerns, please contact the HSRRC in the Office of Research and Sponsored Projects (ORSP), (503) 725-4288, 6th Floor, Unitus Building, 4th & Lincoln.

Cc: Jason T. Newsom

Human Subjects Research Review Committee
Post Office Box 751
Portland, Oregon 97207-0751
503-725-4288 tel
503-725-3416 fax
hsrrc@lists.pdx.edu

June 21, 2010

To: Ann McQueen

From: Nancy Koroloff, HSRRC Chair

Re: HSRRC renewal of approval for your project titled, "Humor, Social Interactions, and Mental Health of Assisted Living Residents" (HSRRC Proposal # 09960)

As part of the Committee's continuing review, the Human Subjects Research Review Committee has reviewed your above referenced project for compliance with Department of Health and Human Services policies and regulations on the protection of human subjects.

The Committee is satisfied that your provisions for protecting the rights and welfare of all subjects participating in the research are adequate. **Your project is renewed and this approval will expire on 7/17/2011.** Please note the following policies:

1. If the project continues beyond the expiration date, the investigator needs to submit a *Continuing Review Report* form two months before the expiration date. The form is available at www.rsp.pdx.edu/compliance_human.php and in the Office of Research & Sponsored Projects.

2. To add this project's continuing review to the HSRRC/IRB meeting agenda, please refer to the HSRRC/IRB meeting schedule. Submit the report, and the required number of copies, by the submission deadline that is approximately two months before the project's expiration date. The HSRRC/IRB needs two months to do a continuing review of the project, so it is extremely important that you meet the committee's submission deadline.

3. If this project finishes before the expiration date, please contact the HSRRC administrator so that the file can be closed and records updated. It is the investigator's responsibility to keep the approval status current. If the project's approval expires while the project is active, the investigator must complete a new application and submit it for a new HSRRC review. In addition, any data collected after the expiration date cannot be used in the research. Please don't let this happen!

If you have questions or concerns, please contact the HSRRC in the Office of Research and Sponsored Projects (ORSP), 503-725-4288, Unitus Building, 6th Floor, 4th and Lincoln Streets.

cc: Jason Newsom

Portland State UNIVERSITY

Human Subjects Research Review Committee
Post Office Box 751
Portland, Oregon 97207-0751
503-725-4288 tel
503-725-8170 fax
hsrrc@lists.pdx.edu

May 5, 2011

To: Ann McQueen

From: Mary Oschwald, HSRRC Chair

Re: HSRRC renewal of approval for your project titled, "Humor, Social Interactions, and Mental Health of Assisted Living Residents" (HSRRC Proposal # 09960)

As part of the Committee's continuing review, the Human Subjects Research Review Committee has reviewed your above referenced project for compliance with Department of Health and Human Services policies and regulations on the protection of human subjects.

The Committee is satisfied that your provisions for protecting the rights and welfare of all subjects participating in the research are adequate. **Your project is renewed and this approval will expire on 717/2012.** Please note the following policies:

1. If the project continues beyond the expiration date, the investigator needs to submit a *Continuing Review Report* form two months before the expiration date. The form is available at www.rsp.pdx.edu/compliance_human.php and in the Research & Strategic Partnerships office.

2. To add this project's continuing review to the HSRRC/IRB meeting agenda, please refer to the HSRRC/IRB meeting schedule. Submit the report, and the required number of copies, by the submission deadline that is approximately two months before the project's expiration date. The HSRRC/IRB needs two months to do a continuing review of the project, so it is extremely important that you meet the committee's submission deadline.

3. If this project finishes before the expiration date, please contact the HSRRC administrator so that the file can be closed and records updated. It is the investigator's responsibility to keep the approval status current. If the project's approval expires while the project is active, the investigator must complete a new application and submit it for a new HSRRC review. In addition, any data collected after the expiration date cannot be used in the research. Please don't let this happen!

If you have questions or concerns, please contact the HSRRC in the Research and Strategic Partnerships (RSP) office, 503-725-4288, Market Center Building, 6th Floor, 1600 SW 4th Ave.

cc: Jason T. Newsom