Chapter 1
Design of the study, results, and discussion

Introduction
Up to 40% of the general Western population reports feeling lonely (Dykstra, 2009; Lauder, Sharkey, & Mummery, 2004; Yang & Victor, 2011). Loneliness is an unpleasant feeling (De Jong Gierveld, 1998; Peplau & Perlman, 1982) and is described as painful and as a lack of context and connectedness (Dahlberg, 2007; Hauge & Kirkevold, 2010). Loneliness has negative effects on peoples’ lives. It is related to lower levels of wellbeing (De Jong Gierveld, 1998) and poorer mental and physical health, including higher levels of anxiety (Aanes, Mittelmark, & Hetland, 2010; Mijuskovic, 1986) and depression (Aanes et al., 2010; Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Nolen-Hoeksema & Ahrens, 2002), poorer cognition (Shankar, Hamer, McMunn, & Steptoe, 2013), poorer immune functioning (Kiecolt-Glaser et al., 1984), poorer cardiovascular functioning (Cacioppo et al., 2002), greater risk for Alzheimer’s disease (Wilson et al., 2007), and numerous other ailments (Hawkley & Cacioppo, 2010; Heinrich & Gullone, 2006; Ó Luanaigh & Lawlor, 2008; Routasalo & Pitkala, 2003), and a higher mortality rate (Holwerda & Ó Luanaigh & Lawlor, 2008; Routasalo & Pitkala, 2003), and a higher mortality rate (Hawkley & Cacioppo, 2010; Heinrich & Gullone, 2006; Ó Luanaigh & Lawlor, 2008; Routasalo & Pitkala, 2003), and a higher mortality rate (Hawkley & Cacioppo, 2010; Heinrich & Gullone, 2006; Ó Luanaigh & Lawlor, 2008; Routasalo & Pitkala, 2003) and higher levels of stress, which are also related to poor health (Cacioppo et al., 2000).

Loneliness is not only an individual problem, it is an issue for society as a whole. Since it can be detrimental to health, lonely people are more apt to use health care services than non-lonely people (Cacioppo & Hawkley, 2003; Ellaway, Wood, & MacIntyre, 1999; Geller, Janson, McGovern, & Valdini, 1999). Moreover, they tend to also use health care services for social reasons, consulting their general practitioners without having any health-related problem (Ellaway et al., 1999). In old age, loneliness is associated with early admission to...
longterm care facilities (Prieto-Flores, Forjaz, Fernandez-Mayoralas, Rojo-Perez, & Martinez-Martin, 2011; Tijhuis, De Jong Gierveld, Feskens, & Kromhout, 1999; Tilvis, Pitkälä, Jolkkonen, & Strandberg, 2000). Excessive use of the health care system increases health care expenditures. Loneliness is related to a higher risk of addiction, such as alcohol abuse (Åkerlind & Hörnquist, 1992), drug abuse (Cacioppo et al., 2002), eating disorders (Schumaker et al., 1985), problematic internet use (Whang, Lee, & Chang, 2004), and gambling (McNeilly & Burke, 2002). These addictions can result in less productivity and combating them is expensive. Loneliness is associated with poorer task, team role, and relational performance at the work floor (Ozcelik & Barsade, 2011). Loneliness costs society an immense amount. As it is a problem for society as well as individuals, combating loneliness is an important issue. The overarching research question of this thesis is: How can loneliness be combated?

Erbij, the Dutch coalition against loneliness was founded in 2008. Consisting of several large scale national welfare organisations in the Netherlands, Erbij strives to support people who are lonely or at risk of loneliness and stimulates awareness of loneliness in Dutch society (Coalitie Erbij, 2013). Erbij found funding and initiated research on how loneliness can be combated. Originally, the research was focused on two projects. The aim of the first was to study the effects of a national publicity campaign to influence the image of loneliness in the Netherlands. However, when the campaign was about to be launched the topic of loneliness was widely addressed in the media. So, Erbij decided to cancel the national publicity campaign and changed its policy to assisting organisations in their efforts to combat loneliness. A study of the effects of a national publicity campaign was therefore not implemented.

The research proposal also included a study on the effectiveness of interventions of Erbij member organisations to reduce loneliness. Although not always framed as loneliness interventions, they are often part of the core activities of large national welfare organisations. The effectiveness study of these interventions is the starting point of this thesis. This study is in a research tradition focused on the success (and failure) factors in intervention practices (Andersson, 1998; Cattan, White, Bond, & Learmouth, 2005; Dickens, Richards, Greaves, & Campbell, 2011; Findlay, 2003; Fokkema & Van Tilburg, 2007; Masi, Chen, Hawkley, & Cacioppo, 2011; Stevens & Van Tilburg, 2000). This type of research might contribute to improvement of loneliness interventions. The research goal regarding this
research tradition is to examine the extent to which interventions help alleviating loneliness among their participants. This research goal is addressed in Chapter 2 of this thesis.

Organisations are not the only actors that can contribute to alleviation of loneliness; lonely individuals do as well and are actually the main actors involved. Previous studies cite numerous efforts by lonely people to combat loneliness, varying from seeking social interaction to seeking distraction, e.g., by reading, and from reflection and acceptance to self-development (Hauge & Kirkevold, 2010; Pettigrew & Roberts, 2008; Rokach & Brock, 1998). In this thesis, I present two studies in the tradition of a focus on individual efforts to combat loneliness. The research goal regarding these studies is to examine the extent to which older adults know how to cope with loneliness. This research goal is addressed in Chapters 3 and 4. Coping theory (Lazarus & Folkman, 1984) and the cognitive theoretical approach to loneliness (Peplau & Perlman, 1982) are used as theoretical frameworks.

In line with the research tradition on individual efforts to cope with loneliness, I also examine awareness, an important aspect which is under represented in studies on combating loneliness. If people are to cope with loneliness, they need to be aware of it. Likewise, if people are to take preventive action, they need to be aware of the problems that may lie ahead of them. In this thesis, I study older adults’ awareness of risk factors for loneliness and their perceived prospects of being lonely. The research goal, addressed in Chapter 5, is to examine the extent to which older adults are aware of risk factors for loneliness.

