Social Withdrawal Associated with Regret and Fulfillment in Three Long-Term Care Facilities

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Social Withdrawal Associated with Regret and Fulfillment
in Three Long-Term Care Facilities

Melanie Mei Yukie Serrao

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

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Abstract

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Doctor of Philosophy

The study of social withdrawal continues to grow among younger samples, including childhood, adolescence, and emerging adulthood. Little research has addressed socially withdrawn older adults, despite the various losses, declines, and changes experienced by those in later life and their known benefits resulting from social interactions. Shy, avoidant, or unsocial individuals at younger ages may withdraw and possibly miss out on important opportunities; as a result, when they are grown, these same socially withdrawn individuals may experience greater regret and lower fulfillment in later life. Further, socially withdrawn older adults residing in long-term care (LTC) facilities may have more time to reminisce of past regret or fulfillment.

Data was collected from 45 older participants (Mage = 83.07) residing in a long-term care facility on O‘ahu. The current study used Bayesian linear regression models to examine ways that three subtypes of withdrawal (shyness, avoidance, and unsociability) may relate to regret and fulfillment in later life; with an exploratory qualitative portion assessing withdrawn participant’s biggest regrets and accomplishments. Results indicated that higher levels of shyness significantly predicted higher levels of regret, while higher levels of unsociability were related to higher levels of fulfillment. The findings may help us to understand the role of ability to choose in the lives of socially withdrawn individuals, as shy individuals who may withdraw because of fear could be missing out on desired life experiences, while unsocial individuals appear able to participate in their desired activities.

Keywords: shyness, unsociable, regret, fulfillment, later life
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Social Withdrawal Associated with Regret and Fulfillment in Three Long-Term Care Facilities

Social withdrawal, referring to the internal motivations for an individual to remove oneself from social situations (Coplan & Rubin, 2010; Rubin & Asendorpf, 1993; Rubin et al., 2002; Rubin & Coplan, 2004), can be considered a dominant personality characteristic across the life course. Social interactions are an integral part of all life stages, and continues to be crucial in later life (Reichstadt et al., 2010; Steptoe et al., 2013) as it is beneficial to many older adults during times of loss (e.g., loss of loved ones; Bookwala et al., 2014), decline (e.g., decline of physical health; Thomas, 2011), or change (e.g., change in living arrangements; Street & Burge, 2012). Given the importance of social interactions, individuals who choose to remove themselves from social situations (i.e., socially withdrawn individuals), may be at risk for increased psychological distress. Research has documented the relationship between social withdrawal and various mental health outcomes among younger age-groups, finding maladaptive effects such as loneliness in adolescence (Bowker & Raja, 2011), lower self-esteem in emerging adulthood (Nelson, 2013; Zhao et al., 2013), and depression in young adulthood (Katz et al., 2011). Among relational outcomes, social withdrawal is also related to delays in participating in seemingly important life activities, like marriage, work, and parenthood (Asendorpf et al., 2008; Caspi et al., 1988).

Such problems throughout the life course may become especially apparent in later life, a time where much reflection and review occur. Older adults often participate in a “life review” where they reminisce about their past (Butler, 1963). As they take part in this review, they can either achieve ego-integrity (i.e., feel fulfilled) or despair (i.e., feel regretful; Erikson, 1963). As a socially withdrawn older adult reviews his or her past, and reflects on the missed opportunities,
or negative feelings they have had previously, they may feel more regretful or less fulfilled in later life. Still, little is known about what social withdrawal might look like among older adults, despite the various losses, declines, and change experienced by those in later life and their known beneficial links to social interactions. Based on the previous samples used to examine social withdrawal in later life, we know some about community dwelling socially withdrawn individuals; however, older adults residing in care facilities may also have a desire to remove themselves from social situations, while simultaneously experiencing the characteristics of later life and the environmental nature of such facilities may be even more detrimental to the socially withdrawn older adult.

In 2017, approximately 3.1% of those 65+ resided in some type of institutional setting (US Department of Health and Human Services, 2017). These environments are meant to cultivate individual physical, mental, and social health (Scheidt & Schwarz, 2010). As such, many studies are dedicated to examining social interactions in these facilities (e.g., Park, 2009; Street et al., 2007), and links to various psychological well-being outcomes (Cummings, 2002; Watson et al., 2003). Still, despite the make-up of LTCs attempting to enhance social interactions, research shows that residents view one another as acquaintances and the relationships often lack a sense of emotion (Park et al., 2012). Further, individuals residing in LTCs experience much alone time (Hikoyeda & Wallace, 2002; Patterson et al., 2003; Zimmerman et al., 2007). Although the lack of social engagement in LTCs may be what is comfortable for socially withdrawn older adults; previous research would suggest that social withdrawal is still related to maladaptive outcomes even if one desires to withdraw (see Hill et al., 2019). Further, the excess amount of alone time experienced by residents in LTCs may allow for these individuals to is participate in a “life review” process (Butler, 1963) more frequently
and in-depth than perhaps their community dwelling counterparts. This may result in residents who are socially withdrawn being at risk for heightened regret and lower levels of fulfillment as they review their past life.

In addition to living arrangements playing a role in the relationships between social withdrawal and regret and fulfillment in later life, cultural factors may also provide context in how older adults are treated and the anticipated norms for older adults in facilities. Although not a main focus of the current study, I recognize that because data was conducted on O’ahu, with the majority of the sample having an Asian background, individuals belonging to the Asian or Pacific Islander (API) ethnic groups may differ from a typical Western sample. APIs are often more family oriented (Braun et al., 1997), the younger generations typically take responsibility over the older family members (Hattori et al., 1991), and within Asian culture, inhibition is viewed as positive in comparison to Western cultures (e.g., Chen et al., 2014). As such, these factors may provide a unique outlook of the results and further insight into social withdrawal among other cultural groups. For example, having strong family ties within API ethnic groups may help individuals combat negative outcomes associated with social withdrawal, and the lack of quality social interactions in LTCs may not be as harmful, as would in a more Western cultural sample. Take altogether, the purpose of the current study was to assess how shyness, avoidance, and unsociability is related to regret and fulfillment in later life.

**Subtypes of Social Withdrawal**

Social withdrawal has been defined as an “umbrella construct” referring to the internal motivations to remove oneself from familiar and/or unfamiliar social situations (Coplan & Rubin, 2010; Rubin & Asendorpf, 1993; Rubin et al., 2002; Rubin & Coplan, 2004). Previous research examining the general construct of social withdrawal has taken a simplistic approach
and examined trait shyness (Chou, 2005; Zhao et al., 2013) or introversion (Ryan & Xenos, 2011) in order to cover all forms of withdrawal from social interaction. When this is done, we fail to capture the internal motivations experienced by individuals who choose to withdraw. Asendorpf (1990) introduced the approach-avoidance model to better understand social withdrawal. In his model, three subtypes of social withdrawal exist: shyness, avoidance, and unsociability.

**Shyness**

Shyness refers to those individuals who experience the approach-avoidance conflict, meaning they have a high desire to approach, as well as a high desire to avoid (Asendorpf, 1990). In other words, shy individuals want to interact with others, but often do not because of fear or anxiety (e.g., Jackson et al., 2002; Koydemir & Demir, 2008). As the most studied subtype of social withdrawal, shyness has consistently been linked to various negative outcomes across the early life course, including anxiety symptoms in early childhood (Kopala-Sibley & Klein, 2017), depression and loneliness in adolescence (Murberg, 2009; Zhao et al., 2018), and low self-esteem in emerging and young adulthood (Koydemir & Demir, 2008; Nelson, 2013; Schmidt & Fox, 1995). The stability of maladaptive outcomes throughout the early life course may be evidence of shyness being a stable trait, as longitudinal, population-based studies have shown moderate stability and slight increases in shyness across early to late childhood (Karevold et al., 2012). Further, longitudinal studies have shown childhood shyness to significantly predict problems with interpersonal and intrapersonal competencies (e.g., difficulty with sensitivity to other feelings, difficulty describing own feelings; Grose & Coplan, 2015).
Avoidance

