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REVIEW

Coping with loneliness through consumption

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Abstract

Loneliness is a complex set of aversive feelings that arises when people perceive that their belongingness needs are not being met. Usually, these feelings of loneliness are temporary because people successfully cope with their loneliness by connecting with others. However, for some people, their attempts to cope with loneliness are unsuccessful, and their loneliness becomes chronic, which can have severe consequences for their mental and physical health. Understanding the causes and consequences of loneliness is critical for developing interventions to reduce loneliness, a need made more urgent by the dramatic rise in reported loneliness over the last few decades. In this review, we provide a synthesis of the research on how people cope with loneliness through consumption situations and the extent to which these coping strategies are successful. We also provide a discussion of how the marketplace has responded to the rapidly increasing levels of chronic loneliness worldwide. We conclude with an agenda for future research to answer both basic and applied research questions regarding the causes, consequences, and underlying processes of loneliness.

KEYWORDS
affect and emotion, happiness and wellbeing, loneliness, self and identity, social exclusion, social isolation

INTRODUCTION

Humans are remarkably social beings who are highly motivated to establish significant interpersonal relationships. Baumeister and Leary (1995) posit that the need to belong is a fundamental human need that developed evolutionarily to increase the likelihood of survival. The establishment of social groups provided advantages in securing food, providing protection against outside threats, and increasing reproductive opportunities (Heinrich & Gullone, 2006), and thus the general motivation to establish social connections became a selected-for trait that propagated psychological mechanisms that favored positive social contact and disfavored social isolation. Thus, over time, the need for developing satisfying social connections became psychologically embedded (Leary, 2015), and fundamental belongingness needs form the basis of several early psychological theories of human development that focus on the relation between establishing meaningful social relationships and the development of self-identity (Bowlby, 1969; Erikson, 1993; Heinrich & Gullone, 2006; Rokach, 1989). However, despite the strong (wired-in) motivation to establish social connections, sometimes people feel a disconnect between their desired level of social connection and what they perceive their current level to be. In other words, they perceive that their belongingness needs are not being met, and this discrepancy between desired and currently perceived feelings of belongingness results in feelings of loneliness.

The feeling of loneliness—like any threat to fundamental human needs—is an aversive state from which people are highly motivated to escape (Baumeister & Leary, 1995; Perlman & Peplau, 1981; Rucker & Cannon, 2019). Often this is not problematic; after all, almost everyone experiences feelings of loneliness from time to time (Cacioppo & Cacioppo, 2018; Rotenberg, 1999), and these feelings of loneliness are usually easily remedied by establishing new social connections or re-establishing old ones. However, at least two interrelated aspects of loneliness make it *very problematic*. The first is that although most people are successful at alleviating momentary feelings

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of loneliness, a certain subset of the population is not. Instead, for these individuals, the initial feelings of loneliness develop into a persistent state of *chronic loneliness*, and this chronic state is not merely psychologically uncomfortable, it can be physically damaging to the point of being deadly (Cacioppo & Cacioppo, 2018; Holt-Lunstad et al., 2015). Failure to alleviate loneliness is associated with numerous mental and physical health problems, including increased morbidity and mortality, heart disease, risk of Alzheimer's Disease, and depression (for reviews, see Hawkley & Cacioppo, 2010; Lim et al., 2020).

The second aspect is that the subset of the population that experiences chronic loneliness is both sizeable and increasing. To be clear, most people are not chronically lonely. Depending on the polls, on average close to a majority (35%–50%) of people indicate they are rarely or never lonely, and roughly 30%–40% say they are sometimes lonely. However, a growing subset of the population report frequent, severe, and persistent feelings of loneliness, with estimates ranging from 10% to 30% (Cacioppo & Cacioppo, 2018; Cigna U.S. Loneliness Index, 2018; Hawkley & Cacioppo, 2010; Ipsos, 2021), leading numerous polls and media outlets to conclude that we were in the midst of a loneliness epidemic even before the COVID pandemic's inception, and unsurprisingly, the pandemic appears to have made the situation worse (Ducharme, 2020; O'Sullivan et al., 2021; Stallard & Stallard, 2020). In a pre-pandemic poll of more than 2000 adult Americans, 72% reported having felt a sense of loneliness, and 31% reported feeling lonely at least once a week (AOA Media Team, 2016). Similarly, based on data from the European Commission's in-house science service, around 30 million adults living in the European Union reported frequently feeling lonely, and 75 million reported being socially isolated (Lange, 2019). Feelings of loneliness appear to be increasing among younger adolescents as well (Twenge et al., 2019). Studies conducted during the pandemic find that loneliness increased across the board, from elderly individuals who are being told to self-isolate (Armitage & Nellums, 2020), to parents of young children who have been unable to see their extended families (Coughlan, 2020), to adolescents who are being deprived of their social lives (Fumagalli, Dolmatzian, et al., 2021; Hertz, 2021). Countries are also reacting to the perceived loneliness epidemic, with both Britain and Japan naming a Minister of Loneliness to address the problem, and other initiatives that address feelings of loneliness have been developed around the world. Table 1 provides some examples of these programs and initiatives.