Theoretical framework and research goals

Loneliness

Loneliness is defined as a state experienced by an individual as one where there is an unpleasant or inadmissible lack of (the quality of) certain social relationships (De Jong Gierveld, 1987). There are three core elements to this definition. First, loneliness is a subjective experience. It refers to a feeling rather than an objective number of social relationships. Second, loneliness is a negative experience, i.e., it is unpleasant and distressing. Third, loneliness results from an evaluation of the deficiencies in one’s social network. People are lonely if there is a discrepancy between the relationships they have and the relationships they desire. People have different standards for the quantity and quality of
their social network. This means that people can be alone without being lonely or experience loneliness in a crowd.

There is some disagreement about whether loneliness is a uni-dimensional concept or one with distinct dimensions. This is reflected in the instruments used to measure loneliness. Loneliness is measured as a uni-dimensional concept by the UCLA Loneliness Scale (Russell, 1996; Russell, Peplau, & Ferguson, 1978) and by direct inquiry regarding loneliness. Other instruments distinguish two dimensions, i.e., emotional and social loneliness (Weiss, 1973). Emotional loneliness originates from missing an intimate figure or a close emotional attachment such as a partner or a best friend. Social loneliness originates from missing a broader group of contacts or an engaging social network. The 11-item Loneliness Scale that was developed by De Jong Gierveld and colleagues (De Jong Gierveld & Kamphuis, 1985; De Jong Gierveld & Van Tilburg, 1999) was originally designed as a uni-dimensional instrument to measure the severity of feelings of loneliness. However, later studies demonstrated that the scale can also be used to measure emotional and social loneliness as two distinct dimensions (De Jong Gierveld & Van Tilburg, 2010; Van Baarsen, Snijders, Smit, & Van Duijn, 2001). In other words, the scale can reveal the general concept of loneliness or the social and emotional dimension of loneliness. In this thesis, when loneliness is measured, I am either interested in the presence of feelings of loneliness or the severity of these feelings, so I do not use the distinct subscales for emotional and social loneliness.

There are many potential causes of loneliness. It can originate from a lack of personal resources, e.g., a limited education (Pinquart & Sörensen, 2001; Savikko, Routasalo, Tilvis, Strandberg, & Pitkälä, 2005), a low income (Fokkema, De Jong Gierveld, & Dykstra, 2012; Hawkley et al., 2008), low self-esteem (Guiaux, 2010; Peplau, Miceli, & Morasch, 1982), or poor social skills (Wittenberg & Reis, 1986). In some cases, the reversed causal direction is also possible. Low self-esteem, for example, can result in loneliness, as individuals with low self-esteem are less likely to develop contact with others. Low self-esteem can also result from loneliness, as lonely people may doubt their ability to maintain a social network. For other causes, there is a unidirectional relationship between loneliness and lack of personal resources. For example, people with a lower educational level are more likely to be lonely, but loneliness in old age does not affect the educational level obtained in adolescence or young adulthood. Loneliness can also originate from transitions in life, such as migration.
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(Routasalo & Pitkala, 2003), unemployment (Lauder et al., 2004), institutionalization (Prieto-Flores et al., 2011; Routasalo & Pitkala, 2003), the loss of loved ones, such as the partner due to divorce (Dykstra & Fokkema, 2007) or death (Dykstra & De Jong Gierveld, 2004; Jylhä, 2004; Routasalo & Pitkala, 2003; Victor et al., 2005), and diminishing health (Jylhä, 2004; Routasalo & Pitkala, 2003; Victor et al., 2005). These transitions may decrease the number of meaningful personal relationships, reduce their variety, or limit the opportunities to maintain relationships, thus increasing the likelihood of loneliness. In addition to individual factors, societal ones such as discrimination (Nachega et al., 2012), stigmatization (Kuyper & Fokkema, 2010) and poor quality of a neighbourhood (Scharf & De Jong Gierveld, 2008) can also generate loneliness.

Loneliness is often perceived as a problem among older adults in particular (Abramson & Silverstein, 2006; Dykstra, 2009; Sadler, 1978; Thomése & Bergsma, 2008; Tornstam, 2007; Walker, 1993; Whitbourne & Sneed, 2002). Older adults agree with this image and perceive loneliness as a serious problem for their age group (Abramson & Silverstein, 2006; Tornstam, 2007). The results of previous studies partially disprove this notion. The percentage of adults above the age of 60 who feel lonely is similar to that of the general population (Andersson, 1998; Perlman, 1991; Routasalo & Pitkala, 2003; Schnittker, 2007). However, the likelihood of loneliness increases after the age of 75 (Dykstra, Van Tilburg, & De Jong Gierveld, 2005), due to negative life events, in particular the loss of loved ones, most notably the partner, and a greater likelihood of experiencing poor health (Dykstra, 2009; Jylhä, 2004). The partner is often the primary source of support and fulfils most of the needs for intimacy and attachment, especially if the quality of the relationship is good (De Jong Gierveld, Broese van Groenou, Hoogendoorn, & Smit, 2009; Pinquart, 2003). The loss of the partner means losing this primary source of support and causes loneliness. The loss of the partner may also cause uncertainty and reduce self-esteem, which in turn can increase in loneliness (Van Baarsen, 2002). There are two reasons why poor health is related to a higher likelihood of loneliness. Poor health increases dependency on the help of others, which is associated in turn with loneliness (Routasalo & Pitkala, 2003). Their health determines the extent to which people can go out and take part in social activities, meet others and reciprocate in relationships (Van Tilburg & Broese van Groenou, 2002). With fewer social activity options, individuals in poor health are more likely to be lonely (De Jong Gierveld, 1998; Savikko et al., 2005).
Chapter 1

**Interventions to combat loneliness**

The first research question of this thesis addresses the effectiveness of interventions to alleviate loneliness (for reviews see: Andersson, 1998; Cattan et al., 2005; Dickens et al., 2011; Findlay, 2003; Fokkema & Van Tilburg, 2007; Masi et al., 2011). Studies within this tradition typically focus on the overall outcome of interventions, in other words, whether the average loneliness of the participants is lower after the intervention period than before the intervention period. Based on this criterion, interventions are classified as effective or ineffective. There are far more interventions that aim to alleviate loneliness than are evaluated in studies. The studied interventions are thus a selection. As studies with significant beneficial results tend to get published more easily, the selection is most likely a positive one.