Avoidance refers to those individuals who are low on approach and high on the avoidance motivation (Asendorpf, 1990). Asendorpf (1990) theorized that socially avoidant individuals might be the most risk for maladaptive outcomes; however, of all the withdrawal subtypes, avoidant individuals are the least understood. It has been hypothesized that individuals may become socially avoidant because of three reasons (Coplan et al., 2015; Coplan et al., 2018). First, some scholars have theorized that avoidant individuals are initially classified as shy; however, the fear-based motivation for withdrawal becomes so intense that the desire approach disappears almost entirely, creating an avoidant individual (Schmidt & Fox, 1999). Second and similarly, the initial shyness of avoidant individuals is related to peer exclusion (Bowker & Raja, 2011; Coplan et al., 2014). It may be that socially avoidant individuals, who are initially shy and desire to interact, are excluded from peers and eventually experience peer victimization (i.e., bullying), which forced them to desire to avoid social situations altogether (see Rubin et al., 2018). To support this idea, research on avoidant adolescents has found that exclusions mediated the association between avoidance and loneliness, suggesting an important role that exclusion plays in the lives of avoidant adolescents (Bowker & Raja, 2011). Lastly, it is theorized that social avoidance is highly related to mental illnesses (i.e., depression) more than the other withdrawal subtypes (in childhood; Coplan et al., 2013) and as such may have a biological base (Coplan et al., 2018). Based on these theories of the creation of a socially avoidant individual, it makes sense that when compared to shy or unsocial counterparts, avoidant children report the worst internalizing problems (Coplan et al., 2016). Further, avoidant emerging adults report significantly higher scores than other withdrawn or non-withdrawn peers on reports of self-harm and suicidal ideation (Nelson, 2013).
Unsociability

Lastly, unsociability is classified as low approach and low avoidance motivation. In many ways, unsocial individuals are what we might typically call “introverts” (see Coplan et al., 2015), or those who prefer solitude (low approach motivation) but are not actively seeking to avoid social interactions (low avoidance motivation). The lack of desire for approach, coupled with the lack of discomfort in social settings is characterized through solitary play for children, where fear is not at the root (Coplan et al., 2004), but rather such an individual has a preference for solitude. Some research has examined the longitudinal effect of unsociability of children in middle to late childhood, and has found that unsociability is becoming more maladaptive through increased anxiety symptoms (Kopala-Sibley & Klein, 2017), and may be a risk factor for later depression, loneliness, and peer and academic difficulties (in a sample of Chinese children in middle childhood to early adolescence; Coplan et al., 2016; Liu et al., 2014). However, the overwhelming amount of evidence continues to show that unsociability is a benign form of social withdrawal (Kopala-Sibley & Klein, 2017) and unsocial individuals do not differ in outcomes compared to more sociable peers (Coplan et al., 2013). As such, this withdrawn subtype has not been linked to very few negative outcomes in children (Coplan et al., 2004; Coplan et al., 2013), adolescents (Bowker & Raja, 2011), or emerging adults (Nelson, 2013).

Social Withdrawal in Later Life and for Older Adults in LTCs

To date, research examining social withdrawal based on internal motivations (i.e., approach-avoidance) has focused its attention on younger samples, with Nelson (2013) branching into emerging adulthood. However, in the past few years, newer studies are focusing on social withdrawal subtypes in later life and their links to various psychological well-being outcomes (see Hill et al., 2019; Serrao, 2017). Specifically, higher levels of shyness, avoidance,
and unsociability have been found to be associated with higher levels of loneliness and regret, and lower levels of fulfillment among older adult athletes (Hill et al., 2019; Serrao, 2017). The authors discuss the importance of studying socially withdrawn older adults, as later life is often characterized as a time of loss, specifically, loss of loved ones (Bookwala et al., 2014), loss of physical abilities (Thomas, 2011), and loss of independence through change in living situations (Street & Burger, 2012). These changes in an older adult’s life may be related to the decrease in social interactions.

One specific change that may occur in an older adults’ life is the movement into a long-term care facility, and this new living situation is often directly related to changes in social interactions (Hikoyeda & Wallace, 2002; Park, 2009; Park et al., 2012; Patterson et al., 2003; Street et al., 2007; Zimmerman et al., 2007). Because shy individuals have a high approach motivation, shy older adults residing in LTCs may struggle the most with forming new social relationships in their new environment, because of fear in novel social situations. On the other hand, avoidant older adults residing in an LTC have a high avoidance motivation and as such, may decide to push away the already little social interaction offered in an LTC and have even less social interactions than they would in a community environment, possibly closer to family and friends. Lastly, unsocial older adults residing in LTC may be fine with not replacing friends or family members as they move on to new living situations and enjoy the excess time to be by themselves in solitude, and choosing when they want to participate in social activities.

Taken together, older adults who are socially withdrawn and reside in LTCs may experience different outcomes depending on their approach-avoidance motive. The unique findings regarding higher levels of unsociability in later life, in that it, too, is related to higher levels of loneliness (Hill et al., 2019), suggests an importance to studying social withdrawal
subtypes among older adults to other important life outcomes and how those in LTCs may be particularly at risk due to the limited social interactions within these facilities.

**Regret and Fulfillment in Later Life**

In later life, older adults often participate in a “life review” process, where they reminisce about their past (Butler, 1963). During this life review, personality theorist, Erikson (1963), suggests that in the last stage of psychosocial development one can either achieve ego-integrity or despair. Rather than feeling fulfilled or satisfied in particular domains in one’s life, if an individual achieves ego-integrity, it is because they have completed a life review and they are satisfied with their whole life that they have lived (Erikson, 1982). Similarly, other scholars have examined the concept of “life review” as an intervention, finding that when older adults can look back on their life in a positive way, they experience fewer depressive symptoms and improved life satisfaction (Lan et al., 2018; Latorre et al., 2015). On the other hand, when one does not feel fulfilled in their life as a whole, they experience despair, likely resulting in the rumination of regrets of one’s past. Completion of a life review in later life is important, as doing so can result in lower levels of regret, or increased fulfillment for the individual.

**Regret in Later Life**

Regret is an emotional feeling that often occurs when negative outcomes arise because of a prior decision (Gilovich & Medvec, 1995; Zeelenberg & Pieters, 2007). Much of the research around the topic of regret has focused on the concepts of acting (i.e., action; doing something you regret) or failing to act (i.e., inaction; not doing something you wish you had; Gilovich & Medvec, 1995; Holland et al., 2014), with mixed results on whether action (Landman, 1987) or inaction (Gilovich & Medvec, 1995; Newall et al., 2009) is more likely to predict feelings of regret (Morrison & Roese, 2011). Although there are mixed results regarding the reasoning for
feeling regretful (i.e., inaction or action), many agree that regret is related to personal responsibility of the regretted action. In other words, individuals feel more regret when it is themselves performing the action (i.e., self-agency; Bossuyt et al., 2014), when they believe things would have been better if they had acted differently (i.e., self-referent upward counterfactual; Broomhall & Phillips, 2018), and as a result report higher self-blame (Roese et al., 2009).

Older adults have a unique opportunity to participate in a “life review” in which they review their past and, in such circumstances, feelings of regret may surface. Many of their regrets are a result of inaction (Newall et al., 2009), as regrets from inaction have more frequently been found to last longer over time (Morrison & Roese, 2011). Specifically, Newall et al. (2009) found that among their sample of 65+ year-olds, many reported on things not done, including general statements such as, “something I should have done,” as well as more specific statements regarding being better to others, doing things for others who are now dead, or getting a better education. These types of regrets in later life were reported more frequently than regrets related to health or death.

**Fulfillment in Later Life**

The feeling of fulfillment has been used synonymously with life purpose and meaning (Frankl, 1978; Reker & Peacock, 1981), and life satisfaction (Fisher, 1995), and has been studied in many domains in later life. For example, older adults may feel satisfied with marriage (Carr et al., 2014) or grandparenthood (Bouchard & McNair, 2016), dissatisfied with health (Puvill et al., 2016) or widowhood (Næss et al., 2015), and even experience mixed feelings of satisfaction in retirement (Heybroek et al., 2015). Overall, older adults often report higher levels of life satisfaction compared to younger counterparts (Reker et al., 1987).
Regret and Fulfillment in LTCs

Although there has been a fair amount of work explicating the types of regrets older adults have and the areas in which older adults feel fulfilled in their life, there is little literature examining regret and fulfillment for older adults residing in a long-term care facility. Although Erikson (1963) proposes that all older adults must complete a life review, there may be some who take part in such a task more frequently, as a result of having more time to do so. Residents in LTCs often have much time alone (Hikoyeda & Wallace, 2002; Patterson et al., 2003; Zimmerman et al., 2007), which may allow for either rumination of past regret to occur, or reflection of a wonderful life, to take place. Further, LTCs are meant to promote independence for the residents (Ball et al., 2004; Carder, 2002), and as such, staff in these facilities respect residents’ privacy and intervene mostly for safety purposes (Speller & Stolee, 2015). In many instances, residents also report viewing one another as acquaintances rather than friends and suggest that the relationships often lack emotion (Park et al., 2012). This excess amount of alone time and superficial friendships may be especially harmful, as interventions have shown that help from outside sources to shape one’s past in a positive light (i.e., reminiscence process; Haight, 1992), and the ability to share one’s past with others (Wren, 2016), is beneficial for older adults. As such, as residents of LTCs struggle to form and maintain intimate relationships, and have excess time to ruminate about one’s past, long-term care facilities create an interesting environment to study older adults regret and fulfillment of their past.

