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CHAPTER

New Ways of Theorizing and Conducting Research in the Field of Loneliness and Social Isolation

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Loneliness is nowadays considered to be one of the main problems in society. The negative experience of a discrepancy between the desired and the achieved personal network of relationships is common and affects both younger and older adults. This chapter first addresses well-established aspects and new developments in the main concepts of loneliness and social isolation, the measuring instruments and the prevalence of loneliness. The chapter continues by an overview of theoretical ideas regarding loneliness, focusing on individual-level and societal predisposing characteristics as well as on genetic/evolutionary perspectives on the onset and continuation of loneliness. The main part of the chapter is dedicated to empirical evidence from many sources and disciplines including psychology, sociology and epidemiological sciences. The prevention of loneliness, coping and interventions are addressed in the final part of the chapter. Other chapters in this volume address topics related to loneliness, namely social rejection, the neuroscience of social disconnection, social networks, and relationships and health (see Leary & Acosta, this volume; Cacioppo, this volume; Felmlee & Sinclair, this volume; and Holt-Lunstad, this volume).

The Concepts of Loneliness and Social Isolation

Loneliness

Loneliness is “the unpleasant experience that occurs when a person’s network of social relations is deficient in some important way, either quantitatively or qualitatively” (Perlman & Peplau, 1981, p. 31). This includes situations, in which the *number* of existing

relationships is smaller than is considered desirable as well as situations where the *quality* or intimacy one desires has not been realized. Loneliness is sometimes also addressed under the term: *perceived* social isolation (Cacioppo, Fowler, & Christakis, 2009). Feeling lonely is accompanied by feeling emptiness and rejection. The opposite of loneliness is belongingness or social embeddedness.

Social Isolation

Social isolation concerns the objective characteristics of a situation and refers to a small network of kin and non-kin relationships. There is a continuum running from social isolation on the one end to social participation on the other. Persons with an absence or a small number of meaningful ties are, by definition, socially isolated. Research has shown that socially isolated persons run a greater risk of becoming lonely, and that being surrounded by a social network of meaningful personal relationships is crucial for feeling socially embedded and for the alleviation of loneliness.

The Relationship Between Social Isolation and Loneliness

Generally speaking, as the number of relationships in the personal network increases, the intensity of loneliness decreases. The four closest ties in a person's network provide a great degree of protection against loneliness. Other ties provide further protection but not to the same degree (Van Tilburg, 1990). Those with a small personal network and those located at the margin of a social network run the greatest risk of being lonely; lonely people tend to receive fewer friendship nominations from others, but they also tend to name fewer people as their friends (Cacioppo, et al., 2009).

Loneliness is but one of the possible outcomes of the evaluation of a situation characterized by a small number of relationships. Socially isolated persons are not necessarily lonely, and lonely persons are not necessarily socially isolated in an objective sense (Victor, Scambler, Bond, & Bowling, 2000). Where a person ends up on the subjective continuum depends on his or her relationship expectations or standards. Some people with a small number of social contacts might feel lonely; others might feel sufficiently embedded. An example of the latter situation is that of a person who opts for a small number of contacts as a means toward avoiding undesired social relationships. The size of the personal network is important, but many other aspects of the network are worth mentioning too, such as the composition and functioning of the network.

People with networks composed of both strong and weak ties are less prone to loneliness than people with strong ties only (Van Tilburg, 1990). Moreover, research (Dykstra, 1990; Silverstein & Chen, 1996) has shown that people with networks that consist primarily or entirely of kin ties are more vulnerable to loneliness than people with heterogeneous networks, that is, both kin and non-kin.

Conflict-ridden and emotionally unsupportive marriage relationships are linked with higher

levels of loneliness (Dykstra & Fokkema, 2007), and older adults who experienced adverse childhood events (such as being bullied or being confronted with enduring conflicts between parents) report higher levels of loneliness even in old age (Nicolaisen & Thorsen, 2014). Moreover, broken-off relationships sometimes silently, but continuously, create serious discomfort and loneliness. These outcomes encourage us to rethink investigations of the size, composition, and functioning of personal networks with a more open eye for ambiguous and conflict-ridden relationships.

Types of Loneliness

Several types of loneliness can be distinguished. The first one is the *positive* type and concerns the voluntary (mostly temporary) withdrawal from social contacts and is oriented toward goals such as reflection, meditation, dedication towards writing or painting and communication with God. A second type combines negative and positive facets. The philosopher Moustakas (1961, 2012) described this *existential* loneliness type as an inevitable part of the human life itself, involving self-confrontation in periods of crisis, an inner process of doubt and uncertainty, feeling totally isolated even if supportive network members are available. At the end this situation provides an avenue for self-growth, power and inspiration. The third type of loneliness concerns an unpleasant or inadmissible lack of personal relationships, as formulated in the definition given in this chapter. This is the concept of loneliness that is nowadays most frequently used in theories and research. Moreover, it is the type that best fits the everyday concept of loneliness.

Weiss (1973) differentiated *emotional loneliness* stemming from the absence of an intimate figure or a close emotional attachment (a partner, a best friend) and *social loneliness* stemming from the absence of a broader group of contacts, or an engaging social network (friends, colleagues, and people in the neighborhood). In recent years, researchers have used the two types to better understand the expressions and determinants of loneliness. Both the De Jong Gierveld loneliness scale (De Jong Gierveld & Van Tilburg, 1999, 2006; Dykstra & De Jong Gierveld, 2004; Van Baarsen, Snijders, Smit, & Van Duijn, 2001) and the Social and Emotional Loneliness Scale for Adults (SELSA; DiTommaso & Spinner, 1993; DiTommaso, Brannen, & Best, 2004) have proven to be valid and reliable measuring instruments for emotional and social loneliness (see the next section for additional information).

Measuring Instruments

Loneliness has a negative connotation. Lonely people carry a social stigma (Lau & Gruen, 1992), making it difficult to talk about feelings of loneliness. Men in particular, and people with deficiencies in their relationships more generally, do not always admit to being lonely. The use of direct questions including the words “lonely” or “loneliness” to investigate

loneliness is likely to result in underreporting in specific categories, i.e., people who are not seen as lonely by others. Some measurement scales consist of items without any reference to loneliness, whereas others include one or more explicit references to loneliness. In discussing different measuring instruments, Jylhä and Saarenheimo (2010) argue that by using indirect questions (scale items) researchers justify their own definitions of loneliness; a direct question, on the contrary, reflects the loneliness as understood by the respondent. We disagree: many loneliness instruments consisting of indirect items correlate strongly with self-reports of loneliness, confirming their validity. Both direct and indirect measurements of loneliness can be used, but scales consisting of multiple items have better reliability. We describe two loneliness scales that have no explicit references to loneliness and have been used in many research projects.

In the original UCLA Loneliness Scale (Russell, Peplau & Ferguson, 1978), which does not use the term loneliness, all the items were worded in a negative or “lonely” direction. Because of concerns about how the negative wording of the items might affect scores (i.e., response sets), a revised version of the scale was developed that included twenty items worded in a lonely and a nonlonely direction (Russell, Peplau, & Cutrona, 1980). In the subsequent version, the items and the response format were simplified to facilitate administration of the measure to less educated populations (Russell, 1996). A shorter, three-item version of the scale was constructed in 2004 (Hughes, Waite, Hawkley, & Cacioppo, 2004). The long and the short scale have been tested in several studies and showed adequate reliability and validity (Penning, Liu & Chou, 2014).

The original 1985 version of the De Jong Gierveld loneliness scale (De Jong Gierveld & Kamphuis, 1985; De Jong Gierveld & Van Tilburg, 1999) consists of 11 items, and refrains from using the word loneliness. Five items are positively phrased, and six are negatively phrased. The reliability and homogeneity of the scale have proven to be satisfactory in different studies adopting different modes of data collection. The De Jong Gierveld scale was not developed to assess types of loneliness but rather to measure the severity of feelings of loneliness. Researchers can use the scale as a one-dimensional measure. As a whole, the scale is moderately, yet sufficiently homogeneous. The items were, however, developed with Weiss's (1973) distinction between social and emotional loneliness in mind. For that reason, researchers also have the option to use two subscales (one for emotional and one for social loneliness). There is a shorter version of the scale (de Jong Gierveld & Van Tilburg, 2006) consisting of three items indicating emotional and three items indicating emotional loneliness. The scale has been tested in several studies, revealing a strong correlation with a direct question to loneliness (Victor, Grenade, & Boldy, 2005), adequate reliability and validity, both for the total scale and for the two subscales (de Jong Gierveld & Van Tilburg, 2010; Penning et al., 2014; Uysal-Bozkir, Fokkema, MacNeil-Vroomen, Van Tilburg, & De Rooij, 2015).