It may be premature to dismiss all the interventions with no average reduction of loneliness as ineffective. An intervention’s effectiveness is not only determined by aspects of the intervention, like the type of intervention, the quality of the professionals and volunteers conducting it, and the duration and intensity of the intervention, but also by the degree to which it addresses the loneliness problems of the participants it attracts. Loneliness is a complex issue with varying degrees of severity, causes, and forms. It seems likely that a specific kind of loneliness problem can only be alleviated by an intervention dealing with that specific problem. An improper fit between the intervention and the loneliness problem of participants is more probable in the event of a *generic intervention*. Generic interventions attract a wide range of people with multifarious characteristics. At best, the target group is defined in terms of broad social categories such as older adults, ethnic minorities, or widows and widowers. The aim of these interventions is to reach as many people as possible in these categories and to help them to solve various problems, one of which is loneliness. Non-lonely as well as lonely people can take part. In contrast, the sole aim for *specific interventions* is to alleviate the participants’ loneliness. Lonely people with specific characteristics are addressed, so their loneliness is likely to be of the same type, i.e., emotional or social. Generic interventions can be erroneously dismissed as ineffective if there is not a good fit between the type of loneliness the intervention addresses and the type that participants’ experience. If participants with a type of loneliness that does not match the goal and methods of the intervention are overrepresented in a study, or if participants experience problems other than loneliness, the beneficial effect on participants...
for whom there is a match may be obscured. By only focusing on the average outcome of interventions, effects on certain subgroups of lonely people are easily overlooked.

In Chapter 2, I examine the extent to which three generic interventions, i.e., a home visiting activity, a holiday activity and a shopping service, help to alleviate loneliness among their participants. I study the average effectiveness of these interventions. Differentiating between lonely people and non-lonely people at entry of the intervention seems an obvious step in assessing the effectiveness of a loneliness intervention. The research question studied in this chapter is: To what extent does the participants’ level of loneliness at the start of the intervention determine the effectiveness of three generic interventions against loneliness?

Individual efforts to combat loneliness

A second tradition that studies combating loneliness originates from theoretical perspectives on coping efforts by individuals. In this thesis, I distinguish two theoretical perspectives, coping theory and the cognitive theoretical approach to loneliness. According to coping theory (Lazarus & Folkman, 1984), coping is defined as an individual’s constantly changing cognitive and behavioural efforts to manage specific external and internal demands that are appraised as taxing or exceeding the person’s resources. Key elements in this definition are that coping is process orientated, meaning that coping efforts can change over time, and that coping is contextual, meaning that coping preferences differ in various contexts. All the individual’s efforts are perceived as coping, not just the successful or beneficial ones (Folkman & Lazarus, 1980). This means that coping does not always structurally improve the situation at hand. It may also bring temporary relief or have no effect at all. Two higher-order ways of coping are commonly distinguished, problem-focused and emotion-focused coping (Baker & Berenbaum, 2007; Carver, Scheier, & Weintraub, 1989; Dysvik, Natvig, Eikeland, & Lindstrøm, 2005; Lazarus & Folkman, 1984; Parker & Endler, 1992; Pearlin & Schooler, 1978). Problem-focused coping, or active coping, includes all active efforts to manage stressful situations and alter the troubled person-environment relationship in order to modify or eliminate the sources of stress through one’s own behaviour. Emotion-focused coping, or regulative coping, includes all the regulative efforts to diminish the emotional consequences of stressful events. It can be argued that actively coping with the stressor at hand is more effective than regulating one’s emotions, since active coping is employed to
remove the stressor (Carstensen, Fung, & Charles, 2003). Regulative coping involves changing one’s attitudes towards the problem, leaving the stressor in place, and does not contribute to increased satisfaction with one's social life (Rook & Peplau, 1982). More recently, Folkman (2007) introduced a third higher-order way of coping, i.e., *meaning-focused coping*, which is appraisal-based coping with the person drawing on his or her beliefs, values and existential goals to motivate and sustain coping. This way of coping typically occurs if coping was unsuccessful and is used to restart the coping process.

The cognitive theoretical approach to loneliness (Peplau & Perlman, 1982) specifies three ways of coping with loneliness. According to this approach, people are lonely if there is a discrepancy between the relationships that they have and the ones that they want. This discrepancy can be eliminated by improving the quantity or quality of one’s relationships, by lowering the expectations one has about his or her relationships, and by reducing the perceived importance of the social deficiency (Heylen, 2010; Rook & Peplau, 1982). Improving relationships is an active way of coping and can be put into effect, for example, by making new friends, re-establishing contact with old friends, or seeking a partner to share one’s life with. Lowering expectations is a regulative way of coping and can be put into effect, for example, by no longer expecting one’s children to visit as often or comparing oneself with someone who is worse off. Reducing the perceived importance of the social deficiency can be done by ignoring the problem or by seeking distraction in other activities.

In this thesis, I focus on the first two ways of coping, improving relationships and lowering expectations, and do not address the third way of coping, reducing the perceived importance of the social deficiency. The third way of coping differs from the other two in that it brings about temporary, rather than a lasting relief. By not thinking about the loneliness, or by being distracted from it by other activities, one can reduce the influence of loneliness for a certain period of time. Distraction can be found in solitary activities, such as gardening, reading, or domestic chores (Hauge & Kirkevold, 2010; Pettigrew & Roberts, 2008) and in social activities, such as attending meetings of a special interest club. If the distraction is a social activity, it may compel one to interact with others. A fortuitous effect of these interactions may be a structural alleviation of the loneliness, but this is not the initial goal of these coping activities. Maladaptive coping behaviours, such as working too much or drinking too much alcohol (Peplau & Perlman, 1982), are also distractions, which can be employed to reduce the perceived importance of the social deficit.
In Chapter 3, I focus on the perspectives older adults see for coping with loneliness in later life. Previous studies on coping with loneliness derived their coping types from the respondents’ answers to questions about coping with loneliness. Rokach and Brock (1998), for instance, distinguished six coping types, i.e., acceptance, self-development, increased social involvement, unhealthy behaviour, finding comfort in religion, and solitary activities that people mention to have used for coping with their loneliness. Pettigrew and Roberts (2008) distinguished two coping types, i.e., social behaviour focused on social interaction with relatives, friends, or acquaintances, and non-social behaviour focused on solitary activities such as reading and gardening. In the study reported in Chapter 3, ways of coping are derived from the cognitive theoretical approach to loneliness. The study contributes to our knowledge on coping in three ways. First, by focussing on suggested ways of coping by all older adults, lonely and non-lonely alike, insight into older adults’ expectations about recovering from loneliness and how they expect to do so is gained. Knowledge on coping with loneliness is important to everyone, as loneliness may befall anyone at some point in the life cycle. Second, I examine how older adults propose to cope with loneliness in different situations, i.e., at different ages, with a different marital status, and with a different health status. Third, I examine whether older adults with different levels of personal resource, e.g., educational levels, have different perceptions about coping with loneliness. By distinguishing various situations and levels of personal resources, insight into the variability within suggested ways of coping is provided. The research question answered in Chapter 3 is: To what extent do older adults suggest improving relationships and lowering expectations to their lonely peers in different situations?