Subtypes of Social Withdrawal as they link with Regret and Fulfillment in Later Life

Shyness and Regret

Although shyness has been extensively studied, no research has examined shyness in relation to regret, at any age. Some scholars have suggested that based on one’s shyness
hindering them from participating in various activities, they may regret being shy at younger ages because of missed opportunities (Malouff, 1998); however, the relationship has not been established in scholarly work. Conceptually, we can understand why shyness is related to regret, based on what we know about regret. Feelings of regret have most commonly occurred when individuals report not doing something when they wish they had (i.e., inaction; Gilovich & Medvec, 1995; Newall et al., 2009), and regret as a result of inactions have been found to last longer over time (Morrison & Roese, 2011). Recently, other research has examined the idea of self-discrepancy in relation to regret, in that individuals express greater regret when they report failing to live up to their ideal selves (i.e., who they would like to be; hopes and aspirations) over failing to live up to who they ought to be (i.e., who they believe they should be; obligations and responsibilities; Davidai & Gilovich, 2018). As shy individuals typically experience the approach-avoidance conflict, where they desire to interact with others, but due to fear or anxiety, they withdraw instead (Asendorpf, 1990), they may be particularly at risk for feelings of regret as a result of inaction. Further, as shy individuals desire social connection, being a “social” individual may be an ideal self they aspire to be; yet, the inability to do so may be especially damaging. As these problems are directly related to the self, in that shy individuals could have been more socially active but internally needed to refrain, self-blame may also be at play, further exacerbating regret (Roese et al., 2009). In sum, the first purpose of this study was to examine the association between shyness and regret in later life.

**Shyness and Fulfillment**

As shyness may be related to higher levels of regret, similar patterns may be exhibited through lower levels of fulfillment. In later life, older adults often express higher life satisfaction in relation to marriage (Carr et al., 2014), retirement (Heybroek, et al., 2015), and
grandparenthood (Bouchard & McNair, 2016), parallel to that of younger samples (romantic relationships; Facio & Resett, 2014; work; Khattab & Fenton, 2009). However, shy individuals often delay such typical developmental milestones (Asendorpf et al., 2008; Caspi et al., 1988), and when they do achieve goals like marriage, they are often less satisfied in the relationship (Baker & McNulty, 2010; Tackett et al., 2013). In Erikson’s theory of psychosocial development (Erikson, 1963), he proposes that individuals go through certain stages of life, and other scholars believe that in order to feel fulfilled in older adulthood, one must overcome crises in each life stage (Hannah et al., 1996). As such, shy individuals, who delay developmental stages, and struggle with fear to do the things they desire to do, may find themselves unfulfilled in later life, as they reflect on the life they have lived. As such, the second purpose of this study was to examine shyness and its relation to fulfillment in later life.

**Shyness in Relation to Regret and Fulfillment in LTCs**

The relationships between shyness and regret and fulfillment may be affected by the context of LTCs. The desire for social interactions coupled with the decreases in social interactions (Hikoyeda & Wallace, 2002; Patterson et al., 2003; Zimmerman et al., 2007), and the more superficial relationships created (Park et al., 2012) in LTCs, may allow for more impactful rumination to occur of past regret and a more readily realization of lower fulfillment for shy older adults. In addition, residents in LTCs do not live with family, and some may live farther way, creating less meaningful opportunities for family members and close friends to help with the life review process in reframing regrets to be more positive. As a shy older adult in a LTC facility reviews his or her life’s past with more frequent time to do so, they may recognize their delayed life accomplishments and feel less satisfied in their relationships created.
Avoidance and Regret

Avoidant individuals are those who are classified on the low approach and high avoidance motivation (Asendorpf, 1990). Because such individuals supposedly have no desire to interact with others or put themselves out there in social situations, it would seem that avoidance would not be linked to feelings of regret. However, it has been hypothesized that avoidant individuals were initially shy but became avoidant because of peer exclusion (Bowker & Raja, 2011; Coplan et al., 2014). As such, higher levels of avoidance have been related to increased loneliness among children and older adults (Coplan et al., 2013; Hill et al., 2019), exclusion among adolescents (Bowker & Raja, 2011), and lower relationship quality for friendships, familial relationships, and romantic relationships among emerging adults (Nelson, 2013).

Further, children who are classified as avoidant have reported the worst internalizing problems when compared to shy or unsocial counterparts (Coplan et al., 2016), distinguishing themselves as their own subtype of withdrawal. Further, in emerging adulthood, avoidant individuals report significantly higher scores on self-harm and suicide ideation reports (Nelson, 2013), indicating intense psychological outcomes for these individuals. If avoidant individuals were previously classified as shy, that would mean that they, at some point, did have an approach desire, but suppressed it over the years for lack of inclusion. As older adult’s often report regrets related to intimate relationships (Morrison et al., 2012), family (Jokisaari, 2003; Choi & Jun, 2009), and social connections (Newall et al., 2009), the intense desire for inclusion at younger ages, but choice to eventually suppress that desire may lead to even higher levels of regret than shy counterparts. In sum, the third purpose of the current study was to examine avoidance and regret in later life.
Avoidance and Fulfillment

Although avoidant individuals have little desire to be a part of social situations, and as a result actively avoid them, it may be that they avoid other important developmental life tasks, as well, especially those that require social interaction. Hannah et al. (1996) found that in order to feel fulfilled in later life, one must overcome previous life “crises.” If avoidant individuals choose to stay away from various life situations that may be critical to identity development (Erikson, 1963; Erikson, 1968; Erikson, 1982), avoidant older adults may struggle to feel fulfilled as they have not completed important life tasks. Further, although it would seem that avoidant individuals do not desire to approach social situations, and therefore would not experience maladaptive outcomes, in recent studies, albeit still limited, research has shown a significant link of higher levels of aspects of depression for avoidant children (Coplan et al., 2013; Coplan et al., 2018), and adolescents (Bowker & Raja, 2011). Negative mental health outcomes like depression, may help us to understand other outcomes like fulfillment, as depression is commonly linked to lower life satisfaction (Enkvist et al., 2012). As such, the fourth purpose of this study was to examine avoidance and its relation to fulfillment in later life.

Avoidance in Relation to Regret and Fulfillment in LTCs

The relationships between avoidance and regret and fulfillment may also be affected by the context of LTCs. Based on the high avoidance motivation of these withdrawn older adults, they may push away the little social interaction offered in LTCs and have even fewer social interactions than they would in a community environment. Similar to their shy counterparts, the excess time alone may allow for more impactful rumination to occur as they reminisce of past regret, and experience lower levels of fulfillment.
Unsociability and Regret

Unsociability, when examined as introversion, has been connected to various mental health outcomes (Verkerk et al., 2005); however, minimal research has assessed unsociability and regret. In the limited knowledge of these topics in scholarly work, Seta and colleagues (2008) found that introverts report more regret when they act contrary to who they are as introverts. This makes sense as regret in general occurs when an individual act differently than who he or she really is (i.e., consistency-fit idea; Seta, et al., 2008). Further, research on regret has defined it as a “counterfactual emotion,” meaning regret forms when a thought is framed as “if only…” then a more desired outcome would have occurred (Roese & Olsen, 1995). Using the approach-avoidance models, where unsociable individuals are classified as low approach and low avoidance (Asendorpf, 1990), unsocial individuals choose when they participate in social situations and are capable of doing so, and as such, they may be less likely to experience “if only” situations. In sum, the fifth purpose of the study was to examine the association between unsociability and regret in later life.

Unsociability and Fulfillment

Because unsocial individuals are classified as low approach and low avoidance (Asendorpf, 1990), they are theoretically capable of interacting when necessary or desired, and as such, it would make sense that this withdrawal subtype has previously been considered a more benign form of withdrawal (Bowker & Raja, 2011; Coplan et al., 2004; Coplan et al., 2013; Kopala-Sibley & Klein, 2017; Nelson, 2013). Unsocial individuals’ lack of desire to approach a social situation is not related to fear or anxiety (Coplan et al., 2004), but rather a preference for solitude. Because they are a capable of interacting with others or participating in activities when they want, they may feel fulfilled with their life as they do not miss out on opportunities and can
choose their actions without being hindered by fear. The sixth purpose of the study was to examine the relationship between unsociability and fulfillment in later life.