Prevalence of Loneliness

Loneliness is a phenomenon experienced by children and adolescents, as well as by (older) adults (Perlman & Landolt, 1999). Using data from the European Social Survey (ESS) Yang and Victor (2011) compared the prevalence of loneliness using a one-item direct measure of loneliness in 25 European countries. National differences in percentages of frequent loneliness proved to be substantial, at every age level. Northern European countries showed the lowest percentages varying between 1 and 6 for those younger than 30 years, between 2 and 7 for those between 30 and 59 years, and between 3 and 9 for those aged 60 and over. Southern European countries showed somewhat higher levels, varying between 4 and 10 percent for those under 30, between 5 and 9 for those aged 30 to 59 years, and between 10 and 15 percent for those aged 60 and over. Eastern European countries showed the highest levels, with 6 to 15 percent for those under age 30, between 8 and 20 percent for those aged 30 to 59 years, and 19 to 34 per cent for those over age 60. These outcomes paralleled the results of a study by Fokkema, de Jong Gierveld and Dykstra (2012), who additionally showed that socioeconomic position (income level) and the availability of appropriate social welfare policies for those in need are key country-level conditions for the realization of a certain quality of life and the alleviation of loneliness.

Over the last 10 to 15 years, an exponentially increasing number of studies have explored loneliness from a *longitudinal perspective*, investigating the prevalence of loneliness over the life-course. Schinka, VanDulmen, Bossarte and Swahn (2012) showed that a higher loneliness score at age 10-12 was significantly correlated with a high loneliness score at age 15, and both are associated to high suicidal thoughts and behavior at age 15.

Jylhä (2004) studied the relationship between old age and loneliness in Finland, starting in 1979. In the first wave, loneliness, experienced either often or sometimes, varied from 26 per cent in the young-old age group to 55 per cent in the oldest-old group. In the longitudinal analyses the general trend was increasing loneliness in each age group, and the proportion of people reporting loneliness increased as the sample aged. In continuing this longitudinal research, 28 years after wave 1, Aartsen and Jylhä (2011) reported that about one third of the older adults who had not been lonely in wave 1 were lonely, which is a remarkable increase. Parallel outcomes emerged in research in Sweden (Dahlberg, Andersson, McKee, & Lennartsson, 2015) and Israel (Cohen-Mansfield, Shmotkin, & Goldberg, 2009): between waves, older adults experience varying levels of loneliness, but the general trend is increasing loneliness.

Dykstra, Van Tilburg and De Jong Gierveld (2005) investigated loneliness paths among older adults over a seven-year period and found that from one measure to the next, the loneliness scores of more than 70% of the respondents remained unchanged, whereas a decrease in loneliness was observed for between 10% and 13%, and an increase in loneliness was observed for between 11% and 18% of the respondents. As time passes, older adults become lonelier and the increase is highest for the oldest respondents.

Theoretical Approaches to Loneliness

The main approaches to loneliness focus on individual-level characteristics that predispose people to become lonely or to persist in being lonely. Firstly, Weiss (1974), a leading proponent of the *attachment perspective*, suggested there are different social provisions of relationships (e.g., attachment, sense of worth), each associated with different kinds of relationships. This, so-called deficit perspective, posits that the absence of specific types of relationships is associated with specific forms of loneliness. Emotional loneliness arises when a partner relationship dissolves through widowhood or divorce and is characterized by intense feelings of emptiness, abandonment, and forlornness. According to Weiss, this type of loneliness is only solvable by starting a new intimate relationship. Social support from family and friends cannot compensate the loss of the attachment figure. Social loneliness is largely attributable to support network deficits. Also working within the attachment framework, Mikulincer and Shaver (2014) have recently articulated a perspective on loneliness that illuminates the role of attachment anxiety and avoidance, two key attachment orientations.

Secondly, in contrast to the deficit approach Perlman and Peplau (1981) stated that a shortage of relationships does not directly and inevitably lead to loneliness. Acknowledging the importance of relationship expectations or standards, they developed a cognitive discrepancy approach to loneliness that focuses on the subjective evaluation of achieved relationships in association with relationship standards. Russell, Cutrona, McRae and Gomez (2012), for example, showed that students who reported having fewer close friendships than they desired were most likely to be lonely. Students who reported a fit between desired and actual numbers of close friends were the least lonely. The intensity of loneliness is affected not only by the type of contacts that are missed, but also by the time perspective required to “solve” and upgrade problematic relationships, and the capacities to change the situation (Dykstra & De Jong Gierveld, 1994; Perlman & Peplau, 1981). Dykstra and Fokkema (2007) compared and contrasted the deficit and cognitive approaches, and found that to explain loneliness, one should not only consider characteristics of personal relationships but also relationship preferences.

A third theoretical approach is based on a *genetic or evolutionary perspective*. The evolution of social connection and care requires that the selfish gene is supplemented with the need to form attachments, the social pain in response to disconnectedness and the reward felt when those connections are reinstated (Cacioppo et al., 2006). In this perspective loneliness is thought to operate in part through social pain, which co-opts the physical pain system. Experiences of physical and social pain may share a common neuroanatomical basis. Twin-based research (Boomsma, Willemsen, Dolan, Hawkey, & Cacioppo, 2005) demonstrated that the majority of resemblances in loneliness between twin relatives were attributable to shared genes. However, heritability dropped by age: loneliness heritability is 58% at age 7, but drops to 26% at age 12 (Bartels, Cacioppo, Husziak, & Boomsma, 2008).

Individual Factors in Loneliness

Research on antecedents of loneliness typically include the following characteristics in their models: (a) a series of factors that shape the characteristics of individuals' living conditions and consequently affect the level of social integration of individuals. These factors encompass among other: demographic and socio-structural factors (e.g., age, gender, educational level, work, income, health, ethnicity and migrant status) and personality characteristics (e.g., social skills, self-esteem, shyness, anxiety, introversion); the so-called distal factors (Hawkley et al., 2008); and (b) descriptive characteristics of the level of social integration, such as the size, the composition and the functioning of the personal network (intimate relationships as well as the broader group of acquaintances, colleagues, neighbors, and extended kin); the so-called proximal factors of loneliness (Hawkley et al., 2008).

Individual Factors Shaping One's Living Conditions: Age, Gender, Educational Level, Work, Income, Health, Migrant Status, and Personality Characteristics

AGE: FROM CHILDHOOD TO OLDER AGE

Loneliness can be experienced in all age groups, including the earlier developmental periods (Perlman & Landolt, 1999; Schinka et al., 2012). More than 60 percent of high school students report feeling lonely sometimes and their experiences are closely linked to the development of increasing expectations about social relationships, friendships, support and intimacy. Adolescents who suffer from *chronic* loneliness are more likely to report psychopathology, depression, suicidality and social skill deficits (Schinka et al., 2012).

Research shows only partial support for the often-heard assumption that loneliness is a problem specifically for older people. Loneliness is common only among the very old. Between 20 and 30% of middle-aged and young-old respondents report moderate or serious loneliness, of those aged 80 and over, 40–50% say they are 'often' lonely (Dykstra, 2009). Cornwell and Waite (2009) showed that among the very old, cognitive as well as physical decline are significantly associated with loss in the personal network and more severe loneliness.

Qualter et al. (2015) showed, in agreement with the evolutionary theory of loneliness, that people of all ages who are confronted with the aversive feelings of loneliness, are motivated to reconnect with others. During childhood, the focus on social threat may be adaptive because it motivates children to reconnect and provides clues about how to reengage. However, avoidance of social threat information among lonely young adults may indicate a tendency to disconnect from the self in socially threatening situations.

GENDER

Chodorow (1978) described the gender-specific socialization of men and women, arguing that men and women differ in the values they ascribe to different types of relationships. Men, socialized to be emotionally independent, prefer undemanding relationships and tend to rely on their wives and partners for social and emotional support. Women are socialized to have more complex affective needs in which an exclusive relationship to a man is not enough. Results from a meta-analysis (Pinquart & Sörensen, 2001) of 102 studies that investigated gender differences in loneliness show that women report significantly higher levels of loneliness than men. This is more pronounced in studies in which loneliness is measured with single-item indicators than in studies using multi-item measuring instruments. The difference might be related to men's greater reluctance to report loneliness in response to direct questions (see the measurement section of this chapter). Multivariate longitudinal analyses reveal different predictors of loneliness for men and women: widowhood, depression and mobility problems predict loneliness uniquely in the model for women, while low level of social contacts and social contact reduction predict loneliness uniquely in the model for men (Dahlberg et al., 2015).

EDUCATIONAL LEVEL, WORK AND INCOME

Persons with lower levels of education are less likely to be employed and, if employed, more likely to be employed in low-pay, no-benefit jobs. They also have lower levels of financial capability, which in turn negatively affect their economic security, well-being, and quality of living conditions. Disadvantaged socioeconomic circumstances shape people's ability to optimize and diversify social contacts, affecting loneliness (Ajrouch, Blandon, & Antonucci, 2005; Fokkema, De Jong Gierveld, & Dykstra, 2012). Loneliness may be particularly affected by changes in resources that result in having insufficient means to make ends meet. Research in rural Canada found higher levels of loneliness among longtime residents of newly affluent communities who were no longer able to take part in activities and organizations and for whom constrained financial circumstances led to truncated social connections (Keating, Eales, & Phillips, 2013).