Given the increasing levels of loneliness and its equally apparent deleterious effects, how do individuals cope with loneliness? That is, what means do individuals use to assuage aversive feelings of loneliness? This review article addresses this question with a particular focus on how consumption situations affect and potentially decrease feelings of loneliness. The review is structured as follows. In the first section, we review seminal research on the psychology of loneliness, delving more deeply into the definition of loneliness and delineating its potential causes. We also discuss current theories of loneliness, with a particular emphasis on Cacioppo and colleagues' relatively recent formulation of their Evolutionary Theory of Loneliness (Cacioppo et al., 2014; Cacioppo & Cacioppo, 2018). Within this discussion, we detail some misperceptions of loneliness and their implications for potential interventions and remedies and briefly review research on interventions to reduce loneliness. In the second section, we move to a consumer context and review the latest research on how individuals cope with loneliness through consumption, and in doing so provide a conceptual framework to organize the review. This section takes a consumer-centric approach that details the various strategies that individuals use, both consciously and unconsciously, to cope with their feelings of loneliness. In the third section, we describe how the marketplace has reacted to increasing levels of loneliness to provide products and services intended to help consumers combat loneliness. In the final section, we provide an agenda for future research in which we describe what we view as critical unanswered research questions regarding the antecedents and consequences of loneliness and the interplay between the two.

THE PSYCHOLOGY OF LONELINESS

Defining loneliness

Although precise definitions vary across theories of loneliness, theorists generally agree that loneliness is an aversive state arising from the perception that one's belongingness needs are not being met (Baumeister & Leary, 1995; Hawkley & Cacioppo, 2010; Perlman & Peplau, 1981; Russell et al., 1984). The perception component is critical: Loneliness is primarily a subjective experience that is relatively independent of objective isolation. Socially isolated people may not necessarily feel lonely, and people with many contacts in their social network may nevertheless feel lonely. Thus, it is not just simply about the number (quantity) of contacts in one's social network, but also about the quality of those contacts (Cacioppo et al., 2009; Wheeler et al., 1983). Weiss (1973) makes a similar distinction with the concepts of social loneliness (lack of integration in a social network) versus emotional loneliness (perceived lack of quality relationships). The distinction is also captured in scale items of the most-used measure of loneliness, the UCLA Loneliness Scale (Russell, 1996; "How often do you feel that people are around you but not with you?").

Emotional and social loneliness are individual-level concepts and generally pertain to the social relationships that a person develops with another person. However,

TABLE 1 Selected list of organizations created to address loneliness worldwide

Name	Description	Link	Where
Ending Loneliness Together	National network of organizations working together to address growing problem of loneliness in Australia.	https://endingloneliness.com.au/	Australia
Australian Government's Seniors Connected Program	The Seniors Connected Program aims to combat isolation and loneliness among Australians over 55 who live in their communities.	https://www.dss.gov.au/communities-and-vulnerable-people-programs-services/seniors-connected-program	Australia
Global Initiative on Loneliness and Connection (GILC)	Global community of national organizations committed to ending global issue of loneliness and social isolation.	https://www.gilc.global/	Global
The Loneliness Lab	Organization that investigates the structural drivers that make cities lonely places.	https://www.lonelinesslab.org/	Global
The Cost of Loneliness	The Cost of Loneliness Project™ aims to be a repository for information on loneliness and to create a platform to share possible solutions.	https://www.thecostofloneliness.org/	Global
Minister for Loneliness	Tetsushi Sakamoto was the first appointed minister of loneliness in Japan who served from 12 February 2021 to 4 October 2021.	https://mainichi.jp/english/articles/20210514/p2a/00m/0na/051000c	Japan
Let us End Loneliness	New Zealand Coalition to End Loneliness set up in 2018 by seven f organizations that work to reduce loneliness and social isolation.	https://letsendloneliness.co.nz/about/	New Zealand
Eén tegen eenzaamheid (National Coalition Against Loneliness)	Companies, social organizations, and government institutions work together to reduce loneliness among the elderly.	https://www.eentegeneenzaamheid.nl/	The Netherlands
Campaign to End Loneliness	Network of national, regional, and local organizations work together to reduce loneliness.	https://www.campaigntoendloneliness.org/	UK
Minister for Loneliness	Tracey Crouch was the first appointed minister of loneliness in the UK who served from 15 June 2017 to 1 November 2018.	https://time.com/5248016/tracey-crouch-uk-loneliness-minister/	UK
Together Co.	Loneliness charity that creates social connections to reduce loneliness.	https://togetherco.org.uk/	UK
Marmalade Trust	Loneliness charity for all ages.	https://www.marmaladetrust.org/	UK
Re-engage	Charity working within communities to end social isolation and loneliness in older people.	https://www.reengage.org.uk/	UK
Commit to Connect	Cross-sector initiative to fight social isolation and loneliness for older adults and people with disabilities.	https://committoconnect.org/	USA
Friend to Friend America	Friend to Friend America finds and teaches community members to visit isolated and lonely elders.	https://friendtofriendamerica.org/	USA

some theorists suggest that loneliness can also occur at the collective level (collective loneliness; Cacioppo et al., 2015). Collective loneliness arises when individuals lack meaningful relationships with groups (e.g., school, team, workplace, national identity). Thus, loneliness is not only about how individuals connect with other individuals, but how individuals connect with valued groups. Consequently, even when a person has satisfying personal connections with other individuals, loneliness may still arise if a person feels socially disconnected from their workplace colleagues or even their fellow countrymen (Hertz, 2021).