**Unsociability in Relation to Regret and Fulfillment in LTCs**

Lastly, the context of LTCs may affect the regret and fulfillment levels of an unsocial older adult. As residents have excess alone time, unsocial older adults may choose to participate in a life review as they enjoy solitude and time for reflection. The choice to participate in a review of one’s past may help buffer some negative feelings when one examines their life. Further, as unsocial individuals were never held back because of fear or anxiety, they may have less upon which to regret and more experiences to feel fulfilled in, creating a positive life review experience. The LTC may also provide an environment that fosters happiness altogether, as unsocial individuals are able to be alone, as they prefer. Current satisfaction in one’s environment may spillover to more positive reviews of one’s past.

**Qualitative Work on Social Withdrawal and Regret, and Fulfillment**

Taken altogether, little is known about the relationships between social withdrawal and regret, and fulfillment. Much of the literature on regret and fulfillment in general have used quantitative means to understand these constructs (e.g., Broomhall & Phillips, 2018; Newall et al., 2009). However, using qualitative procedures may help to further examine what specific regrets and accomplishments older adults experience, especially those who are social withdrawn, where research on this topic is nonexistent. The seventh purpose of the study was to examine two open-ended questions assessing shy, avoidant, and unsocial older adult’s biggest regrets and accomplishments.
Current Study

The purpose of the current study was to examine how three types of social withdrawal (shyness, avoidance, and unsociability) are related to regret and fulfillment in later life among older adults who reside in long-term care facilities. The study of social withdrawal has largely been examined among younger populations; however, older adults also withdraw from social situations for various reasons, and such withdrawal may allow for maladaptive outcomes to continue to take place in later life. As shy, avoidant, and unsocial individuals at younger ages withdraw and possibly miss out on important opportunities, socially withdrawn older adults may recognize this and levels of regret and fulfillment may be affected.

Further, if a socially withdrawn older adult resides in a long-term care facility, this provides a specific context in which to examine such individuals. As many older adults participate in a “life review” process (Erikson, 1963), those in LTCs may have more time of rumination of past regret, or to reflect on a wonderful life lived; as residents in LTCs often have much alone time (Hikoyeda & Wallace, 2002; Patterson et al., 2003; Zimmerman et al., 2007), because LTCs promote independence for the residents (Ball et al., 2004; Carder, 2002), and staff respect resident’s privacy (Speller & Stolee, 2015).

In addition to living arrangements, cultural factors provide another context to examine social withdrawal. As the current study was conducted on O’ahu, with the majority of the sample having an Asian background, individuals belonging to the Asian or Pacific Islander ethnic groups have different values and social norms than that of a Western sample. API culture is rooted in family (Braun et al., 1997), caregiving for older generations (Hattori et al., 1991), and within Asian culture, inhibition is viewed in a positive light (Chen et al., 2014). As such, although not a main focus of the study, these factors may provide a unique outlook of my results and further
insight into these cultural groups. As research on social withdrawal in later life is largely nonexistent, I draw on theoretical concepts (i.e., approach-avoidance motivations; Asendorpf, 1990) and research at younger ages to form my hypotheses.

1. The first purpose of this study was to examine the association between shyness and regret in later life. As shy individuals often refrain from participating in desired activities because of the approach-avoidance conflict (i.e., fear; Asendorpf, 1990), and as a result, miss out on opportunities throughout the life course, I hypothesized that higher levels of shyness would be related to higher levels of regret in later life.

2. The second purpose of this study was to examine shyness and its relation to fulfillment in later life. Because shy individuals often delay typical and desired life stages relating to marriage, and parenthood, and then often report lower satisfaction in those areas once achieved (Asendorpf et al., 2008; Caspi, et al., 1988), I hypothesized that higher levels of shyness would be associated with lower levels of fulfillment in later life.

3. The third purpose of the current study was to examine avoidance and regret in later life. Based on the theories that avoidant individuals were previously shy, but because of peer exclusion, they decided to avoid social situations altogether (Rubin et al., 2018), coupled with the intense psychological outcomes avoidant individuals report above shy individuals (Coplan et al., 2016), I hypothesized that higher levels of avoidance would be related to higher levels of regret.

4. The fourth purpose of this study was to examine avoidance and its relation to fulfillment in later life. Avoidance has recently been linked to depression at younger ages (Coplan et al., 2013) and scholars suggest a biological foundation of depression in avoidant individuals (Coplan et al., 2018). Because depression has also shown a longitudinal
association to life satisfaction (Enkvist et al., 2012), I hypothesized that higher levels of avoidance would be associated with lower levels of fulfillment in later life.

5. The fifth purpose of the study was to examine the association between unsociability and regret in later life. Because unsocial individuals are capable of participating in activities when they desire to (and are not held back by fear), they may be less likely to have had moments where they wish (i.e., “if only”) they had done something they did not do. For this reason, I hypothesized that higher levels of unsociability would be related to lower levels of regret in later life.

6. The sixth purpose of the study was to examine the relationship between unsociability and fulfillment in later life. Although some longitudinal work has indicated maladaptive effects of unsociability (Coplan et al., 2016; Liu et al., 2014); the overwhelming amount of evidence has shown that this withdrawal subtype is typically benign when compared to shyness and avoidance (Bowker & Raja, 2011; Coplan et al., 2004; Coplan et al., 2014; Kopala-Sibley & Klein, 2017; Nelson, 2013). The ability to participate in activities when they desire, and not being held back because of fear, may allow for an unsocial individual to feel fulfilled, as they take part in things that they want to do. As such, I hypothesized that higher levels of unsociability would be related to higher levels of fulfillment in later life.

7. The final purpose of the study will be to explore the type of regrets and fulfillments that shy, avoidant, and unsocial older adults have.
Method

Procedure

Residents living in one of three long-term care facility locations in Honolulu, Hawai‘i were invited by the primary researcher to participate in the current study. Activity coordinators at each facility planned a time during an activity portion of the day for residents to have the opportunity to take the survey. Inclusion criteria included being a resident of one of the invited long-term care facilities on the island of O‘ahu and being cognitively able to complete the surveys. To confirm cognitive abilities prior to taking the survey, participants were required to accurately complete three questions from the Mini Mental Status Exam (MMSE; Rovner & Folstein, 1987) asking the year, month, and state in order to receive the survey. Two participants could not complete the MMSE and were therefore excluded from the study. The study was approved by the Institutional Review Board at the primary investigator’s institution.

Within the questionnaire, two open-ended responses were asked of the participants, although, as with all of the questions, they could opt out of responding. For those residents who struggled with writing lengthy responses, the primary investigator offered to write what the participant dictated to them. Responses were coded by the primary investigator and put into emergent themes from the short answers.

Participants

Forty-five individuals participated in the quantitative portion of the current study, and 26 individuals additionally answered two open-ended questions on their greatest regrets and accomplishments over their life course. Participants ranged in age from 57 to 101 years old (M\textsubscript{age} = 83.07, SD = 8.33), and a majority were female (77.78%, n = 35), and widowed (56.82%, n = 25), with 11.36% (n = 5) being never married, 22.73% (n = 10) being separated/divorced, and
9.09% (n = 4) being married. The sample was highly educated (24.44% = advanced degree, 24.44% bachelor’s degree, 11.11% = associates degree, 17.78% = some college, 20.00% = high school, and 2.22% = less than high school) and primarily within lower and middle class (35.56% = between $10,000 - $49,999 per year, 24.44% = between $50,000 - $99,000 per year, with 8.89% = under $10,000 per year, 6.66% = $100,000+ per year, and 33.33% not reporting on their income). Majority of the participants were Japanese (69%, n = 31), with 18% Chinese, 7% Hawaiian, 4% White, and 4% Korean. On average, participants reported having approximately two children (SD = 1.54), two grandchildren (SD = 2.81), and one living sibling (SD = 1.12). See Table 1 for descriptive statistics.

Measures

Regret and Fulfillment

The current study used an adapted version of Ryff and Heinke’s (1983) measure of ego integrity to assess regret and fulfillment. Participants answered five questions about regret on a six-point scale ranging from 1 (strongly disagree) to 6 (strongly agree). Sample questions measuring regret included, “Reading old diaries and letters usually brings more pain than pleasure” and “There are many people whose life I would prefer to my own.” The fulfillment measure included one item where participants rated their agreement with the statement, “I feel generally contented with what I have accomplished in my life.” The item was measured on a six-point scale ranging from 1 (strongly disagree) to 6 (strongly agree).

To further assess regret and fulfillment in a qualitative portion of my study, participants were also asked two open-ended questions regarding regret and fulfillment. To capture regret, they were asked, “If you could do it all over again, what would you do differently in your life? Why? Feel free to give between 0-3 answers.” Second, to assess fulfillment, participants were
asked, “What experience, event, or accomplishment would you say has had the greatest or most meaningful impact on your life? Why? Feel free to give between 0-3 answers.”