HEALTH

Poor health and having functional limitations are related to reduced social participation in the community, diminished social contacts with friends and relatives, and poor relationship quality. Those who are in poor health, whether this is measured objectively or subjectively, tend to report higher levels of loneliness. Findings also show that lonely people have a higher risk of poor health and mortality (Ellwardt, Van Tilburg, Aartsen, Wittek, & Steverink, 2015; Holwerda et al., 2012; Iecovich, Jacobs, & Stessman, 2011; Jaremka et al., 2014; Luo, Hawkey, Waite, & Cacioppo, 2012; Luo & Waite, 2014; McHugh & Lawlor, 2016; Ong, Uchino & Wethington, 2016). Based on a meta-analysis across seventy prospective studies Holt-Lunstad et al. (2015) found a significant effect of social isolation, loneliness and living alone on the odds of mortality. Substantial evidence indicates that individuals lacking social connections are at risk for premature mortality. The risk associated with social isolation and loneliness is comparable with well-established risk factors for mortality, such as physical inactivity and obesity.

Loneliness and health are related via four mechanisms. The first involves a stress process. Well-integrated people live a more predictable and stable life, have stronger feelings of self-worth and belonging, and have a stronger identity. All contribute to being more resilient in case of stress. Stress disorganizes the physical system, and weakens the defense against diseases and chronic conditions (Uchino, Cacioppo & Kiecolt-Glaser, 1996). In particular support from the closest relationships is important to buffer the effect of stress on physical functioning. The second mechanism describes social influence on people's behavior. People who receive appropriate information or advice from their personal network tend to adopt a more healthy life style (Berkman, Glass, Brissette & Seeman, 2000; Cacioppo, Hawkley, & Bernston, 2003). Lonely individuals are less likely to engage in behaviors such as exercise, remembering to take medications, seeing their doctors, enjoying good nutrition, and relaxation (Mahon, Yarcheski, & Yarcheski, 2001; Pérodeau & du-Fort, 2000). However, it is also possible that unhealthy life styles are mediated. For example, the likelihood that people are obese is higher when they have networks with many overweight people (Smith & Christakis, 2008).

The third and fourth mechanism address the reversed causality, i.e., poor health as a risk factor for loneliness. People in poor health are limited in their capacities to maintain social relationships (Van Tilburg & Broese van Groenou, 2002). For example, a hearing problem disturbs verbal communication, and having physical limitations hinders visiting family and friends. Those who are in poor health, whether this is measured objectively or subjectively, report higher levels of loneliness (Havens, & Hall, 2001; Kramer, Kapteyn, Kuik, & Deeg, 2002; Penninx et al., 1999; Steverink, Westerhof, Bode, & Dittmann-Kohli, 2001). The fourth mechanism looks to the relationship with helpers. Poor health might mobilize helpers and increase support-giving, and thereby decrease the likelihood of loneliness. However, if people in need of help are too demanding, informal helpers might become overburdened resulting in distortion of the relationship and increasing loneliness (Field, Minkler, Falk, & Leino, 1993).

MIGRANT STATUS

The growing numbers of older migrants in Europe and other parts of the Western world, many of them characterized by vulnerabilities such as a low socio-economic position, adverse health conditions, a poor language proficiency and the loss or weakening of ties with the country of origin, are shown to be at risk of low social integration and high levels of loneliness. Recent narrative research (Cela & Fokkema, 2016; King, Cela, Fokkema, & Vullnetari, 2014) exemplified the relationship between these accumulated disadvantages and loneliness. This is supported by quantitative studies (e.g. De Jong Gierveld, Van der Pas, & Keating, 2015; Fokkema, & Naderi, 2013; Uysal-Bozkir et al., 2015; Wu & Penning, 2015).

PERSONALITY CHARACTERISTICS

People with poor social skills and psychological resources are likely to experience difficulty developing and maintaining relationships, and for that reason might feel lonely (Ernst &

Cacioppo, 1999). Similarly, people with a neurotic or anxious personality might harbor unrealistic relationship expectations or standards, and their unmet social needs might give rise to feelings of loneliness. Feeling socially uncomfortable, fear of intimacy, being easily intimidated by others, low self-esteem, being unable to communicate adequately to others are shown to be main causes of feelings of loneliness and might also make it more difficult to recover from loneliness (DiTommaso, Fizell & Robinson, 2015; Rokach, 2015).

Individual Factors Regarding the Level of Social Integration: Size, Composition and Functioning of the Personal Network

MARITAL AND PARTNER STATUS

From the 19th century sociologist Durkheim onward, marriage has been seen as an avenue toward alleviating social isolation and loneliness. Notwithstanding the generally lower levels of loneliness among those with a partner, over time, those living with a partner show a stronger increase in loneliness than do those who remain single. This finding suggests that the partner relationship might not offer the same kind of protection against loneliness at advanced ages as it does earlier in the life course. The person who previously was a major source of support may have become the target of intensive caregiving. Anxiety over a partner's health, together with the demands of caregiving, may contribute to significant increases in loneliness (Dykstra et al., 2005).

Although, in Western countries “new” types of partnerships such as consensual unions and “living apart and together” relationships are becoming increasingly popular, it is the content and not the form of the partner bond that matters (Finch, 2007). Persons with a partner who is not their most supportive network member and persons dissatisfied in the emotional, instrumental or sexual aspects of their relationship tend to be (very) lonely (De Jong Gierveld, Broese van Groenou, Hoogendoorn, & Smit, 2009; Hawkley et al., 2008). Generally speaking, however, persons with a partner bond tend to be better protected from loneliness and other problematic situations such as morbidity and mortality than persons without a partner bond and especially those living alone (Chen, Hicks, & While, 2014; Ellwardt et al., 2015; Holwerda et al., 2012; Theeke, 2009).

There are several mechanisms why the absence of a partner in the household might make people more vulnerable to loneliness. Persons living alone have smaller networks than those living with a partner (Pinquart & Sörensen, 2001). Second, when help is needed, the persons living alone lack in-house support and, by definition, have to orient themselves toward others outside the household. Third, living alone is, in many cases, the result of the dissolution of a partner relationship. Those who remain alone after the death of the partner are specifically at risk of loneliness, and the effects of widowhood remain for a long period

of time (Guiaux, Van Tilburg, & Broese van Groenou, 2007; Newall, Chipperfield & Bailis, 2014; Nicolaisen & Thorsen, 2014).

The effects of divorce on loneliness are also known to be decisive for the onset of loneliness. Divorce in middle adulthood continues to affect feelings of loneliness even at older ages (Dykstra & De Jong Gierveld, 2004). Recent research, however, has shown that the levels of loneliness among divorcees have diminished during the last decades, suggesting that the social position of divorcees has improved (Van Tilburg, Aartsen, & Van der Pas, 2015).

PARENT-CHILD RELATIONSHIPS

The centrality of the parent–child bond in people’s lives is undisputed. Especially adult children who live at close proximity or who live with old parents provide support and in doing so reduce the risks of loneliness. Note that support flows in co-residential households in Europe tend to be downward: the younger generation generally benefits (De Jong Gierveld, Dykstra, & Schenk, 2012; Kohli 2004). Levels of co-residence are dropping, even in countries where co-residence has been the norm such as Japan and China (Cong & Silverstein, 2015; Takagi & Silverstein, 2011). Takagi and Saito (2015) investigated the role of non co-resident children for Japanese older adults’ loneliness, and found that meeting children in person postpones loneliness, while talking with children on the phone increases the likelihood of loneliness.

Contacts with children are an important source of companionship and emotional support, and are known to alleviate loneliness, especially also for those who live alone (Grundy & Henretta, 2006; Routasalo, Savikko, Tilvis, Strandberg, & Pitkala, 2006; Sánchez, De Jong Gierveld, & Buz, 2014; Steed, Boldy, Grenade, & Iredell, 2007). Contrary to popular belief, Dutch research shows that contacts between independently living parents and their children are more frequent and more supportive in recent cohorts than in earlier cohorts, revealing that families have not declined in importance (Van der Pas, Van Tilburg, & Knipscheer, 2007).

SIBLINGS

Siblings are special in many ways. There is the common blood tie, the shared history of growing up together and of having the same background. The loss of a sibling has been found to contribute to loneliness among older persons (Gold, 1987). Siblings serve a particularly important function in alleviating the loneliness of those who lack the intimate attachment of a partner and have no children (Pinquart, 2003). However, Merz and De Jong Gierveld (2016) showed that a significant portion of older adults were involved in ambiguous or even conflict-laden interactions with siblings, resulting in feelings of discomfort and strong loneliness.

NONKIN RELATIONSHIPS

The importance of friendship for the alleviation of loneliness is well documented (Asher & Weeks, 2012; Cacioppo & Patrick, 2009; Scott et al., 2007): the joy of spending time together, the compassion evident in keeping up with personal ups and downs, and the exchange of ideas. Relationships with friends, colleagues, and other nonkin serve to connect people to circles outside their immediate family. The benefits of belonging to a set of interlocking networks can lower the risks of loneliness. Moreover, best friends can step in and function as confidants and thus help alleviate emotional loneliness, in particular for never partnered or childless adults (Russell et al., 2012).

Involvement in formal organizations is another source of sociability: church attendance, activities in voluntary associations, and volunteer work bring people together and are a means of forming attachments. More recent cohorts of older adults show increased social engagement in all forms of participation, including volunteer work (Ajrouch, Akiyama, & Antonucci, 2007; Broese van Groenou & Deeg, 2010). The salience of non-kin relationships is greater in younger cohorts than in older cohorts, presumably as the result of increasing individualization and emancipation (Suanet, Van Tilburg, & Broese van Groenou, 2013).