In Chapter 4, I study the process of coping with loneliness by examining the extent to which coping efforts are considered to be effective in alleviating loneliness by older adults and the extent to which past experience with loneliness influences the coping efforts that older adults take under consideration. Previous studies on coping with loneliness specify which coping efforts were chosen by lonely and formerly lonely individuals (Pettigrew & Roberts, 2008; Rokach & Brock, 1998), but not the extent to which these efforts contributed to alleviate loneliness. Knowledge on the effectiveness of coping provides insight in lonely older adults’ ability to combat loneliness. Knowledge on how their past experience with loneliness influences the coping efforts older adults take under consideration offers information on the likelihood that older adults with various loneliness histories will choose
to either improve their relationships or lower their expectations as a way of coping. In addition, I study how age, partner status and health status influence the links between past experience with loneliness and the coping efforts under consideration and between the coping efforts under consideration and loneliness. This provides insight into whether older adults with favourable personal resources are more able to benefit from ways of coping under consideration and whether they consider the two ways of coping to a different extent than older adults with less favourable personal resources. The research question answered in Chapter 4 is: To what extent do ways of coping under consideration influence older adults’ loneliness and to what extent does their past experience with loneliness influence ways of coping under consideration?

In Chapter 5, I study the extent to which older adults are aware of two risk factors for loneliness common in old age, i.e., poor health and widowhood. Awareness of risk factors is a prerequisite for preventive action (Weinstein, Sandman, & Blalock, 2002). Older adults who are unaware of the risk factors for loneliness will not be inclined to take action to prevent loneliness. One potentially successful way to avoid loneliness involves investing in one’s social network. Establishing a satisfying set of relationships requires time and effort (Perese & Wolf, 2005), so preventive action should preferably be taken before people are confronted with risk factors for loneliness and before they become lonely. The research question answered in Chapter 5 is: To what extent are older adults aware that poor health and widowhood are risk factors for loneliness?

Summary of the results
The four studies are presented in the following chapters, each addressing a specific research question to help answer my main one, How can loneliness be combated? In this section, I will summarize the most important findings and in section 1.4, I discuss the findings in a broader context and examine the strengths and limitations of this thesis.

Generic interventions against loneliness: Scope and effectiveness for lonely and non-lonely people
In the study presented in Chapter 2, I examined the extent to which three generic interventions, i.e., a home visiting activity, a holiday activity and a shopping service, succeeded in reducing loneliness among their participants and the extent to which
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participants’ loneliness at the start of the intervention determined this effectiveness. Respondents’ loneliness was assessed at baseline, a second, and a third observation.

Although the three generic interventions do not select participants based on their loneliness, they managed to reach a relatively large number of mildly and severely lonely people at baseline (44% of the participants was mildly lonely, respectively 15% severely lonely). None of the interventions exhibited an average reduction in loneliness between baseline and the third observation. However, trajectories of loneliness intensity differed according to the level of loneliness at baseline. On average, respondents with a high level of loneliness at baseline experienced a decrease in loneliness during the intervention period; respondents with a low level of loneliness at baseline experienced a slight increase in loneliness.

The results show that interventions without an average effect can effectively alleviate loneliness among participants with certain characteristics, in this case severe loneliness. This illustrates that by focusing solely on average outcomes can easily lead to overlooking the effects on subgroups of participants. In this study, including non-lonely individuals in the evaluation negatively influenced the interventions’ average effectiveness in reducing loneliness. If the organisers of these three generic interventions want to focus on alleviating loneliness, they might consider solely selecting severely lonely participants, thus investing energy in the individuals who can benefit most from the intervention. If selection is not an option, the organisers are advised to offer non-lonely participants a specific program that addresses their specific circumstances and needs and takes into account the possibility that non-lonely individuals might become lonely.

Coping with loneliness: What do older adults suggest?
The study reported in Chapter 3 focused on the extent to which older adults suggest two ways of coping, i.e., improving relationships and lowering expectations, for their lonely peers of different ages, partner status, health status, and perceived extent of loneliness. The extent to which personal resources influenced suggested ways of coping was also studied. For this purpose, older respondents were introduced to peers described in vignettes, asked to estimate their loneliness, and asked what these peers should do, assuming they were lonely to alleviate their loneliness.
Both ways of coping were often suggested by the respondents to their lonely peers. The ways of coping were interrelated, meaning that if one way of coping was suggested more often, the other one was as well. Regression analyses showed that improving relationships was suggested less often to older adults who were older, in poor health, or considered lonelier and more often to those who were widowed. Respondents with favourable resources, i.e., who were employed in midlife and had high self-esteem, suggested improving relationships more often. Regulative coping was suggested more often to older adults who were older and by respondents with less favourable personal resources, i.e., a lower educational level and less mastery.

The results show that older adults consider a combination of both ways of coping to be the best way to cope with loneliness and see many options for alleviating loneliness. However, actively coping by improving relationships, which can be considered as the most preferable way of coping, is less often seen as an option for peers exposed to risk factors for loneliness and by older adults with less favourable personal resources, i.e., for and by people who are more prone to loneliness. This underlines the difficulty of combating loneliness.