**Social Withdrawal**

Using a modified version of the Child Social Preference Scale (Coplan, et al., 2004), participants answered 12 questions on a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to examine three subtypes of social withdrawal (four questions each). The original scale, initially used for children, was revised for use with emerging adults (Nelson, 2013). The current study further revised the scale for use with older adults. Modifications included changing terms such as “hanging out” to “spending time with.” To assess shyness, sample questions included, “I’d like to spend time with other people, but I’m sometimes nervous to” and “I feel tense in social situations.” To assess avoidance, sample questions included, “I am the happiest when I am spending time with other people” [reversed] and “I like to be with people” [reversed]. Lastly, to assess unsociability, sample questions included, “I don’t really mind spending time alone” and “I’m just as happy to be by myself as with other people.” Internal consistency and reliability indicated that the shy withdrawal subscale showed good reliability (α = .80), while the avoidant (α = .67) and unsocial withdrawal subscale (α = .65) showed lower yet adequate reliability.

**Controls**

Participants indicated their marital status (coded 0 = never married, 1 = separated/divorced, 2 = widowed, 3 = in a committed relationship), education (coded 0 = not a college graduate, 1 = college graduate), and overall health with one question on a five-point scale ranging from 1 (*fair*) to 5 (*excellent*). Because the sample was largely Asian in ethnicity, I
decided to not control for ethnicity but will address the role of an Asian/Pacific Islander background in relation to my results.

**Analysis Plan**

Preliminary analyses included descriptive statistics and bivariate correlations for the main study variables (see Tables 1 and 2). Next, using STATA 16 software (StataCorp, 2017), two Bayesian linear regression models were estimated to examine the three withdrawal subtypes (shyness, avoidance, and unsociability) as predictors of regret and fulfillment, controlling for marital status, education, and subjective health. To estimate appropriate multivariate statistical models using the small sample of my study, Bayesian linear regression models were estimated using the “bayes” prefix command in STATA.

Bayesian linear regression considers a distribution of possible values, rather than a single estimate, thus adjusting for small sample sizes. Bayesian estimation is able to calculate accurate estimates even with small samples because it utilizes prior knowledge that the researcher has about the variables in question in order to produce more accurate results and to further build on previous research (Van de Schoot et al., 2014). When noninformative priors are used (i.e., prior knowledge is not inputted into one’s analyses), researchers are not taking full advantage of the Bayesian method and results may not be as accurate. In other words, simply using a Bayesian approach does not necessarily alleviate the small sample problem (McNeish, 2016). Informative priors can thus be obtained and used based on expert opinions and/or previous research (McNeish, 2016). As such, although research on this topic is limited, based on regression coefficients from Serrao’s (2017) manuscript using a different dataset but similar variables, means and variances were included in the Bayesian regression analyses to include prior knowledge for more accurate results. Further, to examine the fit of the model, chain convergence
was assessed for each model’s main independent variables, and visual inspection is presented in Figures 1 and 2 to detect convergence. In assessing convergence, four plots are examined, each depicting the number of chains you specify for your model. To assume good fit of the model, each chain should look similar to one another, indicating that each time the model is run, similar patterns are occurring. Lastly, four chains were used for each model, as indicated by the nchains command in STATA, with a 20,000 mcmcsize, and rseed of 11. Specifying four chains allows for more simulations of the model, mcmcsize specifies the number of iterations I want to take place, and rseed tells my model to always begin on the 11th iteration, all of which is done in order to achieve a more accurate target posterior distribution (outcome) for results.

Next, in an exploratory section of my study, I further examined regret and fulfillment among the sample of older adults residing in long-term care facilities. I analyzed the qualitative assessments of regret and fulfillment that were gathered from respondents using two open-ended questions asking about what the biggest regrets and accomplishments in life have been. To classify shy, avoidant, and unsocial individuals, I only examined those who had an average of three or more on the withdrawal subtypes measures, indicating that they considered themselves “somewhat shy (or avoidant/unsocial)” as well as having a score that is less than three on the other withdrawal subtypes in order to capture those who are highly “shy,” highly “avoidant,” or highly “unsocial.” Responses are described below in the results section.

Results

As seen in Table 2, correlations between the main study variables were generally in the expected directions, albeit not all relationships were statistically significant. Only shyness was significantly positively associated with regret ($r = .43, p = .01$), and unsociability was significantly positively related to fulfillment ($r = .39, p = .01$).
Bayesian Linear Regression Analyses

**Shyness**

To assess the first and second hypotheses testing shyness’s relation with regret (hypothesis 1) and fulfillment (hypothesis 2), shyness was modeled as predicting regret and fulfillment in later life, controlling for marital status, education, and subjective health.

Based on Serrao’s (2017) findings, estimates for the mean and variance for shyness were set as “priors” to inform the estimation of findings in the regret model. Priors for regret:shy was .24 for the mean, and .7725 for the variance. Noninformative priors were used for all other relationships. The model presented a note that there was high autocorrelation after 500 lags in at least one of the chains. This indicated that one or more of the variables might be correlated to some extent. Although this caution does not necessarily suggest an error, a visual inspection of chain convergence was examined to ensure confidence in proceeding with an interpretation of results. Based on the convergence plot, all four chains showed good convergence for the model (see Figure 2) or in other words, all four chains look similar in the presented visual representations. Further, based on Gelman and Rubin’s (1992) and Brooks and Gelman’s (1998) test to assess nonconvergence, I used the bayesstast grubin syntax in STATA to assess the Max Gelman-Rubin Rc value. The Rc value I received as a 1.01, which is below the suggested rule of < 1.1, suggesting convergence. As such, I continued with analyzing my results. Shyness significantly and positively predicted higher levels of regret (M = .61, SD = .16, 95% Credibility Interval = .28 – .92). See Table 3. Shyness was not significantly related to fulfillment.

**Avoidance**

To examine the third and fourth hypotheses of the avoidance withdrawal subtype’s relation to regret (hypothesis 3) and fulfillment (hypothesis 4), avoidance was modeled as
predicting regret and fulfillment in later life, controlling for marital status, education, and subjective health. There were no significant relationships found for the avoidant withdrawal subtype.

**Unsociability**

To address the fifth and sixth hypotheses regarding the relationship between unsociability and regret (hypothesis 5) and unsociability and fulfillment (hypothesis 6), unsociability was modeled as predicting regret and fulfillment in later life, controlling for marital status, education, and subjective health.

For the fulfillment model, based on Serrao’s (2017) findings, estimates for the mean and variance for unsociability were set as informative priors where the mean was .10 and the variance was 1.1124 for the fulfillment:unsocial estimation, with noninformative priors applied to the control variables. Similar to the shyness model, this model indicated a note that there was high autocorrelation after 500 lags in at least one of the chains. A visual inspection of chain convergence was assessed, and all four chains showed good convergence for the model (see Figure 2). Further, based on Gelman and Rubin’s (1992) and Brooks and Gelman’s (1998) test to assess nonconvergence, the Rc value I received was a 1.02, suggesting convergence. As such, I continued with analyzing my results. Unsociability significantly and positively predicted fulfillment ($M = .32$, $SD = .15$, 95% Credibility Interval = .00 – .61), indicating that higher levels of unsociability were related to higher levels of fulfillment. See Table 4. Unsociability did not significantly predict regret.

**Qualitative Analyses**

I next examined two open-ended questions asked of the participants in the LTC facilities. Altogether, there was a total of four pages of transcripts to code (see Appendix A and B);
however, because of the exploratory nature of social withdrawal in this study, I only coded responses by individuals who were classified as one of the three withdrawal subtypes. Still, only one person was classified as “avoidant” and she/he did not answer the open-ended questions. As such, results presented below only represent those individuals who were classified as “shy” or “unsocial.” Shy and unsocial participants’ narratives focusing on their biggest regrets or accomplishments in their life were explored and I constructed a set of emergent themes that reflects repeated ideas. The names used below are pseudonyms to protect the privacy of respondents.

Only two responses were given by shy individuals regarding their biggest regrets and accomplishment in their lives. However, only three participants were classified as “shy.” Although only based on three responses, for shy individuals in the sample, regret was focused around marriage, while accomplishments were related to work and education. On the other hand, 17 participants were classified as “unsocial.” Regarding biggest regrets, ten participants responded. I identified five themes in the data: 1) Health, 2) Education, 3) Marriage and Family, and 4) Changing Personal Characteristics. However, the majority of unsocial individuals discussed being positive despite challenges. Regarding the greatest accomplishments in one’s life, 11 responses were given by unsocial individuals. Their narratives were characterized by four main themes: 1) Family, 2) Spirituality, 3) School and Work, and 4) Friendship.