One ambiguity in both defining and measuring loneliness is whether it is a state, a trait, or both. Scholars generally concur that loneliness can be both a trait-level variable (stable characteristic of an individual over time) and state-level variable (an emotion experienced at a particular point in time that varies across situations; Pinquart & Sörensen, 2001; Russell, 1982; van Roekel et al., 2018), which seems obvious and uncontroversial. The confusion arises when the same scales are used to measure loneliness as a trait and state variable. For example, various formulations of the UCLA Loneliness Scale have been used to measure both state and trait loneliness (cf. Pieters, 2013; van Roekel et al., 2018; Waytz et al., 2015). A related ambiguity arises in the distinction between chronic loneliness and other more temporary types of loneliness. As noted earlier, nearly everyone feels lonely from time to time, and these momentary and usually temporary feelings of loneliness can result from daily interactions (e.g., being socially excluded, feeling left out) or changes in life situations that can trigger loneliness because they may abruptly change either the quantity or quality of social connections. Generally, people are successful in alleviating these feelings of loneliness by establishing new or re-establishing old social connections, and some have termed this temporary type of loneliness as *transient* or *situational* loneliness (Martín-María et al., 2020). However, for some individuals, their attempts to alleviate feelings of loneliness are unsuccessful and thus their feelings of loneliness become persistent and chronic, and it is for this group that the effects of loneliness can be mentally and physically devastating. Unfortunately, precisely when and why transient loneliness becomes chronic is not well-known.

Triggers of loneliness

Loneliness can arise for various reasons, and many of these pertain to life events or life stage transitions that affect social connections, which Lim et al. (2020) refer to as "triggers" of loneliness (Lim et al., 2020, p. 794). Examples include death of a spouse, relative, or friend, divorce, moving residences, and changing jobs (Leary, 2015), and as we recently learned, the consequences of a pandemic. Life transitions are particularly strong triggers of potential loneliness for both younger and older individuals. The transition from early childhood through adolescence is fraught with challenges of identity formation, which can affect the extent to which young individuals require and expect support and intimacy and the extent to which they develop successful social relationships (Chaplin et al., 2019; Heinrich & Gullone, 2006; Sippola & Bukowski, 1999). Elderly individuals also go through significant life transitions, such as when they retire or must move away from home to facilities that can meet their health needs, which can significantly and abruptly affect both the quantity and quality of their social connections (Lim et al., 2020). Similar interrelated causes of loneliness may arise from simple demographics. Examples include marital status (married individuals are happier than unmarried), living status (those living alone are lonelier), and age (Hawkley et al., 2022).

Certain situations can also trigger loneliness. For example, people who experience social exclusion report higher levels of loneliness (Baumeister & Leary, 1995; Leary, 1990; Yan & Sengupta, 2021). Similarly, peer rejection predicts loneliness in children and adolescents (Boivin et al., 1995; Cassidy & Asher, 1992). However, social exclusion and loneliness are not synonymous, and social exclusion can threaten fundamental needs other than the need to belong (Leary, 1990; Lee et al., 2017; Lee & Shrum, 2012; Williams, 2007). (Note that although loneliness and social exclusion are not synonymous, we nevertheless include in our research review the effects of both social exclusion and loneliness when the effects are consistent with threats to belongingness needs but try to distinguish between the two when describing research findings.) Similarly, having a high need to belong is not synonymous with loneliness (Leary et al., 2013) and the correlation between the two constructs is low ($rs < 0.30$; Cacioppo & Cacioppo, 2018; Mellor et al., 2008). Rather, it is the discrepancy between the need to belong and satisfaction with personal relationships that is strongly related to loneliness (Mellor et al., 2008). Thus, the triggers of loneliness are not necessarily direct causes. Whether they result in loneliness depends on how each individual responds to the challenge of a sudden lack of the usual level of social connection, but they do increase the probability of loneliness through an often-sudden change in an otherwise normal, healthy, nonlonely individual's level of social connection.

Evolutionary theory of loneliness

Although there are numerous theories of loneliness (for reviews, see Ernst & Cacioppo, 1999; Perlman & Peplau, 1982), the current major psychological theories of loneliness can be grouped into two categories: the social needs perspective and the cognitive discrepancy perspective (for reviews, see Marangoni & Ickes, 1989; Spithoven et al., 2019). The social needs perspective (e.g., Weiss, 1973) views subjective experiences of loneliness as deriving directly from objective social deficits (lack of quality social connections), whereas the cognitive discrepancy perspective (e.g., Perlman & Peplau, 1982) focuses on the subjective evaluations of the quality of social connections independent of objective social deficits. Although the differences between these two perspectives are not germane to this review, their similarities are. Both perspectives agree that (a) loneliness is a subjective experience; (b) it results from some form of relationship deficit; (c) it is normal but aversive; and (d) it

is universally bad (i.e., no redeeming value; Marangoni & Ickes, 1989; Perlman & Peplau, 1982). Thus, both perspectives are consistent with the notion that lonely individuals are highly motivated to improve their social connections (social connection motive).