Coping efforts under consideration and loneliness: How are they related?
The study reported in Chapter 4 focuses on how ways of coping taken under consideration, i.e., improving relationships and lowering expectations, were related to changes in loneliness and on how past experiences with loneliness were related to the extent to which coping efforts were considered by older adults. The extent to which age, partner status, and health status influenced these relationships was also examined. Four loneliness types representing past experience with loneliness were constructed based on two past observations of loneliness: not lonely at both observations, recently lonely, persistently lonely, and recovered from loneliness.

Considering ways of coping did not contribute to alleviating loneliness, i.e., considering efforts to improve relationships had no effect on the likelihood of experiencing loneliness, while considering efforts to lower expectations even increased this likelihood. Compared to respondents who were not lonely, the recently lonely considered both ways of coping equally often, the persistently lonely considered improving relationships less often and lowering expectations more often, and the recovered respondents considered improving relationships equally often and lowering expectations more often. Few
differences in the relationships between past experience with loneliness and ways of coping under consideration and between ways of coping under consideration and loneliness were found between respondents of different age, partner status, or health status.

The results of this study suggest that effectively coping with loneliness in old age is difficult. Older adults recognize improving relationships and lowering expectations as different ways of coping with loneliness, but taking them into consideration did not reduce likelihood of loneliness. Older adults with past experience with loneliness are less optimistic about their coping options. Persistently lonely and recovered older adults are at risk of a circular process where experience with loneliness leads them to consider lowering expectations more often, which results in a greater likelihood of loneliness, thus sustaining or re-establishing loneliness.

Awareness of risk factors for loneliness among third agers
In Chapter 5, the extent to which older adults consider poor health and widowhood to be risk factors for loneliness was examined. Differences are examined between older adults in the third and fourth age. The third age is the period in old age after retirement, before people's social relationships deteriorate. This deterioration is often caused by personal losses and declining health, which mark the starting of the fourth age. In this study, fourth agers are defined to be in poor health, widowed, or both and third agers to be not in poor health or widowed. Differences in awareness between lonely and non-lonely older adults are also examined. Respondents were introduced to vignette persons of different ages, marital status, and health status and were asked whether or not they expected them to be lonely.

In general, respondents perceived vignette persons in poor health, widowhood, or both to be lonely more often than vignette persons in good health and married. Respondents who were in good health and married perceived vignette persons in poor health or widowhood to be lonely more often than respondents who were in poor health or widowhood themselves. Vignette persons who were in poor health and widowed were perceived equally lonely by all groups. Non-lonely respondents perceived vignette persons in poor health or widowhood to be lonely less often than lonely respondents did. In addition to poor health and widowhood, respondents considered old age to be a risk factor for loneliness.
The results of this study show that older adults, in particular those who are not in poor health or widowhood themselves, are aware that poor health and widowhood are risk factors for loneliness. This awareness indicates that older adults may be open to preventive action. In contrast, non-lonely older adults perceive vignette persons in poor health or widowhood to be lonely less often than lonely older adults. This more limited awareness may obstruct preventive action.

General discussion
In this thesis, I set out to answer the question: How can loneliness be combated? In order to answer this question, four empirical studies were conducted, each with distinct research questions. In this section, I discuss the findings and situate them along the lines of the model for coping with loneliness proposed by Linnemann (1996). Although the studies were not initially designed to be evaluated this way, in retrospect, this model offers a good framework for discussing what was learned. In his model, Linnemann combines the four stages of the process of coping with loneliness proposed by Van Tilburg (1982). The four stages are: becoming aware of one’s own loneliness, developing a coping plan, putting the plan into practice, and evaluating the plan. There are three conditions that need to be met at each stage: people have to want to go through the stage, know how to go through the stage, and be able to go through the stage. However, Linnemann did not elaborate on how each condition relates to each stage of the coping process. For instance, one can imagine lonely people wanting to become aware of in what ways their loneliness is a problem, but knowing how to do so or being able to do so is less comprehensible.

In order to make the model more comprehensible, I have converted Linnemann’s model into a more comprehensive one (Figure 1.1). Awareness of one’s own loneliness is the first stage. During this stage an individual becomes aware of the existence of loneliness and defines what the problem exactly is, in other words the causes and consequences of the loneliness are considered. The second stage is wanting to cope with loneliness, in which lonely people consider whether they are willing to make the necessary effort to cope with their loneliness. The third stage is knowing how to combat loneliness. During this stage, people make a coping plan. They consider whether there are efforts they believe can be beneficial in their situation and if so, which ones they are going to put into practice. The fourth stage is being able to cope with loneliness. Depending on the coping efforts that are
taken under consideration, certain skills and abilities may be necessary, such as high self-esteem, adequate social skills, or easy mobility. The fifth stage is the actual coping behaviour. During this stage, the coping plan is put into practice. The sixth and final stage of the model entails the evaluation of the coping process. People evaluate the success of their coping, was their coping plan carried out as intended? They also evaluate the extent to which the coping was effective, was their loneliness alleviated as a result of their efforts? If not, they can restart the coping process at the first stage by redefining exactly what their problem is.

1. Aware of loneliness
2. Want to cope with loneliness
3. Know how to cope with loneliness
4. Able to cope with loneliness
5. Coping behaviour
6. Evaluation of the process

Figure 1.1 The process of coping with loneliness, based on Linnemann’s (1996) model.

Discussion of the results

In Chapter 2, I evaluated the effectiveness of three interventions that want to contribute to alleviating loneliness. Intervention studies typically focus on an average outcome, i.e., whether the participants’ average loneliness is reduced between the start and completion of the intervention. By this criterion, many interventions, including the ones studied in Chapter 2, are evaluated as ineffective. Before dismissing interventions without a good average
outcome as ineffective, it is useful to take a closer look. Interventions might be effective for certain groups of participants, and not for others. I studied whether participants’ loneliness at the start of an intervention influenced its effectiveness. I found that the higher the baseline score on loneliness, the greater the reduction in loneliness over the course of the observation period. If more severely lonely individuals had participated in this study, the interventions would have been more likely to affect the average trend. This means that an intervention’s effectiveness not only depends on its own characteristics but also on those of the participants.