RELATIONSHIPS EXPECTATIONS OR STANDARDS

The cognitive approach to loneliness emphasizes that people evaluate whether their relationships measure up to their expectations or standards. Standards might be what a person aims for in relationships (e.g., a certain degree of intimacy, or a specific frequency of contact). Standards might also be desires to have specific types of relationships (e.g., an intimate partner, best friends, supportive colleagues). Standards develop over the course of life. Childhood experiences shape needs and desires for attachment (Bowlby, 1974), which are altered with new relationship experiences. Expectations regarding partner relationships are a case in point. Research has shown that over the course of time, men and women who have lost their partner by death start downplaying the advantages of having a partner and start upgrading the advantages of being single (Dykstra & De Jong Gierveld, 1994). In doing so, they free the way for other types of relationships. Dykstra and Fokkema (2007) found a parallel outcome for divorcees: the greater the importance attached to having a partner, the higher the level of emotional loneliness.

Macro Level Approach to Loneliness; Country Comparative Research

DEMOGRAPHIC COMPOSITION

Although personal, loneliness is not an exclusively individual phenomenon but embedded in given forms of social organization and cultural fabrics. For that reason country-level

differences in loneliness have been studied. Fokkema, de Jong Gierveld and Dykstra (2012) show that the high levels of loneliness in Eastern and Central European countries as compared to the modest loneliness levels in South Europe and the very modest levels in West and Northern Europe are largely attributable to demographic composition (e.g., a higher percentage of widows). Trends in marriage patterns and levels of fertility influence the composition of families and the availability of support by different members of the family. This demographic composition of a population shapes the opportunities for social integration. The proportion of married versus widowed people aged 75 years of age and above is a point in case.

CULTURAL NORMS AND VALUES

People's relationship expectations or standards are shaped by the normative climate in which they find themselves. Cultural norms and values can be conducive to loneliness. Norms and values affect people's ideas about the optimal size of the network, and the obligations and duties of family members. Living alone generally gives rise to loneliness, but this is the more so in countries where older adults without a partner are expected to live with their families (e.g., Greece, Italy) and the less so in countries where older adults without a partner prefer to live alone (e.g., Finland). Findings show that although living alone becomes progressively less common from Northern Europe to Southern Europe, experiences of loneliness progressively increase (Jylhä & Jokela, 1990). Additionally, it has been suggested that loneliness is high in collectivist-oriented communities, where sensitivity to social exclusion is stronger than in individualistic communities, which are characterized by autonomy and choice in interaction partners (Lykes & Kemmelmeier, 2014).

SOCIOECONOMIC CONTEXT, SOCIETAL WEALTH AND WELFARE

O'Rand (2001) postulated that across industrialized countries, the growing economic and social inequalities within populations form the fundamental social condition that yields negative outcomes in health and well-being. Inequality consists of economic, social, and psychosocial components and operates multilevel: across societal planes, the state, and the neighborhood to the individual. Scharf and colleagues (Phillipson & Scharf, 2004; Scharf & Keating, 2012; Scharf, Phillipson & Smith, 2005; Walsh, O'Shea & Scharf, 2012) emphasize the role of economic deprivation and the related broader social exclusion (e.g., from social relations, material resources, and basic services) of groups of older people, such as ethnic minorities, people living in rural areas, and those with disability and mental health problems.

The causal mechanism by which societal inequality affects well-being and loneliness operates via (a) a direct pathway connecting contextual inequality and persons' well-being via individuals' socioeconomic resources and quality of living conditions, and (b) an indirect pathway by which inequality and atomization at the community level reduce trust and increase persons' perceptions of relative deprivation, leading to negative outcomes such as lower levels of social integration and loneliness.

An Integrative Model of Individual Level and Societal Context Factors

In general, the problems of lonely people cannot be regarded as individual failures only. Characteristics of the societal context, such as societal welfare, the demographic composition of the population, and prevailing norms and values concerning filial support can be loneliness-provoking factors. Reconsidering research outcomes De Jong Gierveld and Tesch-Römer (2012) formulated an integrated theoretical model, combining individual-level factors (quality of living conditions, level of social integration) and societal-level elements (strength of societal welfare, demographic composition and cultural norms and values) for understanding the puzzling reality around social integration and loneliness in varying social contexts.

Insert Figure 1 about here

The integrative model proposed is graphically depicted in Figure 1. Starting point is the individual level model on the emergence of loneliness as described in the lower part of Figure 1. Additionally, societal context factors are described in the upper part of Figure 1. The context factors exert main effects on the individual level factors (dotted grey arrows). Marginal societal wealth increases the risk that persons are characterized by a lower quality of living conditions (e.g. difficulties in making ends meet and ill health) and hence, are socially less integrated as compared to persons living in societies with a higher level of welfare. A higher rate of marriages increases the likelihood of household and familial support. Familialistic norms in a culture increase the probability to be in contact and to exchange instrumental and emotional support with family members.

Furthermore, an interaction is proposed between societal context level and individual level factors (solid black lines in Figure 1). The crucial arena for these interactions is individuals' social expectation. As already mentioned, individual's social expectations are affected by prevailing cultural norms and values (main effect). Additionally, individual's social expectations are affected by the other macro level factors. For example, living in a richer country with a government that can financially or otherwise support families to a certain extent enables older adults to continue living in their homes. Prevailing standards that fit this situation are less oriented towards filial obligations (highlighting the need for instrumental kin support), and more directed towards a broader field of instrumental and emotional support. For more illustrations regarding the interplay of individual and societal factors in the emergence of loneliness, see De Jong Gierveld and Tesch-Römer (2012).

Prevention, coping and interventions

Concerns about the repercussions of loneliness for adults' physical and mental well-being have spurred researchers and practitioners to develop interventions to reduce loneliness. These initiatives have not gone unnoticed. In the Netherlands, for example, a group of

national organizations in the care and welfare sectors (going by the name of *Coalitie Erbij*) are working together since 2008 in an effort to combat loneliness. In the United Kingdom, the *Campaign to End Loneliness*, led by a group of charities, was launched in 2011. Both coalitions combine research, policy, lobbying and innovation to aid efforts to tackle loneliness. There is an incongruity, however, between the numerous endeavors aimed at reducing loneliness and the limited empirical basis demonstrating that interventions actually work. It is not yet common practice that an intervention is accompanied by effect research and process evaluation.

Recognizing the importance of identifying the more effective loneliness interventions so that informed decisions can be made about the allocation of scarce resources, increasingly more evaluation research is being carried out. In the past decade, several reviews of the effectiveness of loneliness interventions have been published (Cattan, White, Bond, & Learmouth, 2005; Dickens, Richards, Greaves, & Campbell, 2011; Findlay, 2003; Hagan, Manktelow, Taylor, & Mallett, 2014; Masi, Chen, Hawkley, & Cacioppo, 2011). The reviews share several observations. They repeatedly report that few interventions turn out to be effective. One reason for the lack of success of interventions is poor development of the substantive due to insufficient understanding of the roots of loneliness (Dickens et al., 2011).

All reviews note substantial heterogeneity in the interventions delivered. Nevertheless, some common findings emerge. Interventions are more likely to be effective if they are developed on the basis of a theoretical framework, involve targeted groups, such as the widowed or the house-bound, and have an educational or training component which requires active participation on the part of the older adult. Nowadays interventions are also offered via internet (e.g. Bouwman et al., 2016). Results show that quick fixes or single shots such as a film plus dinner at a residential home do not result in reduced loneliness. Superficial get-togethers with few long-term obligations (e.g., friendly home visits) are not successful at reducing loneliness either.

Even if interventions aimed at reducing loneliness are effective, considerable uncertainty remains regarding the underlying mechanisms. There is insufficient knowledge about why particular interventions meet with success. Neither is there a thorough understanding of why particular interventions fail to result in a reduction of loneliness in older people. Papers describing negative results are less likely to be published. As a result, researchers and practitioners are deprived of critical information and run the risk of wasting time, money and effort on ineffective but well-intentioned programs.

Following the definition of loneliness as an unwanted discrepancy between desired and existing personal relationships (see above), interventions aimed at reducing loneliness can focus on (a) improving the number and quality of the relationship network, and/or (b) adapting desired levels for interpersonal interactions to “realistic” levels. The first (improving relationships) involves *active* coping, whereas the second (lowering expectations about relationships) involves *regulative* coping (Schoenmakers, Van Tilburg, & Fokkema, 2012).

Research on the effectiveness of 17 loneliness interventions carried out in the Netherlands contributes to a better understanding of what kinds of loneliness interventions work and what kinds do not work. For example, factors contributing to the success of project “Group activities in a residential home” (structured discussions over morning coffee) were: an emphasis on activities rather than loneliness, initiation of the idea by the residents themselves, implementation by professionals rather than volunteers, and embedment in continuing activities (Van Kordelaar, Stevens, & Pleiter, 2004). The success of a second project “Esc@pe” (computer course for physically disabled persons confined to the home) is attributable to having tackled the source of loneliness, namely barriers to social interaction (Fokkema & Knipscheer, 2007). The computer course provided structure in daily activities (distraction from loneliness), face to face contacts with volunteers who served as course instructors, and online contacts with other participants in the project, and with family and friends.