The Evolutionary Theory of Loneliness (ETL; Cacioppo & Cacioppo, 2018) takes a somewhat different view. It agrees that loneliness is a subjective experience, results from relationship deficits, and is normal but aversive, but disagrees that it is universally bad. Instead, the ETL views loneliness in terms of its adaptive functions. To enhance survival, biological warning systems have evolved to alert individuals of potential danger. Because social connections are critical to the reproduction and survival of social species, perceptions of social isolation act as a warning signal that social connections and relations are deficient.

Loneliness activates dual motivations

Although the biological warning system in response to loneliness is an adaptive response to motivate remedies for loneliness, the warning system produces two seemingly paradoxical opposing motives: an approach motive to restore or replace deficient social relations, and an avoidance motive for self-preservation. The social connection motive is intuitive. If one's social relations are deficient, then seeking out ways to form new social connections or renewing old ones seems like an obvious remedy for loneliness (Cacioppo & Patrick, 2008). This view is consistent with the social monitoring hypothesis that loneliness increases sensitivity to social information and connection opportunities (Cacioppo et al., 2017; Gardner et al., 2005; Pickett & Gardner, 2005). For example, both situationally induced and chronic loneliness increase attention to emotional expressions (Gardner et al., 2005; Pickett et al., 2004), and feelings of social exclusion increase attention to smiling faces compared to other faces (DeWall et al., 2009).

Although the approach motive of social connection may potentially alleviate the distressful state of loneliness through successful social connection, evolutionarily, loneliness also signals a feeling of being unsafe because of inadequate mutual aid or protection. Intraspecies aggression threatens survival, and thus indiscriminate attempts to form trusting relationships and connect with others may not only be dangerous but fatal (Spithoven et al., 2019). Thus, according to the ETL, perceptions of loneliness also increase the motivation for short-term self-preservation, resulting in increased hypervigilance for social threats and increased self-focus (Cacioppo & Cacioppo, 2018; Spithoven et al., 2019). Consistent with this reasoning, loneliness is positively associated with self-centeredness (Cacioppo et al., 2017), preference for larger interpersonal distance (Layden et al., 2018; Saporta et al., 2021), and less interpersonal trust (Fumagalli, Shrum, et al., 2021; Rotenberg, 1994). Thus, the self-preservation motive can result in behaviors that actually decrease social contact quality and quantity by creating a situation in which lonely individuals are motivated to avoid other people, particularly when interpersonal distance is small (Cacioppo & Cacioppo, 2018). In one longitudinal study, participants who reported feeling lonely at an assessment were less likely to have friends by the next assessment (Cacioppo et al., 2009). The increased hypervigilance to interpersonal threats can also affect the quality of social connections and interactions. Lonely people perceive threats in simple everyday events that nonlonely people do not perceive as threatening and lonely people rate similar social interactions as less positive (less comfort, intimacy, and understanding) and more negative (more caution, conflict, and distrust) than do nonlonely people (Hawkley et al., 2003). Thus, the activation of the self-preservation motive can have the paradoxical effect of impeding quality social connections.

Another consequence of the activation of the self-preservation motive is a diminished capacity for self-regulation. Constant vigilance for social threats and the negative emotions it produces (e.g., anxiety) deplete self-regulatory resources (Hawkley & Cacioppo, 2010). Research confirms this link between loneliness and diminished self-control. Loneliness is associated with reduced attentional control (Cacioppo et al., 2000), and experiences of social exclusion interfere with executive control functions (Campbell et al., 2006) and increase self-control failures (Baumeister et al., 2005; Burson et al., 2012; Stenseng et al., 2015). The link between chronic loneliness and diminished self-control is particularly problematic because individuals with lower self-control are perceived as less trustworthy than those with higher self-control (Righetti & Finkenauer, 2011), which may cause them to be less liked by others (Stavrova et al., 2022). Thus, not only does the self-preservation motive reduce (at least initially) the motivation of lonely individuals to socially connect with others, it also reduces their chances of success at social connection, resulting in a bi-directional, vicious cycle that reinforces initial feelings of loneliness (Stenseng et al., 2015).