Loneliness is a complex phenomenon with not only different severities, but also two dimensions, social and emotional loneliness. These two types of loneliness require different solutions and thus different interventions. For instance, loneliness may be caused by moving away from a familiar neighbourhood. In this situation, a larger structure of social embedding is lost. An intervention to reduce this sort of loneliness should provide such a larger social structure rather than, for instance, a buddy who is available at specific moments. The three generic interventions studied in this thesis offer the same intervention to all their participants. They are effective in alleviating the loneliness of severely lonely participants. This might be due to differences between the social networks of severely lonely people and others. Severely lonely people are likely to have considerable deficits in their social networks. They are emotionally and socially lonely, meaning that they lack an intimate relationship as well as a broader group of contacts. During the intervention, they receive attention from professionals, volunteers, or fellow participants, which they do not receive otherwise. To some extent, this increase in attention may be enough to reduce their loneliness. In contrast, less lonely participants, and in particular non-lonely participants, are likely to have a social network that functions reasonably and gives them some of the attention they need. To reduce the loneliness of these participants, offering attention is not a fitting strategy. Based on the findings of this study, there are two options for improving the effectiveness of the interventions. A first option is that intervention organisers can explicitly focus their efforts on severely lonely participants. Others can participate, but a different intervention should be developed to address their specific needs. However, organisations should carefully examine the extent to which they are equipped to reduce the loneliness of this severely lonely group and whether they are able to help this group maintain the reduction. A second option is that organisers of these interventions can develop
interventions to address a variety of relationship needs, and organise activities specifically for each of these needs. By doing so, organisers can focus on a variety of participants, all of whom may benefit from a selection of activities, resulting in a reduction of loneliness.

The model for the process of coping with loneliness presented in Figure 1.1 was originally designed to provide insight into how individuals cope with loneliness, but can also be used to evaluate interventions for alleviating loneliness. Interventions typically focus on the fifth stage of the coping process, the coping behaviour. Organisers offer participants an intervention and assume it will be effective in alleviating loneliness. However, in order to alleviate their loneliness, lonely individuals should follow all the stages of the model. Intervention organisers could arrange their interventions in such a way that they help lonely people get through all the stages of the coping process. The first stage of the coping process is becoming aware of loneliness. This can mean becoming aware that loneliness exists. Organisations can help, for instance by using mass media to address the issue of loneliness throughout a community, as in the intervention evaluated by Honigh-de Vlaming (2013).

Awareness can also mean defining exactly what the problem is. Intervention organisers can help participants, for instance, by discussing the causes of their loneliness. For example, the emphasis in explanations of loneliness among widows and widowers concerns the loss of their partner; support, comforting, and company can help alleviate their loneliness. But this might be a misunderstanding, as the loneliness can also be due to the lack of a confidant, and consequently the focus should be on emotional and not on social loneliness. The second stage of the coping process is wanting to cope with loneliness. Coping with loneliness may seem difficult, which is why people may need to be motivated to do so. Knowing how to cope with loneliness is the third stage of the coping process. Not everyone knows what coping options they have. Intervention organisers can help participants make a coping plan by showing them various options for coping with loneliness. The fourth stage of the coping process is being able to cope with loneliness. Some coping efforts require certain skills and abilities. Intervention organisers can teach lonely participants the skills and abilities they need to carry out their coping plan. The fifth stage, the coping behaviour, refers to the activity to alleviate the loneliness. In the sixth stage, lonely people evaluate whether the coping was successful and effective. If not, the coping process can be restarted. To improve the practice of combating loneliness using interventions, intervention organisers should devote attention to all the stages lonely people have to go through in their efforts to cope.
with loneliness. Researchers should attempt to measure the effectiveness of each separate stage of the coping process, rather than only evaluating the final effectiveness. Instruments to measure the effectiveness of each stage should be developed. In this light, the Loneliness Literacy Scale developed by Honigh-de Vlaming (2013) may be a promising start. Among other aspects, it measures the extent to which people are willing to try to cope with loneliness should this befall them and aspects of their coping abilities.

Interventions organisers typically focus on the fifth stage of the coping process, the coping behaviour. Most studies designed to evaluate the effectiveness of interventions only focus on the final outcome of the intervention, i.e., whether the loneliness has been reduced during the intervention period. This is true of my study as well. What happens between the intake and the completion of the intervention programme remains a mystery. The studies do not show what the active elements of the intervention are and whom they effective for. Active intervention elements are the distinct actions in the intervention that help solve the problem at hand. Most interventions have several active elements. The active elements of the home visiting activity can be talking about loneliness, talking about hobbies, helping with instrumental tasks, or going outdoors to do something. The active elements of the holiday activity can be interacting with other participants, being in the company of volunteers, or resting and contemplating one’s own loneliness. The active elements of the shopping service can be the actual shopping, resulting in increased independence, the contact with other participants, or being in a social circle. A combination of these and other, not mentioned, active elements or one particular active element can determine the effectiveness of each intervention. Furthermore, active elements can also be effective in reducing loneliness among lonely individuals with certain characteristics and not for others. If similar active elements are part of various interventions, but are only effective under certain circumstances, and if the participants’ characteristics vary over the interventions, the outcomes of various interventions can differ even though the active elements were effective. Such a general assessment does not suffice. Further development of combating loneliness using interventions requires more knowledge on the specificity of the active elements. This kind of approach is more demand-driven (starting from the participants’ needs) than supply-driven (starting from the institutional embedding) and requires knowing more about the individuals’ preferred ways of coping with loneliness.
In Chapters 3 and 4 of this thesis, I studied the solutions individuals see for combating loneliness and the extent to which they are influenced by personal resources. Both chapters address two stages of the process of coping with loneliness, knowing how to cope with loneliness and being able to. In Chapter 3, I addressed the coping efforts older adults considered for their lonely peers in various situations. In general, older adults see many potential options for coping with loneliness, by improving relationships as well as by lowering expectations, suggesting that they know how loneliness can be coped with. However, fewer efforts to improve relationships are suggested for lonely older adults who are older, in poor health, and perceived to be lonelier. Older adults with less favourable personal resources suggested improving relationships less often and lowering expectations more often to their lonely peers, than older adults who have favourable personal resources. In other words, both active and regulative coping are considered to be an option for and by older adults who are least prone to loneliness to a high extent. Active coping is considered to be less of an option and lowering expectations to be more of an option for and by older adults who are most prone to loneliness. Presumably, active ways of coping are more effective than regulative ones, as they are used to remove the stressor (Carstensen, Fung, & Charles, 2003) and regulative coping pertains to changing one’s attitude towards the problem, leaving the stressor in place, and does not contribute to increased satisfaction with one's social life (Rook & Peplau, 1982). The applied technique of questions on vignettes assumes these assessments also pertain to the respondents themselves, so the ways of coping suggested for others reflect the ones they would consider for themselves. If people perceive to have the most coping opportunities, especially active ones, when their situation has the least number of risk factors, there is no reason to expect that the majority of lonely older adults will easily consider coping options or consider themselves able to cope with loneliness. This fuels the idea that coping with loneliness is difficult for lonely older adults and suggests that a continuation of the loneliness is likely.