Newall and Menec (2015) and De Jong Gierveld and Fokkema (2015) make a plea to move from loneliness reduction to loneliness prevention, that is, anticipating the likelihood of loneliness and taking actions to avoid these experiences. A key factor in loneliness prevention is devoting explicit attention to the creation and maintenance of the network or ‘convoy’ of personal relationships. Though the quality of personal relationships and reciprocal exchanges of support are crucial to a well-functioning convoy, it is necessary to have a certain number of relationships as a starting point for developing higher-quality relationships (Antonucci, Ajrouch, & Birditt, 2014). Loneliness prevention encompasses (a) viewing a person’s social surroundings as basically responsive to actions aimed at increasing embeddedness and (b) advising individuals on their route to a satisfying convoy. If necessary, people should be referred to organizations that are specialized in helping the socially isolated. Successive stages in the prevention of loneliness are: awareness of the problem, being knowledgeable, motivated and able to prevent loneliness, and defining and following the actions to prevent loneliness.

Concluding comments

Preparing this chapter allowed the authors a renewed reflection on old and new research and older and newer theories of loneliness. The undertaking showed that loneliness research is expanding, especially over the last 10 to 15 years. An increasing flow of work from disciplines such as psychology, sociology, and epidemiology has broadened the understanding of the mechanisms behind the onset and continuation of loneliness. The review also led to some additional observations: nowadays we see (a) more longitudinal research based on high quality loneliness measuring instruments; (b) more international comparative research investigating cultural values and norms affecting country level differences in loneliness; and (c) more research that no longer stems exclusively from the US, Canada, Western and Northern Europe, but increasingly address the antecedents and consequences of loneliness in Central and Eastern Europe, Asia, and even Africa.

Recent loneliness publications have addressed well known precipitating factors such as the support from adult children to their ageing parents (Takagi & Saito, 2015; about co-residing families in Japan; De Jong Gierveld, Dykstra & Schenk, 2012; about co-residing families in Eastern Europe), but have also taken up less frequently researched issues. Examples encompass the role of meeting friends in pubs (Buz, Sanchez, Levenson & Aldwin, 2014, and Sanchez, De Jong Gierveld & Buz, 2014; both about older adults in Spain), or the risks of loneliness for atypical groups of adults such as lesbian, gay and bisexual adults (Kuyper & Fokkema, 2010), various ethnic groups in New Zealand including the Maori (Stephens, Alpass, Towers & Stevenson, 2011), and older adults living alone in China (Chen, Hicks, & While, 2014).

Additionally, over the past fifteen years we have gained insights from a 'neighboring' and partly overlapping discipline: family sociologists. Around the year 2000, family sociologists started to pay attention to not only positive facets of people's relationships, that is helpful support that is also perceived as such, but also to negative social exchanges and the absence of support. Scholars investigated the multidimensionality of intergenerational family ties (Bengtson, Giarrusso, Mabry & Silverstein, 2002; Silverstein, Burholt, Wenger & Bengtson, 1998; Dykstra & Fokkema, 2011), and moved away from the dominant focus on family solidarity. Lüscher and Pillemer (1998) introduced a focus on ambivalence in adult child-parent ties, and Giarrusso, Silverstein, Gans, and Bengtson (2005) advocated the investigation of both solidarity and conflict as characteristics of relationships with members of the social convoy. Since then, survey research into personal relationships and loneliness includes ambivalence and conflict as important aspects of network relationships. Typologies of solidarity and conflict in adult child-parent relationships have been developed (e.g., Lowenstein, 2007; Van Gaalen & Dykstra, 2006). Krause, Newsom and Rook (2008) showed, based on two United States nationwide surveys, significant inverse associations between a situation of negative social interactions - that is, not getting help when help is needed - and health and wellbeing.

Nevertheless, we are convinced that not-supportive and conflicted relationships are significantly underreported. Most loneliness researchers are not asking about persons with whom respondents are connected via a conflict bond. And here, we might make a step forward in exploring loneliness, because conflictive bonds significantly affect a person's level of loneliness, presumably more so than a series of supportive contacts with others.

Recent quantitative, and especially qualitative research provides critical insights. Greater insight into loneliness was obtained when defective marriage relationships were explicitly considered in survey research. Conflict-ridden and emotionally unsupportive marriage relationships proved to be associated with higher levels of loneliness (Dykstra & Fokkema, 2007). Adults who were confronted with adverse childhood events (such as being bullied or being confronted with enduring conflicts between parents) report higher levels of loneliness even in old age (Nicolaisen & Thorsen, 2013).

Another promising area of loneliness research involves broader social change. We refer to longitudinal research oriented towards investigating cohort differences over time in factors affecting loneliness. Examples encompass research by Ajrouch, Akiyama and Antonucci (2007), Broese van Groenou and Deeg (2010), and Van Tilburg et al. (2015) indicating that adults of more recent birth cohorts showed increased social engagement in all forms of participation (including volunteer work), except for religious involvement. Future research should address the possibility of changing patterns of social integration and loneliness, as related to characteristics of members of successive birth cohorts.

References

- Aartsen, M., & Jylha, M. (2011). Onset of loneliness in older adults: results of a 28 year prospective study. *European Journal of Ageing*, 8, 31-38.
- Ajrouch, K., Akiyama, H., & Antonucci, T. C. (2007). Cohort differences in social relations among the elderly. In H. W. Wahl, C. Tesch-Römer & A. Hoff (Eds.), *New Dynamics in old age: Individual, environmental and societal perspectives* (pp. 43-63). New York, NY: Baywood, Amityville.
- Ajrouch, K., Blandon, A. Y., & Antonucci, T. C. (2005). Social networks among men and women: The effects of age and socioeconomic status. *Journal of Gerontology: Social Sciences*, 60B, S311-S317.
- Asher, S. R., & Weeks, M. S. (2012). *Social relationships, academic engagement, and well-being in college: Findings from the Duke Social Relationships Project*. Report Duke Social Relationships Project.
- Antonucci, T. C., Ajrouch, K. J., & Birditt, K. S. (2014). The convoy model: Explaining social relations from a multidisciplinary perspective. *The Gerontologist*, 54, 82-92.
- Bartels, M., Cacioppo, J. T., Husziak, J. J., & Boomsma, D. I. (2008). Genetic and environmental contributions to stability in loneliness throughout childhood. *American Journal of Medical Genetics Part B (Neuropsychiatric Genetics)*, 147B, 385-391.
- Bengtson, V. L., Giarrusso, R., Mabry, J. B., & Silverstein, M. (2002). Solidarity, conflict, and ambivalence: Complementary or competing perspectives on intergenerational relationships? *Journal of Marriage and the Family*, 64, 568-576.
- Berkman, L. F., Glass, T., Brisette, I., & Seeman, T. E. (2000). From social intergration to health: Durkheim in the new millenium. *Social Science and Medicine*, 51, 843-857.
- Boomsma, D. I., Willemsen, G., Dolan, C., V., Hawkley, L. C., & Cacioppo, J. T. (2005). Genetic and environmental contributions to loneliness in adults: The Netherlands Twin Register Study. *Behavior Genetics*, 35, 745-752.
- Bouwman, T. E., Aartsen, M. J., Van Tilburg, T. G., & Stevens, N. L. (2016). Does stimulating various coping strategies alleviate loneliness? Results from an online Friendship Enrichment Program. *Journal of Social and Personal Relationships*.
- Broese van Groenou, M., & Deeg, D. (2010). Formal and informal social participation of the 'young old' in the Netherlands in 1992 and 2002. *Ageing & Society*, 30, 445-466.
- Bowlby, J. (1974). *Attachment and loss: Vol. 1. Attachment*. London: Hogart Press and the Institute of Psycho-Analysis.

- Buz, J., Sanchez, M., Levenson, M. R., & Aldwin, C. M. (2014). Aging and social networks in Spain: The importance of pubs and churches. *The International Journal of Aging and Human Development*, *78*, 23-46.
- Cacioppo, J. T., Fowler, J. H., & Christakis, N. A. (2009). Alone in a crowd: The structure and spread of loneliness in a large social network. *Journal of Personality and Social Psychology*, *97*, 977-991.
- Cacioppo, J. T., Hawkley, L. C., & Berntson, G. G. (2003). The anatomy of loneliness. *Current Directions in Psychological Science*, *12*, 71-74.
- Cacioppo, J. T., Hawkley, L. C., Ernst, J. M., Burleson, M. H., Berntson, G. G., Nouriani, B., & Spiegel, D. (2006). Loneliness with a nomological net: An evolutionary perspective. *Journal of Research in Personality*, *40*, 1054-1085.
- Cacioppo, J. T., & Patrick, W. (2009). *Loneliness: Human nature and the need for social connection*. New York, NY: W. W. Norton.
- Cattan, M., White, M., Bond, J., & Learmouth, A. (2005). Preventing social isolation and loneliness among older people: A systematic review of health promotion interventions. *Ageing & Society*, *25*, 41-67.
- Cela, E., & Fokkema, T. (2016). Being lonely later in life: A qualitative study among Albanians and Moroccans in Italy. *Ageing & Society*.
- Chen, Y., Hicks, A., & While, A. E. (2014). Loneliness and social support of older people living alone in a county of Shanghai, China. *Health and Social Care in the Community*, *22*(2), 113-123.
- Chodorow, N. (1978). *The reproduction of mothering: Psychoanalysis and the sociology of gender*. Berkeley, CA: University of California Press.
- Cohen-Mansfield, J., Shmotkin, D., & Goldberg, S. (2009). Loneliness in old age: longitudinal changes and their determinants in an Israeli sample. *International Psychogeriatrics*, *21*, 1160-1170.
- Cong, Z. & Silverstein, M. (2015). End-of-life co-residence of older parents and their sons in rural China. *Canadian Journal on Aging / La Revue canadienne du vieillissement*, *34*, 31-341.
- Cornwell, E. Y., & Waite, L. J. (2009). Social disconnectedness, perceived isolation, and health among older adults. *Journal of Health and Social Behavior*, *50*, 31-48.
- Dahlberg, L., Andersson, L., McKee, K. J., & Lennartsson, C. (2015). Predictors of loneliness among older women and men in Sweden: A national longitudinal study. *Ageing & Mental Health*, *19*, 409-417.