If the two competing motives of social connection and self-preservation are activated in response to loneliness, one question that arises is which will dominate or take precedence? Although to date the ETL posits that both the social connection and self-preservation motives are activated simultaneously (Cacioppo & Cacioppo, 2018), it is silent on what conditions cause one motive to be more accessible than the other. Recent research suggests that the primary determinant is whether loneliness is chronic (long-lasting). As noted earlier, although nearly everyone experiences bouts of loneliness, many if not most individuals are successful in establishing or re-establishing social connections. Thus, for individuals who are not chronically lonely, but experience transient feelings

of loneliness, the social connection motive is likely the dominant one. However, for those who are not successful at alleviating their feelings of loneliness through social connection, and loneliness becomes a chronic state, the self-preservation motive should dominate (Saporta et al., 2021). Indeed, even when chronically lonely people succeed in obtaining social support, they tend to find the exchange less fulfilling than do less lonely people (Hawkley et al., 2003).

Misperceptions of loneliness

There are a few misperceptions of loneliness that we want to highlight because they have important implications for potential remedies for loneliness and interpreting consumer research on loneliness.

Misperception #1: The main cause of loneliness is lack of social connection

The first misperception is one we have noted earlier: Loneliness is not driven merely by the lack of social connections but also by the lack of quality connections (for a review, see Heinrich & Gullone, 2006). People with small social networks are not necessarily lonely (Fischer & Phillips, 1982) and the total number of social connections or time spent with others are not strong predictors of loneliness (Hawkley et al., 2003; Wheeler et al., 1983). For example, one study that tracked children over time in a summer camp found that although the number of friends children had at camp was moderately negatively correlated with loneliness, the correlation was driven mainly by differences between those with no friends and those with friends (Parker & Seal, 1996). Children with no friends were lonelier than those with friends, but children with only one friend reported similar levels of loneliness as those with many friends (see Heinrich & Gullone, 2006). More recent research also shows that the relation between number of social interactions and well-being is negligible beyond a moderate level of interactions (Luo et al., 2022; Ren et al., 2022). Thus, although the number of social contacts appears to play some role in the development of loneliness, the quality of social contacts is more strongly related to loneliness (Pinquart & Sörensen, 2001).

Misperception #2: It's mostly older people who are lonely

A common misperception is that loneliness is primarily a problem for the elderly. Numerous surveys of the general public find that loneliness is considered a serious problem for older adults (Tornstam, 2007; Victor et al., 2002), and respondents frequently overestimate the level of loneliness in older adult populations and this overestimation occurs even among the elderly themselves, although the overestimation is not as great as in younger age groups (Abramson & Silverstein, 2006; for a review, see Dykstra, 2009). These perceptions make sense given that many of the triggers of loneliness noted earlier may be more likely to occur in the elderly (Lim et al., 2020; Pinquart & Sörensen, 2001).

However, the data on the prevalence of loneliness paint a different picture. Although drawing conclusions from individual studies is difficult because the relationships between age and loneliness may differ across cultures (Dykstra, 2009), the general pattern is that there is a very weak correlation between age and loneliness across the lifespan. This weak correlation occurs because the relation between age and loneliness is U-shaped (Hawkley et al., 2022; Lim et al., 2020; Nicolaisen & Thorsen, 2017; Pinquart & Sörensen, 2001). Those over 65 do indeed report higher levels of loneliness compared to middle-aged adults, but some studies suggest that this difference is primarily driven by high levels of loneliness in the very elderly (e.g., >80 years; Pinquart & Sörensen, 2001). However, children, adolescents, and younger adults (depending on how the age categories are formed) report levels of loneliness similar to, and often greater than, elderly adults. The trend of increasing loneliness, or at least currently high levels of loneliness, is particularly acute in younger individuals. Hertz (2021) notes that 20% of millennials report having no friends at all, and in some surveys, over 50% of children, adolescents, and very young adults report feeling lonely sometimes or often (cf. Ballard, 2019; Murphy, 2010).

Misperception #3: Only "Social misfits" are lonely

The fundamental attribution error refers to the tendency for people to overweight internal characteristics (personality, disposition) and underweight external characteristics (situational factors) to explain another person's behavior (Ross, 1977). This tendency applies to perceptions of lonely people. A common perception of the prototypical lonely person is one who is not good at making friends, finds social situations aversive, is socially awkward, and does not fit in with others. There is surely some truth to this perception. Loneliness is positively correlated with shyness, introversion, social anxiety, social withdrawal, and neuroticism, and negatively correlated with social competence and self-esteem (Cacioppo et al., 2006; for a review, see Heinrich & Gullone, 2006). However, given that virtually all the studies showing these associations are correlational, it is difficult to untangle their causal direction. Cacioppo et al. (2006; see also Cacioppo et al., 2000) addressed this issue by experimentally manipulating whether participants felt lonely or socially embedded through hypnotic

induction. Participants who were hypnotically induced to feel lonely reported lower self-esteem, sociability, social skills, positivity, and optimism, and higher levels of negativity, anger, fear of negative evaluation, and anxiety compared to those induced to feel socially embedded. These results are consistent with predictions made by the self-preservation motive of the ETL. Loneliness increased their apprehension about social interactions, and thus loneliness in effect caused them to be social misfits, rather than the reverse.