The tentative conclusions from Chapter 3 that lonely older adults would not easily consider coping efforts and that their loneliness is likely to continue were confirmed by the results of Chapter 4. In this chapter, I studied whether past experience with loneliness influenced the extent to which the two ways of coping were taken into consideration by older adults. The reversed causal direction was also studied, i.e., whether the coping efforts under consideration contributed to alleviating loneliness. Loneliness was measured at three
observations (T0, T1 and T2). Recently lonely (not lonely at T0 and lonely at T1), persistently lonely (lonely at T0 and T1), and recovered older adults (lonely at T0 and not lonely at T1) were at a higher risk of experiencing loneliness at T2 than older adults who were not lonely at T0 and T1. This confirms the notion that there is a risk for continuation of loneliness; moreover, there is even a risk of reoccurrence of loneliness. As regards the coping efforts lonely older adults considered, improving relationships was considered equally or less frequently by older adults with past experiences with loneliness than older adults who were not lonely at past observations. Lowering expectations was considered equally or more frequently by older adults who have past experiences with loneliness than by older adults who were not lonely at past observations. Contrary to what was expected, taking more efforts to improve relationships under consideration did not affect the likelihood for loneliness. Taking more efforts to lower expectations under consideration even increased this likelihood, meaning that considering more efforts to lower expectations can result in a circular process. In this process loneliness results in more frequently considering lowering expectations and further obstructs activities to improve relationships, resulting in a greater likelihood of loneliness. A situation of loneliness thus contributes to sustaining or re-establishing loneliness. From the results of this chapter, I conclude that most lonely older adults did not succeed in effectively coping with their loneliness during the research period.

Four possible implications can be derived from the conclusions in Chapters 3 and 4. In the first place, older adults are unable to effectively cope with loneliness. However, there is no reason to assume their loneliness cannot be alleviated. Previous studies recorded decreases in loneliness among groups of older adults (Aartsen & Jylhä, 2011; Fokkema & Knipscheer, 2007; Stevens, 2001). Increasing the number of relationships in old age has also been recorded. Broese van Groenou, Hoogendijk, and Van Tilburg (2013) found that even though the total number of social network members declines in old age, older adults launch new or renewed social relationships up to a very old age. So it is never too late for older adults to invest in their social network and reducing loneliness remains an option. In the second place, not all lonely older adults feel a need to overcome their loneliness, in fact, they may not want to find a way to cope with loneliness. Loneliness is a negative experience for these older adults, but not problematic to the extent that improvement of the situation is required. These older adults may know how to combat their loneliness, but are not willing to invest the time and energy to do so. If the problem was more severe or less bearable,
they would take action to combat loneliness. Another possibility is that lonely older adults may use the third way of coping with loneliness that can be derived from the cognitive theoretical approach to loneliness (Peplau & Perlman, 1982), i.e., reducing the perceived importance of the deficit. This way of coping distracts lonely people from their loneliness and focuses their attention on more satisfying parts of their lives. This distraction can give meaning to peoples’ lives and lead in turn to a decrease in their loneliness. The distraction may also provide no more than temporary relief, without any real change in their situation.

As no decrease in loneliness was observed among the respondents in Chapter 4, this suggests that if older adults used reducing the perceived importance of the deficit in an effort to cope with loneliness, this was not an effective way of coping. A final implication of lonely older adults’ inability to recover from loneliness on their own might be that they need help from others, i.e., older adults are unable to cope with loneliness by themselves. Previous studies found several interventions that managed to reduce loneliness of their participants (for reviews see: Andersson, 1998; Cattan et al., 2005; Dickens et al., 2011; Findlay, 2003; Fokkema & Van Tilburg, 2007; Masi et al., 2011). Others, such as relatives, friends, or neighbours, may be able to offer assistance as well.

The results of the studies presented in Chapters 3 and 4 lead to clues as to how to combat loneliness more effectively among older adults. First, lonely older adults may need help in converting the coping efforts they are considering into actual coping behaviour. Although lonely and non-lonely older adults have a somewhat different conception on how loneliness can be coped with, they all consider a wide range of coping efforts. This suggests that lonely older adults know how to cope with loneliness, which is the third stage in the process of coping with loneliness. As lonely older adults consider many coping efforts, one would expect the efforts to be effective in combating loneliness. However, I found no evidence for that. One explanation might be that lonely older adults do not manage to actually carry out the coping activities they consider. The coping efforts they consider can be perceived as intentions for coping. Intentions are the most immediate and important predictors of peoples’ behaviour, but do not explain all of it (Sheeran, 2002). Lonely older adults might lack the skills or resources to change their behaviour. For instance, going outdoors and meeting people might require social skills and self-esteem in order to be successful. This means that lonely older adults may be unable to cope with loneliness, which is the fourth stage of the process. Intervention organisers can focus on assisting older adults
in the process of coping with loneliness by providing them the tools they need to carry out the coping efforts they consider. Second, the coping plans lonely older adults make, might not be sufficient to alleviate their loneliness. A different coping plan might be needed. As they consider fewer coping efforts, especially active ones, lonely older adults, and older adults most prone to loneliness, seem unconvinced that loneliness can be successfully combated. This may make them unwilling to invest their time and energy in coping with their loneliness. Convincing older adults that even in unfavourable circumstances, loneliness can be reduced by improving relationships, might be an important step towards alleviating loneliness. Older adults who believe improving relationships is possible may be more inclined to try. Older adults can be made aware that loneliness can be combated in old age by showing them how others do so successfully. Practice examples can open older adults’ eyes to possible solutions. Another way of convincing older adults that loneliness can be alleviated is by having them experience firsthand that they can improve their relationships and supporting their further actions. Making older adults aware that loneliness can be combated in old age can also be done preventively among older adults who are not lonely.