- De Jong Gierveld, J., Broese van Groenou, M., Hoogendoorn, A. W., & Smit, J. H. (2009). Quality of marriages in later life and emotional and social loneliness. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *64B*, 497-506.
- De Jong Gierveld, J., Dykstra, P. A., & Schenk, N. (2012). Living arrangements, intergenerational support types and older adult loneliness in Eastern and Western Europe. *Demographic Research*, *27*, 167-200.
- De Jong Gierveld, J., & Fokkema, T. (2015). Strategies to prevent loneliness. In A. Sha'ked & A. Rokach (Eds.), *Addressing loneliness: Coping, prevention and clinical interventions* (pp. 218-230). New York, NY: Routledge.
- De Jong Gierveld, J., & Kamphuis, F. (1985). The development of a Rasch-type loneliness scale. *Applied Psychological Measurement*, *9*, 289-299.
- De Jong Gierveld, J., & Tesch-Römer, C. (2012). Loneliness in old age in Eastern and Western European societies: Theoretical perspectives. *European Journal of Ageing*, *9*(4), 285-295.
- De Jong Gierveld, J., Van der Pas, S., & Keating, N. (2015). Loneliness of Older Immigrant Groups in Canada: Effects of Ethnic-Cultural Background. *Journal of Cross-Cultural Gerontology*, *30*, 251-268.
- De Jong Gierveld, J., & Van Tilburg, T. G. (1999). *Manual of the loneliness scale*. VU University Amsterdam, Department of Social Research Methodology.
- De Jong Gierveld, J., & Van Tilburg, T. G. (2006). A six-item scale for overall, emotional and social loneliness: Confirmative tests on new survey data. *Research on Aging*, *28*, 582-598.
- De Jong Gierveld, J., & Van Tilburg, T. G. (2010). The De Jong Gierveld Short Scales for Emotional and Social Loneliness: Tested on data from seven countries in the UN Generations and Gender Surveys. *European Journal of Ageing*, *7*, 121-130.
- Dickens, A. P., Richards, D. H., Greaves, C. J., & Campbell, J. L. (2011). Interventions targeting social isolation in older people: A systematic review. *BMC Public Health*, *11*, 647.
- DiTommaso, E., Brannen, C., & Best, L. A. (2004). Measurement and validity characteristics of the short version of the social and emotional loneliness scale for adults *Educational and Psychological Measurement*, *64*, 99-119.
- DiTommaso, E., Fizell, S. R., & Robinson, B. A. (2015). Chronic loneliness within an attachment framework: Processes and interventions. In A. Sha'ked & A. Rokach (Eds.),

Addressing loneliness: Coping, prevention and clinical interventions (pp. 241-253). New York, NY: Routledge.

- DiTommaso, E., & Spinner, B. (1993). The development and initial validation of the social and emotional loneliness scale for adults (SELSA). *Personality and Individual Differences, 14*, 127–134.
- Dykstra, P. A. (1990). *Next of non-kin. The importance of primary relationships for older adults' well-being*. Amsterdam/Lisse, the Netherlands: Swets & Zeitlinger.
- Dykstra, P. A. (2009). Older adult loneliness: Myths and realities. *European Journal of Ageing, 6*, 91-100.
- Dykstra, P. A., & De Jong Gierveld, J. (1994). The theory of mental incongruity, with a specific application to loneliness among widowed men and women. In R. Erber & R. Gilmour (Eds.), *Theoretical frameworks for personal relationships* (pp. 235–259). Hillsdale NJ: Erlbaum.
- Dykstra, P. A., & De Jong Gierveld, J. (2004). Gender and marital-history differences in social and emotional loneliness among Dutch older adults. *Canadian Journal on Aging, 23*, 141–155.
- Dykstra, P. A., & Fokkema, T. (2007). Social and emotional loneliness among divorced and married men and women: Comparing the deficit and cognitive perspectives. *Basic and Applied Social Psychology, 29*, 1-12.
- Dykstra, P. A., & Fokkema, T. (2011). Relationships between parents and their adult children: A West European typology of late-life families. *Ageing & Society, 31*, 545-569.
- Dykstra, P. A., Van Tilburg, T., & De Jong Gierveld, J. (2005). Changes in older adult loneliness: Results from a seven-year longitudinal study. *Research on Aging, 27*, 725-747.
- Ellwardt, L., van Tilburg, T., Aartsen, M., Wittek, R., & Steverink, N. (2015). Personal networks and mortality risk in older adults: A twenty-year longitudinal Study. *PLoS ONE 10*(3), e0116731.
- Ernst, J., & Cacioppo, J. T. (1999). Lonely hearts: Psychological perspectives on loneliness. *Applied & Preventive Psychology, 8*, 1-22.
- Field, D., Minkler, M., Falk, F., & Leino, V. (1993). The influence of health on family contacts and family feelings in advanced old age: A longitudinal study. *Journal of Gerontology, 48*, 18-28.
- Finch, J. (2007). Displaying families. *Sociology, 41*, 65-81.

- Findlay, R.A. (2003). Interventions to reduce social isolation amongst older people: Where is the evidence? *Ageing & Society*, *23*, 647–658.
- Fokkema, T., De Jong Gierveld, J., & Dykstra, P. A. (2012). Cross-national differences in older adult loneliness. *The Journal of Psychology*, *146*, 201-228.
- Fokkema, C. M. & Knipscheer, K. (2007), Escape loneliness by going digital: A quantitative and qualitative evaluation of a Dutch experiment in using ECT to overcome loneliness among older adults. *Aging & Mental Health*, *11*, 496-504
- Fokkema, T., & Naderi, R. (2013). Differences in late-life loneliness: a comparison between Turkish and native-born older adults in Germany. *European Journal of Ageing*, *10*, 289-300.
- Giarrusso, R., Silverstein, M., Gans, D., & Bengtson, V. L. (2005). Ageing parents and adult children: New perspectives on intergenerational relationships. In M. L. Johnson, V. L. Bengtson, P. G. Coleman, & T. B. L. Kirkwood (Eds.), *The Cambridge handbook of age and ageing* (pp. 413-421). Cambridge, NY: Cambridge University Press.
- Gold, D. T. (1987). Siblings in old age: Something special. *Canadian Journal on Aging*, *6*, 199–215.
- Grundy, E., & Henretta, J. C. (2006). Between elderly parents and adult children: A new look at the intergenerational care provided by the ‘sandwich generation’. *Ageing and Society*, *26*, 707-722.
- Guiaux, M., Van Tilburg, T., & Broese van Groenou, M. B. (2007). Changes in contact and social support exchange in personal networks after widowhood. *Personal Relationships*, *14*, 457-473.
- Hagan, R., Manktelow, R., Taylor, B. J., & Mallett, J. (2014). Reducing loneliness amongst older people: a systematic search and narrative review. *Aging & Mental Health* *18*, 683-693.
- Havens, B., & Hall, M. (2001). Social isolation, loneliness, and the health of older adults. *Indian Journal of Gerontology*, *14*, 144-153.
- Hawkey, L. C., Hughes, M. E., Waite, L. J., Masi, C. M., Thisted, R. A., & Cacioppo, J. T. (2008). From social structural factors to perceptions of relationship quality and loneliness: the Chicago health, aging, and social relations study. *Journal of Gerontology, SOCIAL SCIENCES*, *63B*, S375-S384.
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, *10*, 227-237.