Other research also suggests that there may not be huge differences between lonely and nonlonely on certain social and physical characteristics that may make certain individuals feel more or less wanted by others. In one study, Cacioppo et al. (2000, p. 146) measured the loneliness levels of 2632 college undergraduates with the UCLA loneliness scale and then recruited a subset of these participants who scored in the top (lonely group), middle (normal group), and bottom (socially embedded group) quintiles and measured their characteristics on a set of indicators of what they termed "social capital": intelligence, height, weight, physical attractiveness, age, scholastic achievement, and socioeconomic status. The groups did not differ on any of the measures. Thus, at least for this sample of college undergraduates, many of the characteristics that might govern whether people are socially included by others did not predict levels of loneliness.

One final observation is worth noting about how others perceive lonely people and how lonely people perceive themselves. Although most people exhibit the fundamental attribution error of overweighting internal and underweighting external forces in explaining the behavior of others, they also tend to exhibit the opposite tendency when explaining their own behaviors that may be considered failures, and thus overweight situational factors and underweight internal factors. However, this is not the case for lonely people. Lonely people appear to also attribute internal factors to their loneliness and interpersonal failures. Compared to nonlonely people, lonely people view themselves more negatively, exhibit higher levels of self-disgust (Ypsilanti et al., 2019), consider themselves to be more inferior, unattractive, unlovable, socially incompetent, and are more likely to expect negative evaluations from others (Heinrich & Gullone, 2006; Horowitz et al., 1982; Jones et al., 1983; Paloutzian & Ellison, 1982; Zakahi & Duran, 1982), and they attribute these shortcomings to why they feel lonely (Anderson et al., 1983; Revenson, 1981). In further contrast to nonlonely people, lonely people do not attribute their interpersonal successes to their own internal characteristics, but instead attribute their successes to external factors such as luck (Solano, 1987). Moreover, lonely people also view others in a similarly negative way, and relative to nonlonely people, think others are less attractive, socially desirable, supportive, trustworthy, and competent communicators (Ernst & Cacioppo, 1999; Jones et al., 1983; Spitzberg & Canary, 1985; Zakahi & Duran, 1982). Thus, the activation of the self-preservation motive in the response to loneliness appears to reduce both the motivation and ability of lonely people to establish social connections that would potentially alleviate their loneliness, resulting in a vicious downward spiral of loneliness.

Loneliness interventions

There have been numerous loneliness intervention studies over the last few decades, and thus we focus on two recent meta-analyses, Masi et al. (2011) and Veronese et al. (2021). Both meta-analyses grouped the interventions by type of intervention (i.e., what trigger or cause of loneliness the intervention targeted). The Masi et al. (2011) meta-analysis grouped into four types: improving social skills, enhancing social support, increasing opportunities for social contact, and social cognitive training. The Veronese et al. (2021) meta-analysis added technological innovation, meditation, and animal therapy/robopets. (The social cognitive training involved interventions to reduce maladaptive social cognitions that arise nonconsciously from the activation of the self-preservation motive. Thus, for example, such an intervention would teach individuals that loneliness can trigger suspicion, distrust, and other negative thoughts about others, and negative thoughts about social interactions, without their awareness and thus they should not be hasty in making negative judgments.)

Restricting the analyses to only studies that used randomized controlled trials, Masi et al. (2011) found that only social support and social cognitive training interventions had a significant effect, and the social cognitive training interventions were more effective than social support interventions. Veronese et al. (2021) reported somewhat similar results, finding that social support and social cognitive training interventions showed significant effects, but that mindfulness/meditation interventions were also effective. The finding that mindfulness/meditation interventions are effective at reducing loneliness is consistent with other research showing that engaging in mindfulness through meditation may reduce depressive symptoms (Reangsing et al., 2021) and increase self-efficacy (Pandya, 2020), which may in turn decrease loneliness (Veronese et al., 2021). The finding that social support interventions aimed at increasing the quality of social relationships are effective is consistent with the research reviewed earlier showing that the quality of social interactions is one of the major determinants of loneliness. Similarly, interventions that reduce maladaptive social cognitions that arise from self-preservation motives are consistent with the ETL. Notably, across both meta-analyses, which collectively integrated findings from over 200 interventions, increasing the quantity of social connections consistently had no effect on perceived loneliness. Similarly, technological interventions did not significantly affect loneliness, nor did animal therapy (pets) or the use of robot pets.

Summary

Thus far, we have discussed research on loneliness in general terms to place it in a theoretical context. Theorists generally agree that loneliness originates from the evolutional development of humans' fundamental need to belong, that threats to belongingness needs result in feelings of loneliness, that feelings of loneliness are subjective and at least partially independent of objective measures of social isolation, and that this process is on the one hand very normal, but on the other hand potentially harmful if attempts to alleviate loneliness are unsuccessful. We have also provided a description of the Evolutionary Theory of Loneliness (ETL), which posits that feelings of loneliness can activate two potentially conflicting motives, social connection and self-preservation. Almost all theories of loneliness posit the social connection motive, but the ETL is relatively unique in positing the self-preservation motive. In our view, the ETL has particular utility because it can potentially explain some of the conflicting findings in loneliness research and makes unique predictions about the effects of loneliness that can be subsumed under one integrated theory. In addition, the ETL can explain some apparent misperceptions about who is lonely and why they are lonely. Finally, based on meta-analyses of loneliness interventions, only the ones that target increasing the quality of social connections, reducing maladaptive social cognitions, and increasing mindfulness appear to have consistent efficacy. In the next sections, we turn to how loneliness influences the marketplace, in terms of both consumer and marketer responses to loneliness.