**Shyness and Regret**

The three individuals who indicated they were somewhat shy and higher in regret provided only two responses. Both responses were related to marriage; however, in contradicting ways. Mei (Chinese female, age 86) said, “I feel I got married too young. I don't regret having my 7 children, 5 daughters and 2 sons.” On the other hand, Jinsu (Korean male, age 77) said,
“Not getting a divorce.” These two older adults indicated a contradicting feeling that shy individuals might express in relation to their biggest regrets, and marriage might be at the forefront of shy older adult’s minds.

**Shyness and Fulfillment**

Similarly, when asked about their greatest accomplishments, of the three individuals who were characterized as “shy,” only two responses were reported. Both respondents mentioned education and work. Mei (Chinese female, age 86) said, “Working at several different jobs have been education[al] and meaningful,” and Jinsu (Korean male, age 77) listed getting a PhD. In addition to this, Jinsu’s first two greatest accomplishments he shared was related to family: “1) Having 4 children. 2) Having 7 grandchildren.”

**Unsociability and Regret**

Ten responses were given out of 17 individuals who classified themselves as somewhat unsocial or higher. Four themes emerged from their narratives regarding biggest regrets: 1) Health, 2) Education, 3) Marriage and Family, and 4) Changing Personal Characteristics. However, many of the participants (50%) diverted the question from regrets by responding with more positive answers, as presented below.

**Health.** Only one individual mentioned her health as a big regret in her life. Yukie (Japanese female, age 76) talked of her weight and said, “Not gain so much weight when I changed to a 12-month desk job.”

**Education.** Similarly, only one respondent talked about studying. Hala’i (Hawaiian female, age 87) stated wishing she would have “studied more to make her life easier.”

**Marriage and Family.** Although a common regret for shy participants in the study, only one unsocial individual addressed a regret related to marriage and family. In fact, Nyet Heong
(Chinese female, age 86) started her response with feeling unsure if this was even a regret. She said, “I'm not sure marriage and children would've made a difference, but it would have been interesting to see.” Still, she concluded her statement with a positive outlook: “I do feel there are many people in this world to love even though not my own ‘family.’”

**Changing Personal Characteristics.** Although this theme is broader than the previous themes, three participants mentioned, to some extent, wishing they had different personal characteristics for various reasons. One response dealt with family and friends: “I would be kinder and patient to my family and friends” (Hawaiian female, age 87). Another was related to accomplishing personal goals: “Be more positive of achieving goals in life” (Chinese female, age 75). And one individual expressed a desire to have contributed to a larger purpose for mankind: “I would attempt to be attracted to more meaningful things that contribute to the greater whole of mankind” (Caucasian male, age 82).

**Positivity in Spite of Regrets.** Although in the writing prompt I asked participants to report their biggest regrets, half of the individuals who responded that were considered “unsocial” diverted from the question and responded in a positive manner. For example, Sumiko (Japanese female, age 74) responded, “Nothing. I am so happy with my life. Crying about hardships doesn't help, so I just look to the positives.” Similarly, Oyama (Japanese female, age 84) said, “There is no benefit to dwell on mistakes I've made in my life. I try to move forward and not dwell on them. I try to move out of my "comfort zone" and also learn from my mistakes.” One individual was more specific in her challenges, but still not dwelling on it. Hatsu (Japanese female, age 80) said, “My children is okay. My husband passed away, but that's okay. I never think about having a bad life.” And similarly, two other participants were specific in why they do not have any regrets by sharing, “I would not change my life - I am fortunate to have
been a flight attendant for PanAm Airlines and travel a lot” (Japanese female, age 83), and, “I
would not. Living and working on the mainland or Hawaii has been very good” (Japanese male,
age 74).

**Unsociability and Fulfillment**

Regarding the open-ended question asking participants about their greatest
accomplishments in their life, 11 responses were given by unsocial individuals. Based on their
responses, I characterized their narratives by four main themes: 1) Family, 2) Spirituality, 3)
School and Work, and 4) Friendship. However, one Japanese female (age 80) very simply stated,
“I never think about that. I have a great life that's all I know.” Below I share the other responses
covered under the four main themes.

**Family.** Family was a common theme expressed by older adult participants. Many talked
about marrying their spouses and raising their family, as stated directly by Yukie (Japanese
female, age 76), “Marrying my husband,” and Mariko (Japanese female, age 83) saying, “I am
very fortunate that I have a wonderful family.” Examples also included:

Hala’i (Hawaiian female, age 87): “1) Having a daughter to raise. 2) Marrying my third
husband who was patient, kind, and loving. 3) Having grandchildren, great-grandchildren and
family around.”

Kim Foong, a Chinese female (age 87) also expressed how these family relationships
continued today by sharing,

“Getting married to a loving man and having a family - 4 children - gave me lots of
happiness. Loving family interactions still continuing in the present.”

**Spirituality.** For a few participants, spirituality and faith played a role in feeling fulfilled
in life. Yukie, a Japanese female (age 76) shared that one of her biggest accomplishments in her
life was, “accepting Jesus Christ as my Lord and Savior!” Another participant subtly expressed the importance of God in her life as she enthusiastically thanked God when talking about the people in her life (Japanese female, age 83). Two other participants addressed how their faith in God and Jesus Christ helped them throughout their life, both in overcoming challenges and providing meaning and an enriching environment. For example, Oyama, a Japanese female (age 84) stated, “The challenges and difficulties in my life have resulted in my growth, my faith in Jesus Christ has helped me go through these challenges.” Kim Foong, a Chinese female (age 83) focused on the positive aspects of her faith in God. She said,

My faith in God anchors my life. So going to church, attending a church (affiliating), operated school, gave my life meaning and I learned how to live with gratitude. Living with loving parents in my church culture enriched my life. I look forward to rituals and feast days celebrations.

**School and Work.** Education and work were common factors for many unsocial participants when writing about their biggest accomplishments in life. Mariko, a Japanese female (age 83), said, “I am thankful that my parents were able to provide me with good education.” Another older adult addressed their love for their majors and careers. For example, James, a Caucasian male (age 82) stated that one of his biggest accomplishments has been, “Writing throughout my life - in school, in business, in life.” Kyau, a Chinese female (age 75), shared why her career meant so much to her, saying that one of her biggest accomplishments was, “Helping others in the community enjoy their lives through education.” And Yukie (Japanese female, age 76) went further on by sharing how she felt accomplished when “changing careers from being an RN to an HPE teacher to a curriculum specialist.” One individual also expressed his experiences
with his work and how that positive affect his family life. Naotaka, a Japanese male (age 74) said,

My experiences over the years were good here or at San Francisco, with companies here in Hawaii, equally so that my daughter was born on the mainland and loves it here and there and her daughter chose to go to a good university on the mainland where we were at.

Friendship. Although not as common, two participants stated an accomplishment of creating friendships and being able to adapt in order to create better relationships. Sumiko (Japanese female, age 86) was able to turn a difficult situation into something more positive as she said, “When I had a stroke 50 years old, in rehab I got to meet a lot of people who gave me lots of good friends.” Further, one participant said that she changed personality traits in order to function better. Nyet Heong (Chinese female, age 86) said,

Living on the mainland and having to change some behaviors (reticent, shy, non-verbal) had the biggest impact as I learned to be more outgoing and verbal which helped to meet more people and be able to function better as a nurse.

Discussion

The purpose of this study was to examine three subtypes of social withdrawal (i.e., shyness, avoidance, and unsociability) and their relation to regret and fulfillment in later life, specifically using a sample of individuals residing in long-term care facilities on O’ahu. I also examined two open-ended questions assessing the biggest regrets and accomplishments in the resident’s lives. The context of LTCs provides a unique background in which to study social withdrawal, regret, and fulfillment. Personality and identity theorists have proposed that older adults participate in a “life review,” in which they look back on their life and either feel regretful or fulfilled (Erikson, 1963). Although all older adults may participate in such a task, individuals
residing in LTCs may have more time to reflect on their past life, as these individuals often have much time alone (Hikoyeda & Wallace, 2002; Patterson et al., 2003; Zimmerman et al., 2007), and less close and satisfying social networks (Park et al., 2012). Such alone time, dependent on whether it is desired or not, may exacerbate feelings of regret and fulfillment in later life. The findings in the current study indicated that two of the forms of social withdrawal were uniquely related with regret and fulfillment. Specifically, in support of hypothesis one, higher levels of shyness were linked with higher levels of regret. Second, in support of hypothesis six, higher levels of unsociability were related to higher levels of fulfillment. As such, there may be distinct characteristics of shyness and unsociability that exhibits diverse outcomes.