- Holwerda, T. J., Beekman, A. T. F., Deeg, D. J. H., Stek, M. L., Van Tilburg, T. G., Visser, P. J., . . . Schoevers, R. A. (2012). Increased risks of mortality associated with social isolation in older men: Only when feeling lonely? Results from the Amsterdam Study of Elderly (AMSTEL). *Psychological Medicine, 42*, 843-853.
- Hughes, M. E., Waite, L. J., Hawkey, L. C., & Cacioppo, J. T. (2004). A short scale for measuring loneliness in large surveys: Results from two population-based studies. *Research on Aging, 26*, 655-672.
- Iecovich, E., Jacobs, J. M., & Stessman, J. (2011). Loneliness, social networks, and mortality: 18 years of follow-up. *The International Journal of Aging and Human Development, 72*, 243-263.
- Jaremka, L. M., Andridge, R. R., Christopher, P., Alfano, C. M., Povoski, S. P., Lipari, A. M., . . . Kiecolt-Glaser, J. K. (2014). Pain, depression, and fatigue: Loneliness as a longitudinal risk factor. *Health Psychology, 33*, 948-957.
- Jylhä, M. (2004). Old age and loneliness: Cross-sectional and longitudinal analyses in the Tampere Longitudinal Study on Ageing. *Canadian Journal of Aging/La Revue canadienne du vieillissement, 23*, 157-168.
- Jylhä, M., & Jokela, J. (1990). Individual experiences as cultural: A cross-cultural study on loneliness among the elderly. *Ageing and Society, 10*, 295-315.
- Jylhä, M., & Saarenheimo, M. (2010). Loneliness and ageing: Comparative perspectives. In D. Dannefer & C. Phillipson (Eds.), *Handbook of social gerontology* (pp. 317-328). London, UK: Sage.
- Keating, N., Eales, J., & Phillips, J. E. (2013). Age-friendly rural communities: Conceptualizing 'best-fit'. *Canadian Journal on Aging/La Revue canadienne du vieillissement, 32*, 319-332.
- King, R., Cela, E., Fokkema, T., & Vullnetari, J. (2014). The Migration and Wellbeing of the Zero Generation: Transgenerational Care, Grandparenting and Loneliness amongst Albanian Older People. *Population, Space and Place, 20*, 728-738.
- Kohli, M. (2004). Intergenerational transfers and inheritance: A comparative view. *Annual Review of Gerontology and Geriatrics, 24*, 266-289.
- Kramer, S. E., Kapteyn, T. S., Kuik, D. J., & Deeg, D. J. H. (2002). The association of hearing impairment and chronic diseases with psychosocial health status in older age. *Journal of Aging and Health, 14*, 122-137.
- Krause, N., Newsom, J. T., & Rook, K. S. (2008). Financial strain, negative social interaction, and self-rated health: Evidence from two United States nationwide longitudinal surveys. *Ageing & Society, 28*, 1001-1023.

- Kuyper, L., & Fokkema, T. (2010). Loneliness among older lesbian, gay, and bisexual adults: the role of minority stress. *Archives of Sexual Behavior, 39*, 1171-1180.
- Lau, S., & Gruen, G. E. (1992). The social stigma of loneliness: Effect of target person's and perceiver's sex. *Personality and Social Psychology Bulletin, 18*, 182-189.
- Lowenstein, A. (2007). Solidarity–Conflict and ambivalence: Testing two conceptual frameworks and their impact on quality of life for older family members. *Journal of Gerontology: Social Sciences, 62B*, S100-107.
- Luo, Y., Hawkey, L. C., Waite, L. J., & Cacioppo, J. T. (2012). Loneliness, health, and mortality in old age: A national longitudinal study. *Social Science and Medicine, 74*, 907-914.
- Luo, Y., & Waite, L. J. (2014). Loneliness and mortality among older adults in China. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 69*, 633-645.
- Lüscher, K., & Pillemer, K. (1998). Intergenerational ambivalence: A new approach to the study of parent-child relations in later life. *Journal of Marriage and the Family, 60*, 413-425.
- Lykes, V. A., & Kimmelmeier, M. (2014). What predicts loneliness? Cultural difference between individualistic and collectivistic societies in Europe. *Journal of Cross-Cultural Psychology, 45*, 468-490.
- Mahon, N. E., Yarcheski, A., & Yarcheski, T. J. (2001). Mental health variables and positive health practices in early adolescents. *Psychological Reports, 88*, 1023-1030.
- Masi, C. M., Chen, H.-Y., Hawkey, L. C., & Cacioppo, J. T. (2011). A meta-analysis of interventions to reduce loneliness. *Personality and Social Psychology Review, 15*, 219–266.
- McHugh, J. E., & Lawlor, B. A. (2016). Executive functioning independently predicts self-rated health and improvement in self-rated health over time among community-dwelling older adults. *Aging & Mental Health, 20*, 415-422.
- Merz, E.-M., & De Jong Gierveld, J. (2016). Childhood memories, family ties, sibling support and loneliness in ever-widowed older adults: quantitative and qualitative results. *Ageing & Society, 36*, 534 - 561.
- Mikulincer, M., & Shaver, P. R. (Eds.). (2014). *Mechanisms of social connection: From brain to group*. Washington, DC: American Psychological Association.
- Moustakas, C. E. (1961). *Loneliness*. New York, NY: Prentice Hall.

- Moustakas, C. E. (2012). Heuristic research: Design, methodology, and applications. 5 applications of heuristic research. In B. L. Mijuskovic (Ed.), *Loneliness in philosophy, psychology and literature* (3rd ed., pp. 91-124). Bloomington, IN: iUniverse.
- Newall, N. E., Chipperfield, J. G., & Bailis, D. S. (2014). Predicting stability and change in loneliness in later life. *Journal of Social and Personal Relationships*, *31*, 335-351.
- Newall, N. E. G., & Menec, V. H. (2015). Targeting socially isolated older adults: A process evaluation of the Senior Centre Without Walls Social and Educational Program. *Journal of Applied Gerontology* *34*, 958-976.
- Nicolaisen, M., & Thorsen, K. (2014). Loneliness among men and women – a five-year follow-up study. *Aging & Mental Health*, *18*, 194-206.
- Ong, A. D., Uchino, B. N., & Wethington, E. (2016). Loneliness and health in older adults: A mini-review and synthesis. *Gerontology*, *62*, 443-449.
- O’Rand, A. M. (2001). Stratification and the life course; the forms of life-course capital and their interrelationships. In R. H. Binstock & L. K. George (Eds.), *Handbook of aging and the social sciences* (5th ed., pp. 197–213). New York, NY: Academic Press.
- Penning, M. J., Liu, G., & Chou, P. H. B. (2014). Measuring loneliness among middle-aged and older adults: The UCLA and de Jong Gierveld loneliness scales. *Social Indicator Research*, *118*, 1147-1166.
- Penninx, B. W. J. H., Van Tilburg, T., Kriegsman, D. M. W., Boeke, A. J. P., Deeg, D. J. H., & Van Eijk, J. T. M. (1999). Social network, social support, and loneliness in older persons with different chronic diseases. *Journal of Aging and Health*, *11*, 151-168.
- Perlman, D., & Landolt, M. A. (1999). Examination of loneliness in children-adolescents and in adults: Two solitudes or unified enterprise? In K. J. Rotenberg & S. Hymel (Eds.), *Loneliness in childhood and adolescence* (pp. 325-352). New York, NY: Cambridge University Press.
- Perlman, D., & Peplau, L. A. (1981). Toward a social psychology of loneliness. In R. Gilmour & S. Duck (Eds.), *Personal relationships 3: Personal relationships in disorder* (pp. 31-43). London, UK: Academic Press.
- Pérodeau, G. M., & Du Fort, G. G. (2000). Psychotropic drug use and the relation between social support, life events, and mental health in the elderly. *The Journal of Applied Gerontology*, *19*, 23-41.
- Phillipson, C., & Scharf, T. (2004). *The impact of government policy on social exclusion among older people; A review of the literature for the Social Exclusion Unit in the Breaking the Cycle series*. Wetherby, UK: Office of the Deputy Prime Minister Publications.

- Pinquart, M. (2003). Loneliness in married, widowed, divorced, and never-married older adults. *Journal of Social and Personal Relationships, 20*, 31–53.
- Pinquart, M., & Sörensen, S. (2001). Gender differences in self-concept and psychological well-being in old age: A meta-analysis. *The Journal of Gerontology: Series B: Psychological Sciences and Social Sciences, 56B*, 195–213.
- Qualter, P., Vanhalst, J., Harris, R., Van Roekel, E., Lodder, G., Bangee, M., . . . Verhagen, M. (2015). Loneliness across the life span. *Perspectives on Psychological Science, 10*, 250-264.
- Rokach, A. (2015). Loneliness, alienation, solitude and our lives. In A. Sha'ked & A. Rokach (Eds.), *Addressing loneliness: Coping, prevention and clinical interventions* (pp. 3-19). New York, NY: Routledge.
- Routasalo, P. E., Savikko, N., Tilvis, R. S., Strandberg, T. E., & Pitkala, K. H. (2006). Social contacts and their relationships to loneliness among aged people: A population-based study. *Gerontology, 52*, 181-187.
- Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment, 66*, 20–40.
- Russell, D. W., Cutrona, C. E., McRae, C., & Gomez, M. (2012). Is loneliness the same as being alone? *The Journal of Psychology, 146*, 7-22.
- Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA loneliness scale: Concurrent and discriminant validity evidence. *Journal of Personality and Social Psychology, 39*, 472-480.
- Russell, D., Peplau, L. A., & Ferguson, M. L. (1978). Developing a measure of loneliness. *Journal of Personality Assessment, 42*, 290-294.
- Sánchez, M. M., De Jong Gierveld, J., & Buz, J. (2014). Loneliness and the exchange of social support among older adults in Spain and the Netherlands. *Ageing & Society, 34*, 330-354.
- Scharf, T., & Keating, N. C. (2012). Social exclusion in later life: A global challenge. In T. Scharf & N. C. Keating (Eds.), *From exclusion to inclusion in old age* (pp. 1-16). Bristol, UK: Policy Press.
- Scharf, T., Phillipson, C., & Smith, A. E. (2005). Social exclusion of older people in deprived urban communities of England. *European Journal of Ageing, 2*, 76-87.
- Schinka, K. C., VanDulmen, M. H. M., Bossarte, R., & Swahn, M. (2012). Association between loneliness and suicidality during middle childhood and adolescence:

- Longitudinal effects and the role of demographic characteristics. *The Journal of Psychology*, *146*, 105-118.
- Schoenmakers, E. C., Van Tilburg, T. G., & Fokkema, T. (2012). Coping with loneliness: What do older adults suggest? *Aging & Mental Health*, *16*, 353-360.
- Scott, S. B., Bergeman, C. S., Verney, A., Longenbaker, S., Markey, M. A., & Bisconti, T. L. (2007). Social support in widowhood : A mixed methods study. *Journal of Mixed Methods Research* *2007*, *1*, 242-266.
- Silverstein, M., Burholt, V., Wenger, G. C., & Bengtson, V. L. (1998). Parent-child relations among very old parents in Wales and the United States: A test of modernization theory. *Journal of Aging Studies*, *12*, 387-409.
- Silverstein, M., & Chen, X. (1996). Too much of a good thing? Intergenerational social support and the psychological well-being of older persons. *Journal of Marriage and Family*, *58*, 970-982.
- Smith, K. P., & Christakis, N. A. (2008). Social networks and health. *Annual Review of Sociology*, *34*, 405-429.
- Steed, L., Boldy, D., Grenade, L., & Iredell, H. (2007). The demographics of loneliness among older people in Perth, Western Australia. *Australasian Journal on Ageing*, *26*, 81-86.
- Stephens, C., Alpass, F., Towers, A., & Stevenson, B. (2011). The effects of types of social networks, perceived social support, and loneliness on the health of older people: accounting for the social context. *Journal of Aging and Health*, *23*, 887-911.
- Steverink, N., Westerhof, G. J., Bode, C., & Dittmann-Kohli, F. (2001). The personal experience of aging, individual resources, and subjective well-being. *Journal of Gerontology: Psychological Sciences*, *65B*, 364-373.
- Suanet, B., Van Tilburg, T. G., & Broese van Groenou, M. I. (2013). Nonkin in older adults' personal networks: More important among later cohorts? *Journals of Gerontology. Series B: Social Sciences*, *68*, 633-643.
- Takagi, E., & Saito, Y. (2015). Older parents' loneliness and family relationships in Japan. *Ageing International*, *40*, 353-375.
- Takagi, E., & Silverstein, M. (2011). Purchasing piety? Coresidence of married children with their older parents in Japan. *Demography*, *47*, 1559-1579.
- Theeke, L. A. (2009). Predictors of loneliness in US adults over age sixty-five. *Archives of Psychiatric Nursing*, *23*, 387-396.

- Uchino, B. N., Cacioppo, J. T., & Kiecolt-Glaser, J. K. (1996). The relationship between social support and physiological processes: A review with emphasis on underlying mechanisms and implications for health. *Psychological Bulletin*, *119*, 488-531.
- Uysal-Bozkir, Ö., Fokkema, T., MacNeil-Vroomen, J. L., Van Tilburg, T. G., & De Rooij, S. E. (2015). Translation and validation of the De Jong Gierveld loneliness scale among older migrants living in the Netherlands. *Journals of Gerontology: Series B, Psychological Sciences and Social Sciences*. Advanced online publication. doi:10.1093/geronb/gbv044
- Van Baarsen, B., Sijnders, T. A. B., Smit, J. H., & Van Duijn, M. A. J. (2001). Lonely but not alone: Emotional isolation and social isolation as two distinct dimensions of loneliness in older people. *Educational and Psychological Measurement*, *61*, 119–135.
- Van der Pas, S., van Tilburg, T., & Knipscheer, C. P. M. (2007). Changes in contact and support within intergenerational relationships in the Netherlands: A cohort and time-sequential perspective. *Interpersonal Relations Across the Life Course; Advances in Life Course Research*, *12*, 243-274.
- Van Gaalen, R. I., & Dykstra, P. A. (2006). Solidarity and conflict between adult children and parents: A latent class analysis. *Journal of Marriage and Family*, *68*, 947-960.
- Van Kordelaar, K. A. C. M., Stevens, N. L., & Pleiter, A. (2004). *Goed gezelschap in een groot huis: Een programma gericht op bevordering van sociaal contact in een verzorgingshuis [Good company in a big home: A program aimed at encouraging social interaction in a nursing home]*. Nijmegen: Centre for Psychogerontology, Radboud Universiteit Nijmegen.
- Van Tilburg, T. (1990). The size of the supportive network in association with the degree of loneliness. In C. P. M. Knipscheer & T. C. Antonucci (Eds.), *Social network research: Substantive issues and methodological questions* (pp. 137–150). Lisse, the Netherlands: Swets & Zeitlinger.
- Van Tilburg, T., Aartsen, M. J., & Van der Pas, S. (2015). Loneliness after divorce: A cohort comparison among Dutch young-old adults. *European Sociological Review*, *31*, 243-252.
- Van Tilburg, T., & Broese van Groenou, M. (2002). Network and health changes among older Dutch adults. *Journal of Social Issues*, *58*, 697-713.
- Victor, C., Scambler, S., Bond, J., & Bowling, A. (2000). Being alone in later life: Loneliness, social isolation and living alone. *Reviews in Clinical Gerontology*, *10*, 407-417.
- Victor, C., Grenade, L., & Boldy, D. (2005). Measuring loneliness in later life: A comparison of differing measures. *Reviews in Clinical Gerontology*, *15*, 63-70.

Walsh, K., O'Shea, E., & Scharf, T. (2012). *Social exclusion and ageing in diverse rural communities; Findings of a cross-border study in Ireland and Northern Ireland*. Galway (Ireland): NUI Galway, Irish Center for Social Gerontology.

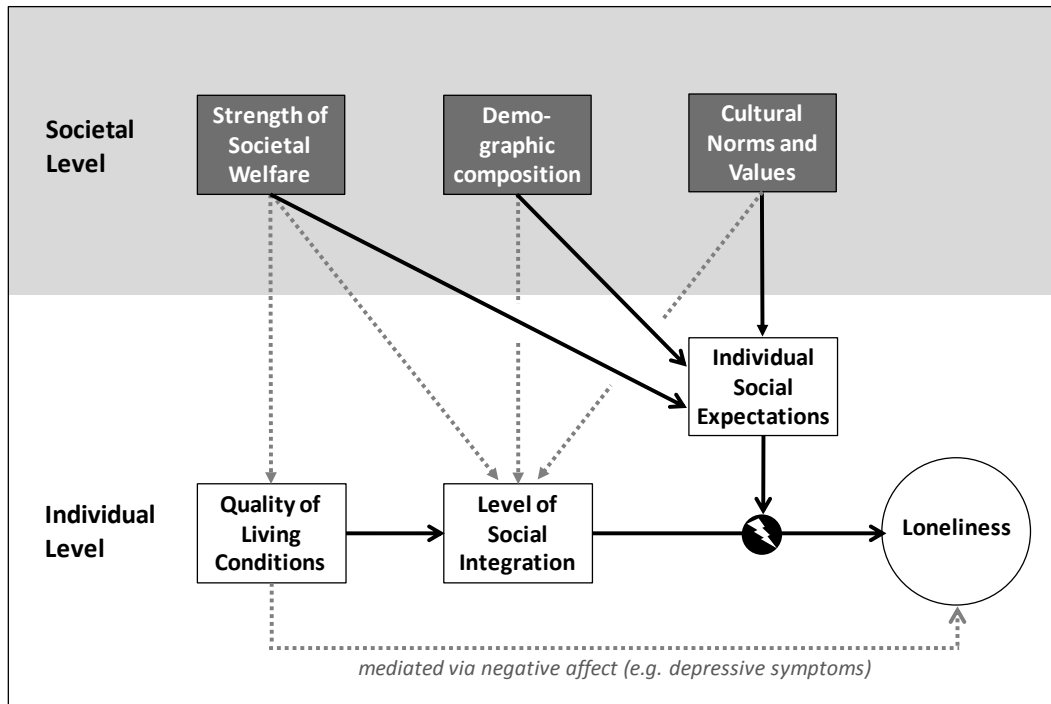
Weiss, R. S. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge, MA: MIT Press.

Weiss, R. S. (1974). The provisions of social relationships. In Z. Rubin (Ed.), *Doing unto others* (pp. 17–26). Englewood Cliffs, NJ: Prentice-Hall.

Wu, Z., & Penning, M. J. (2015). Immigration and loneliness in later life. *Ageing & Society*, 35, 64-95.

Yang, K., & Victor, C. (2011). Age and loneliness in 25 European nations. *Ageing & Society*, 31, 1368-1388.

Figure 1. Individual level and societal level factors in the emergence of loneliness



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