CONSUMER RESPONSES TO LONELINESS

To reiterate, feelings of loneliness arise when the fundamental need to belong is threatened, which results in an aversive state that people are highly motivated to alleviate. Like any coping mechanism in response to self-threats, there are many different avenues for coping, and one of these is through consumption. This process of coping with self-threats through consumption is captured by Rucker and colleagues' Compensatory Consumer Behavior Model (Mandel et al., 2017; Rucker & Cannon, 2019). The two motives that the ETL activates in response to loneliness—social connection and self-preservation—can be viewed as coping mechanisms, and these coping mechanisms result in particular consumer emotions, cognitions, and behaviors. Figure 1 provides a conceptual framework that describes this process. In the next sections, we review research on how the two motives produce distinct consumer coping outcomes. We also discuss the issue of whether the coping mechanisms are likely to be successful at alleviating feelings of loneliness, both in the short term and long term.

Social connection motive

Direct connection

One coping strategy in response to loneliness is to engage in activities that increase the number of connections or increase the quality of connections, a coping strategy for Rucker and colleagues term direct resolution (Mandel

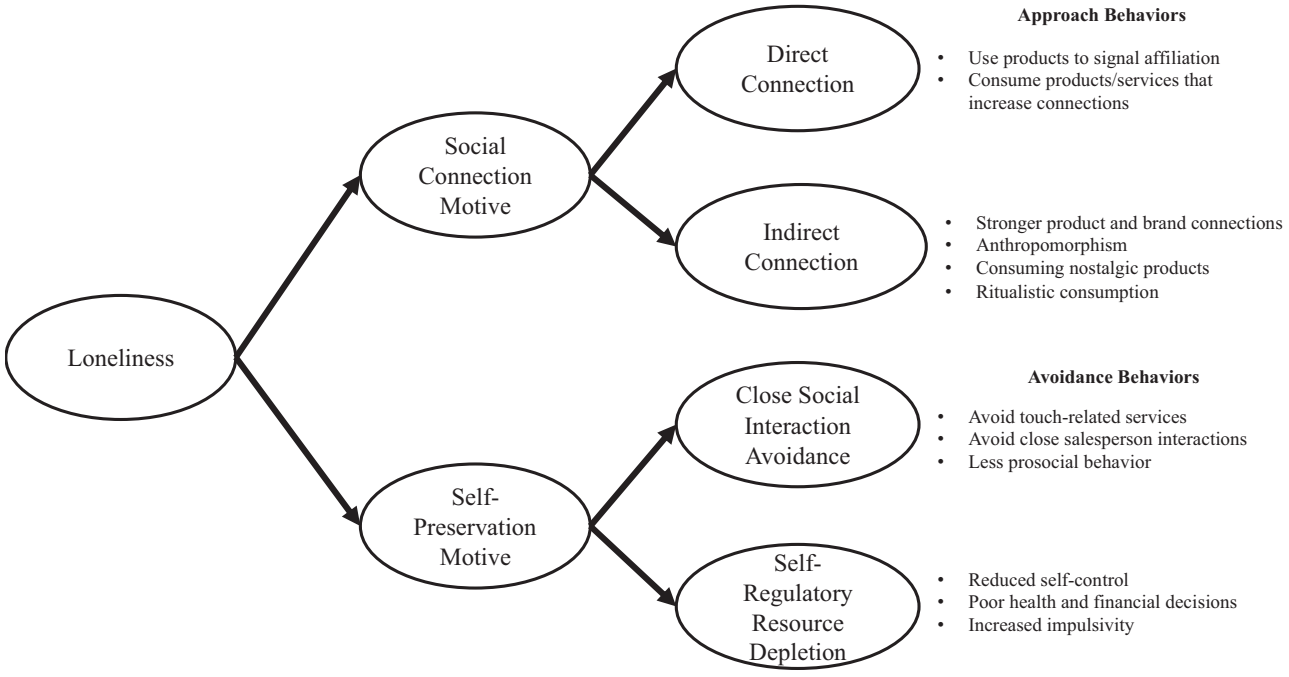

FIGURE 1 Conceptual framework

et al., 2017). For example, consumers may try to signal affiliation with others by tailoring their behavior in consumption situations to align with preferences of their consumption partners. In one set of studies, compared to nonthreatened participants, participants whose belongingness needs were threatened were willing to pay more for food their interaction partner ostensibly liked, even though they themselves did not like the food. The motive to reconnect was apparently so powerful that threatened participants were also more willing to engage in illegal activities if they thought it would help with social connection (Mead et al., 2011).