**Shyness and Regret**

Regarding the first hypothesis, results indicated that higher levels of shyness was significantly related to higher levels of regret. Such results add to the current body of literature as shyness has been linked to a host of negative outcomes across the life course, such as anxiety symptoms in early childhood (Kopala-Sibley & Klein, 2017), depression and loneliness in adolescence (Murberg, 2009; Zhao et al., 2018), and low self-esteem in emerging and young adulthood (Koydemir & Demir, 2008; Nelson, 2013; Schmidt & Fox, 1995). It would then make sense that shyness in later life, although rarely studied, would be related to increased regret. Based on the approach-avoidance conflict (Asendorpf, 1990) experienced by shy individuals, those who are shy may consistently desire to participate in various developmental activities at each life stage, but ultimately refrain because of fear (e.g., Jackson et al., 2002; Koydemir & Demir, 2008). As such, they may struggle with important life tasks, like marriage, work, and parenthood (Asendorpf et al., 2008; Caspi, et al., 1988). However, for a shy individual, the struggle to participate in such activities may be especially damaging because of their innate and
simultaneous feelings of desire coupled with fear. As feelings of regret are often strongest when individuals report not doing something that they wish they had (i.e., inaction; Gilovich & Medvec, 1995; Newall et al., 2009) and when they fail to live up to who they want to be (Davidai & Gilovich, 2018), shyness may be a risk factor for regret, as exhibited in my findings.

Although hypothesized, there was no significant relationship found between shyness and fulfillment. First, I recognize that due to the small sample size of those who were considered “shy” (n = 3), this may be why there is a non-existent relationship here; as one other study that has examined shyness and fulfillment in later life has found a significant link between these two variables, particularly among older adult athletes (Serrao, 2017). Still, the qualitative portion of the current study may help provide some ideas of why this link was not found in my sample. The two themes mentioned by shy participants included education and work; yet much research on later life fulfillment focuses on marriage and family life (Bouchard & McNair, 2016; Carr et al., 2014). Marriage was actually discussed in the regret question for shy participants in my study; possibly suggesting that shy individuals are just more likely to have regrets in the fields where others would find fulfillment, allowing for regret results to be more apparent than fulfillment results.

Unsociability and Fulfillment

Across the life course, research has indicated that unsocial individuals often fare better than their shy and avoidant counterparts (Coplan et al., 2004; Coplan et al., 2013; Bowker & Raja, 2011; Kopala-Sibley & Klein, 2017; Nelson, 2013), in that outcomes are often considered benign. To add to previous findings among younger samples, the current study found that higher levels of unsociability was related to higher levels of fulfillment among older adults, in support of hypothesis six. These findings provide some evidence to suggest that the nature of unsocial
individuals is not only showing lower levels of maladaptive outcomes than shy and avoidant peers, but in actuality, positive outcomes for unsocial older adults. The lack of an avoidance motivation, as experienced by unsocial individuals, may allow for them to participate in the important life activities that they desire, and when they do not, it is not because of fear of doing so, but rather a choice to refrain. That ability to choose what they want to do, when they want to do it differentiates them entirely from their shy peers, and this may be why we are seeing unsocial older adults feeling more fulfilled.

Again, although hypothesized, I did not find a significant relationship between unsociability and regret. Qualitative results for the study provide a unique view of why I may not have found this link. In the open-ended questions asking participants about their biggest regrets in life, a common occurrence was that unsocial individuals often expressed positivity in spite of regrets. Many said that they did not want to dwell on the hardships but wanted to learn and move on; as well as addressed their accomplishments in the regret question. It may be that there is something qualitatively different about unsocial individuals, who choose to focus more on feeling fulfilled than regrets, and as such, although they had to answer quantitative questions about regret, they were qualitatively thinking about regrets in a positive light, as represented in a non-relationship.

**Non-Findings for Avoidance with Regret and Fulfillment**

Previous research has often presented similar maladaptive findings for avoidance and shyness; however, in the current study, this withdrawal subtype showed no significant links to positive or negative outcomes. Because evidence would support a relation between avoidance and regret or fulfillment, with avoidance being the most maladaptive withdrawal subtype (Asendorpf, 1990; Coplan et al., 2016; Nelson, 2013), it is likely that non-findings stem from
methodological issues. First, the sample size in the study was small, and typically, an avoidant group is the smallest compared to other withdrawal subtypes, allowing for the non-existence of avoidant individuals in the current sample. In addition to this, attracting avoidant older adults in a long-term care facility to a setting like a LTC “activity” is difficult in general as avoidant individuals would, by nature, choose to avoid such social settings. Future work should consider how to recruit avoidant older adults to participate research surveys in order for scholars to learn more about this unique withdrawal subtype.

**Practical Implications**

Based on the findings of the current study, there are few practical implications for socially withdrawn older adults and those who work with these individuals. At younger ages, shyness and avoidance are linked to maladaptive outcomes. Scholars have suggested that parenting can help mediate these links (Evans et al., 2012; Miller et al., 2011). Although this may help in childhood, shy older adults are still reporting increased regret as they reflect on their life; and shy and avoidant older adults are not even choosing to participate in “activities” in order for researchers to learn more about them. Erikson (1963) has theorized that when older adults are not able to overcome regrets in later life, they will feel less fulfilled (i.e., despair). Interventions to help older adults in the life review process have shown that having someone to help reframe negative experiences into a more positive light can be very beneficial to the older adult (Lan et al., 2018; Latorre et al., 2015). However, in long-term care facilities, residents may not have someone who can help them do this. Staff in LTCs should be particularly aware of their withdrawn residents and spend time talking with them in order to help in this reframing process, as those in LTCs may be particularly at risk for feeling despair as LTCs are already known for
superficial relationships (Park et al., 2012) and excess alone time (Hikoyeda & Wallace, 2002; Patterson et al., 2003; Zimmerman et al., 2007).

Limitations and Future Work

Although the current study adds to the growing body of work on social withdrawal by contributing information about socially withdrawn older adults, a number of limitations exists. First, due to the cross-sectional nature of the data, we cannot assume causality of the relationships presented. Future research should examine social withdrawal over time into later life, to both understand a stable or changing effect of shyness, avoidance, and unsociability on various adaptive and maladaptive outcomes. Next, there are many methodological limitations in the study. Data was collected from three long-term care facilities on O’ahu and as such, results are not generalizable to all older adults. However, although caution is warranted, based on previous research of social withdrawal, similar results are likely to have been found among larger samples, with possibly more significant findings. Further, the sample was majority Asian and therefore, culture factors may play a role in interpretation of results; however, because there was little heterogeneity of ethnicity and the lack of statistical power due to a small sample size, ethnicity was not analyzed in the study. Still, because Asian cultures portray a “silent communication” (i.e., using nonverbal communication tactics rather than openly talking about concerns), but also value a sense of inclusion of community (McLaughlin & Braun, 1998), these characteristics of Asian culture may provide an important context to understand this specific sample. Future research should assess social withdrawal in various cultures and create measures in which capture social withdrawal differently dependent on the culture in which one is studying. Next, because of the small sample size, I was limited in the control variables I was able to assess. In the current study, I included only three controls, whereas, there are other important variables
to consider, such as ethnicity and gender. Lastly, studying social withdrawal in a long-term care facility can be difficult as individuals who would consider themselves and shy or avoidant would likely not willingly participate in a survey during an “activity” portion of their day. Still, socially withdrawn individuals residing in LTCs may be just as at risk for maladaptive outcomes as their community-dwelling counterparts. Future research should use other mechanisms to identify those residents who are shy or avoidant (e.g., one on one interviews in a familiar place) in order to get larger samples of these subtypes.