In Chapter 5 of this thesis, I studied the first stage of the process of coping with loneliness, awareness of the loneliness problem. More specifically, I focused on whether older adults are aware that poor health and widowhood are risk factors for loneliness in old age. Awareness of risk factors is a first step towards preventive action (Weinstein et al., 2002). Preventive action to avoid loneliness can be an effective way to combat loneliness. Preventive actions are taken to avoid loneliness and are thus taken before one gets lonely or even before one is exposed to the risk factors for loneliness. In general, older adults were found to be aware that poor health and widowhood are risk factors for loneliness. Older adults in good health and married seemed more aware of this than older adults in poor health or widowhood. This awareness suggests that older adults who are not exposed to loneliness risk factors acknowledge that if their marital or health status should change, they would be at risk for loneliness. Since older adults relate them to potential loneliness, preventive action to avoid loneliness should address them. A preventive action with high potential is investing in the quality and quantity of one’s social network. The social network needs to be quantitatively and qualitatively maintained or improved so that if one is confronted with a negative life event, a sufficient network is available. People need to have several others to share their deep emotional feelings with, so if one of them is lost others
can fill part of the gap. Investing in the social network can prevent loneliness or contributes to a faster recovery.

Limitations of this study
In Chapter 2 of this thesis, I studied the effectiveness of three generic interventions that want to contribute to combating loneliness. The research had low response rate and large sample attrition for all three interventions. Both forms of selection can lead to inaccurate causal conclusions about intervention effects, which actually reflect differences in pre-existing characteristics of the respondent groups (Larzelere, Kuhn, & Johnson, 2004). A likely form of bias is an overrepresentation of satisfied participants in the study. In a previous report, participants in the holiday activity and other interventions were found to be very satisfied with the interventions (Schoenmakers, Van Tilburg, & Fokkema, 2012a). Compared to satisfied participants, unsatisfied ones are less likely to respond and more likely to drop out of the study because they may be unwilling to invest their time and effort in a study focused on the intervention they are not satisfied with. Likewise, participants for whom the intervention was effective may be overrepresented in the study. Unfortunately it is unknown to what extent selection bias has occurred. An overrepresentation of participants who benefited from the intervention would mean that the effects reported in this study are too optimistic, even though no average intervention effect was observed. The observed effectiveness for severely lonely people may also be attributed to this form of selection bias.

The interventions studied in Chapter 2 are a small selection of the interventions that aim to contribute to combating loneliness. As a result, this thesis only gives a partial view of the total field. The studied interventions are examples of certain types of interventions, but not all. According to Fokkema and Van Tilburg (2007), there are five types of interventions, i.e., public education and mentality change, training intermediaries, socio-cultural activities, personal activation, and courses, discussion groups, and therapy. Public education and mentality change is an intervention at the macro-level, to change the behaviour or attitudes of a society. People associate loneliness with less competence, intelligence, and sincerity, and with passivity and being less suitable for friendship (Lau & Gruen, 1992). By addressing negative perceptions about lonely people, others may be more inclined to engage in relationships with them, which may result in a reduction of loneliness. Training intermediaries is an intervention at the meso-level to change the behaviour or attitudes of
professionals or volunteers who work with lonely people. The other three intervention types are at the micro-level and aim directly at lonely people. Socio-cultural activities are designed to foster more contact for lonely people in the social environment. Personal activation stimulates lonely people to change their own situation by providing them social and practical support. Courses, discussion groups, and therapy focus on structurally changing factors that stimulate loneliness, such as a lack of social skills. All three interventions studied in Chapter 2 are at the micro-level. The home visiting activity operates at the cutting edge of social-cultural activities and personal activation. Volunteers can carry out to make the participant participate more in society or develop a personal relationship between them, but they can also provide practical and emotional to help lonely participants change their situation. The holiday activity and shopping service are examples of social-cultural activities that create meeting places at which participants can develop new contacts. Future studies can hopefully evaluate a wider range of interventions.

Chapters 3, 4, and 5 of this thesis focus solely on older adults. Combating loneliness may be different for different age groups. In their longer lives, older adults are more likely to have experienced incidental or lasting loneliness than younger adults. Older adults have also had more time to experiment with ways of combating loneliness. These experiences can have influenced older adults’ preferred ways of combating loneliness. For instance, lonely older adults who overcame loneliness in the past may have selected a way of combating loneliness that has proven successful for them and stick to it, whereas lonely younger adults may try various ways to find the more effective one. Alternatively, older adults who experienced continuous or recurrent loneliness may have tried so many ways to combat loneliness in the past that they have given up on combating it, whereas younger adults are still eager to keep trying. Therefore, the results presented in this thesis do not automatically apply to individuals of other age categories. Furthermore, the results apply to older adults of the current generation, but not necessarily to older adults of future generations. As society changes, future generations of older adults will have grown old in a societies with personal relationships that are different from those of previous generations (Allan, 2008). These changes may affect older adults’ loneliness and their perceptions of coping with it, but we do not yet know how.

In the discussion of this thesis, I used a model of the process of coping with loneliness initially designed to evaluate the coping process of individuals. The studies presented in
Chapters 3 to 5 focused on individuals. I argued that the model for the process of coping with loneliness can also be used to evaluate interventions. As to the results of Chapter 2 I suggested that intervention organisers could think about how to help lonely people address each separate step. However, I did not address lonely people’s social networks. Like organisations, lonely people’s relatives, friends, and neighbours can assist them at each stage of the process of coping. Future studies on combating loneliness might address the contributions of various actors to the process of coping with loneliness.