**Conclusion**

Despite the limitations of the current study, it makes important contributions to the field of social withdrawal. First, the majority of the research conducted on motivations and subtypes of withdrawal has focused on samples of children, adolescents, and emerging adults. This study examined social withdrawal among older adults; a population in which much change is occurring so that individuals might find themselves with more opportunity to be alone. Second, based on the findings, higher levels of shyness continue to be a maladaptive, being related to increased regret, while unsociability is not only benign but has a positive relationship with fulfillment, within later life. Lastly, in an exploratory section of this study, I examined the biggest regrets and fulfilments of those who were classified as “shy” or “unsocial.” This exploration allowed us to see what some shy or unsocial older adults, residing in a long-term care facility, might regret or consider their biggest accomplishments to be; possibly allowing for interventions for withdrawn older adults to lessen their regrets and feel more fulfilled in later life. Taken altogether, the findings from the current study help us to understand the important role of the ability to choose in the lives of socially withdrawn individuals. Shy individuals may withdraw because of fear and could therefore be missing out on desired life experiences. Unsocial
individuals may be more able to participate in their desired activities. Different trajectories (regret and fulfillment) are based on such an ability to approach.
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doi:10.1097/01.psy.0000170832.14718.98


doi:10.1016/j.paid.2018.01.007
Table 1

*Descriptive Statistics for Sample*

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<th>Variable</th>
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<tr>
<td>Male</td>
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<tr>
<td>Female</td>
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<td>Portuguese</td>
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<td>Health</td>
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Note. Controls for analyses included education, marital status, and health.
Table 2

*Correlations Between Study Variables*

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<td>3. Health</td>
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<td>6. Unsocial</td>
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<td>.04</td>
<td>.43**</td>
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<td>.06</td>
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<td>.11</td>
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<td>.39*</td>
<td>-.31†</td>
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† > .05, *p < .05, **p < .01, ***p < .001
## Table 3

*Means of Shyness, Avoidance, and Unsociability Predicting Regret in Older Adults*

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<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>95% Credibility Interval</th>
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<td></td>
<td></td>
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<td>Marital Status – Widowed</td>
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<tr>
<td>Never Married</td>
<td>.25</td>
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<td>Education – College Grad</td>
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<td>.03</td>
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<td>-.52 – .57</td>
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Note. Three separate models were run so that each withdrawal subtypes (shy, avoidant, and unsocial) received their own model predicating regret. Significance is assumed when the credibility interval does not include 0.
Table 4

Means of Shyness, Avoidance, and Unsociability Predicting Fulfillment in Older Adults

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>95% Credibility Interval</th>
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<td>.16</td>
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<tr>
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<td>-.01 – .59</td>
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Note. Three separate models were run so that each withdrawal subtypes (shy, avoidant, and unsocial) received their own model predicating fulfillment. Significance is assumed when the credibility interval does not include 0.
Figure 1

*Convergence Plot for Shyness and Regret*
Figure 2

Convergence Plot for Unsociability and Fulfillment
Appendix A

Transcripts for Responses to Regret Open-ended Question

There is no benefit to dwell on mistakes I've made in my life. I try to move forward and not dwell on them. I try to move out of my "comfort zone" and also learn from my mistakes.

Nothing. I am so happy with my life. Crying about hardships doesn't help, so I just look to the positives.

1) Not lived here where I live currently. 2) After I had surgery, I had little time to find me a place to live temporarily where I could have care for myself. The skilled nursing facility gave me little time, so I learned from it. 3) A person may not be able to change one's past, but we can learn from it. I would never change that I have had God in my life.

I'm not sure marriage and children would've made a difference but it would have been interesting to see. I do feel there are many people in this world to love even though not my own "family."

My children is okay. My husband passed away, but that's okay. I never think about having a bad life.

Feel strongly that I needed ALL experiences in my life to learn how to get better.

I had resigned myself to the fact that I was born to alien parents, who came from Japan with hardly any money and dare to live in Hawaii, hoping to make enough money to go back to Japan some future era. We never suffered from lack of food on the table as our parents ran a lunch room during the summer in front of "Ribby McNeil and Libby" cannery and a lunch wagon (serving industrial areas), the "slaughter house" on middle street, and families in Moanalua, and Kalihi-uka (piggeries), et al. We attended public schools and Japanese language schools daily until World War II began. In the war years, we raised produce on a 7-acre farm and luckily the one brother we had did not get drafted as he became the "farmer" now instead of my alien dad.
Not gain so much weight when I changed to a 12-month desk job.

I would not change my life - I am fortunate to have been a flight attendant for Panam Airlines and travel a lot.

I would attempt to be attracted to more meaningful things that contribute to the greater whole of mankind.

1) I would be kinder and patient to my family and friends. 2) Study more to make my life easier.

I would have gone into Physical Therapy and look for financial aid so that I could go to a mainland school.

I would not. Living and working on the mainland or Hawaii has been very good.

Be more positive of achieving goals in life.

Take better care of my husband who died of cancer.

1) Left only after 3 years (PAA)

I would probably attend the University at Manoa. I feel I got married too young. I don't regret having my 7 children, 5 daughters and 2 sons.

I would have managed to go to college and earn a degree.

Nothing

1) Not getting a divorce.

I wish I had brought my daughter back more often to Hawaii because she loved HI and her friends and family so much.

I would follow my interests and not worry about what others might think.

Learning that life is what one makes of it. I hav matured in the years and have learned to make the best of things and learn how it has affected my life. I don't think I would change my life as I believed things that have happened has formed my life.
Appendix B

Transcripts for Responses to Fulfillment Open-ended Question

Surviving difficulties in my life.

The challenges and difficulties in my life have resulted in my growth, my faith in Jesus Christ has helped me go through these challenges.

1) My faith in God anchors my life. So going to church, attending a church (affiliating), operated school, gave my life meaning and I learned how to live with gratitude. 2) Living with loving parents in my church culture enriched my life. I look forward to rituals and feast days celebrations. 3) Getting married to a loving man and having a family - 4 children - gave me lots of happiness. Loving family interactions still continuing in the present.

When I had a stroke 50 years old, in rehab I got to meet a lot of people who gave me lots of good friends.

Living on the mainland and having to change some behaviors (reticent, shy, non-verbal) had the biggest impact as I learned to be more outgoing and verbal which helped to meet more people and be able to function better as a nurse.

I never think about that. I have a great life that's all I know.

1) Greatest accomplishment is being able to be totally self-sufficient and not have to depend on anyone to take care of me financially and not give the burden of my well-being decisions to my children. 2) Learning to deal with depression and use the lessons I learned in therapy to look for the silver-lining in all sad experiences.

Due to family circumstances, I couldn't pursue my career goals after graduating from the University of Hawaii. Mother needed my help. I married late at nearly 30 years old. However, what little I saved, I was able to buy my home in Kailua and paid the mortgage off 15 years later;
owning all my household goods and a car and a truck. Also, I had painful experiences during my pregnancies with our first and second child. Also, we had to take care of my in-laws to see to it that we had proper funerals for each of them, 3 deaths in a row.

1) Accepting Jesus Christ as my Lord and Savior! 2) Marrying my husband. 3) Changing careers from being a RN to a HPE teacher to a curriculum specialist.

I am very fortunate that I have a wonderful family. I am thankful that my parents were able to provide me with good education. Again, I am very fortunate to have wonderful people in my life.

I thank God very much. I have a grandson who was baptized in the Jordan River in Israel.

Writing throughout my life - in school, in business, in life.

1) Having a daughter to raise. 2) Marrying my third husband who was patient, kind, and loving.
3) Having grandchildren, great-grandchildren and family around. 4) Having a safe environment.
5) Selling my home to someone that would appreciate the home that I have cared for fifty years.

1) Graduating from UH with a Bachelor in Education degree and being able to teach 7th/8th grades P.E. 2) Going to summer school at the end of the school year and picking up credits to get my professional degree.

My experiences over the years were good here or at San Francisco, with companies here in Hawaii, equally so that my daughter was born on the mainland and loves it here and there and here daughter chose to go to a good university on the mainland where we were at.

Helping others in the community enjoy their lives through education.

1) Having a husband who was caring and took good care of me. 2) Having adopted grandchildren in family: Girl from China and boy from Japan.

1) Being a flight attendant. 2) Travelled the world with PAA

Working at several different jobs have been education and meaningful.
1) My husband's years of Alzheimer's disease. I learned a lot about that dreadful disease and was able to help others.

1) My mother's hospitalization (TB) made me want to become a nurse (which I did for 30 years).

2) My marriage to Yoshi which has lasted for 58 years, 59 in November. He is my best friend, especially since we had no children, had 3 loving dogs though. 3) Our move from Hilo to the plaza. My life is no easier and less stressful although I miss my friends in Hilo. I have made new friends at the Plaza.

1) Having 4 children. 2) Having 7 grandchildren. 3) Getting a PhD.

My daughters 16 battle with cancer affected me greatly. She and her husband discovered they both had at the same year. He fortunately was treated successfully and still lives and is very happy with his daughter and her 2 children. My daughter died in 2014 and was happy with each day.

Graduating from high school. Feel empowered to do whatever I need.

I did what I needed to do it.

I don't worry about things I am not in control of. Previous to this, I would get annoyed with myself for feeling this way but my visit to psychologist and psychiatrist have made some dramatic influences about being able to accept what I cannot change. I don't let myself worry and accept what the outcome turns out.

As a musician my goal is to make people happy with my music.