Lonely consumers may also use shared connections with products and services to generate stronger feelings of social connection. For example, there is some evidence that involvement with brand communities may reduce feelings of loneliness. The brand communities, particularly tight ones, may serve as a type of support group that provides psychological support along multiple dimensions (O'Sullivan & Richardson, 2020). Similarly, inducing participants to think about belonging to a brand community increased their relatedness satisfaction and reduced their current feelings of loneliness (Snyder & Newman, 2019).

Another example of how lonely consumers bolster feelings of affiliation and social connection is by signaling shared preferences and values through their purchases. For example, like the example just noted in which consumers tailored their consumption behavior specifically to that of their interaction partner, lonely consumers may attempt to signal affiliation by purchasing products that are the most popular, even though they may like the less popular (distinctive) products better. For example, in one set of studies, lonely consumers expressed a greater preference for majority-endorsed products, but only when their preferences would be known to others. When their preferences were private, however, their expressed preferences reversed (Wang et al., 2012). Similar findings were provided by Wan et al. (2014). Participants whose belongingness needs were threatened preferred minority-endorsed products when they thought the cause of their social exclusion was beyond their control, but their preferences reversed when they thought their feelings of social exclusion might change.

Another strategy that lonely consumers may adopt in their efforts to alleviate loneliness is to consume products and services that are designed to increase social connections. Electronic communications more generally, and social media more specifically, are examples. Email, messaging apps, and social media platforms have dramatically increased people's ability to communicate with others, and thus potentially establish, increase, and nurture social connections. Indeed, numerous studies find that loneliness is positively correlated with social media usage (for reviews, see O'Day & Heimberg, 2021; Song et al., 2014). One interpretation of this correlation is that the more lonely people are, the more they use social media to increase their social connections. However, like any simple correlation, the causal relation is ambiguous. It may be that the more people use social media, the lonelier they become (Primack et al., 2017; Twenge et al., 2019).

Results of longitudinal and experimental studies on the effects of social media usage provide some evidence that social media usage may increase loneliness, but the results are not always consistent. In one study that manipulated social media usage, undergraduate students either limited their social media usage (Facebook, Instagram, Snapchat) to 30 min per day or used social media as they normally would. Limiting social media usage decreased feelings of loneliness and fear of missing out (FOMO) compared to the control group (Hunt et al., 2018). A longitudinal study showed a similar pattern in which amount of social media usage was positively correlated with loneliness (Marttila et al., 2021). However, there is increasing evidence that the effects of social media usage on loneliness depend on the type of social media, rather than mere frequency of usage (Course-Choi & Hammond, 2021). For example, a longitudinal study that examined social media usage and loneliness in a Finnish sample before and during the COVID-19 pandemic found that usage of social media that was identity-related decreased loneliness during the initial lockdown. However, this positive effect of social media usage was not observed for those who indicated they were often lonely. A cross-sectional study found that social media usage (e.g., Facebook, Instagram) during initial pandemic lockdowns predicted greater loneliness, and this effect was mediated by FOMO. However, the use of messaging apps (e.g., WhatsApp) showed the opposite effect, such that messaging app usage was associated with decreased feelings of loneliness (Fumagalli, Dolmatzian, et al., 2021).

Thus, research suggests that rather than social media usage decreasing loneliness through increased social connections, social media usage actually increases feelings of loneliness. One explanation for these seemingly paradoxical findings pertains to the issue of quality versus quantity of social connections noted earlier. Although social media may increase the quantity of social connections, the quality of the social contacts may decrease. In addition, those who spend less time on social media have more time to directly connect with others (Twenge et al., 2019). Thus, the lower quality social media interactions may in effect replace or crowd out more high-quality in-person interactions.

Indirect connection

Products as substitutes for lack of social connection

Consumption situations can be used to directly facilitate social connections, but the products themselves can also serve an indirect social connection function. When

lonely consumers are not able to satisfy their belongingness needs by improving social relations with others, they may develop stronger connections to their possessions as a temporary substitute (MacInnis & Folkes, 2017). For example, higher levels of loneliness are associated with stronger self-brand connections (Loh et al., 2021) and greater attachment to possessions that are central to self-identity and that restore a feeling of connection with others (Mittal & Silvera, 2018).

Another way in which lonely consumers can facilitate social connections with products is through anthropomorphism. Contemporary theories of anthropomorphism—ascribing human characteristics to nonhuman entities—expressly indicate that anthropomorphism serves a sociality function and that anthropomorphism arises at least in part from a desire for social contact and affiliation (cf. Epley et al., 2007; Yang et al., 2020). Indeed, consumers talk to their possessions, give them names, ascribe personality characteristics to them, and even consider them as members of their families (Aaker, 1997; Aggarwal & McGill, 2007; Epp & Price, 2009; Fournier, 1998). Thus, lonely people may strengthen their connections with their possessions by humanizing them (MacInnis & Folkes, 2017). Threats to belongingness needs increase anthropomorphic tendencies (Bartz et al., 2016; Epley et al., 2008; Niemyjska & Drat-Ruszczak, 2013) and increase preferences for anthropomorphized products (Chen et al., 2017; Hadi & Valenzuela, 2014). Moreover, anthropomorphizing products may be a successful strategy. Anthropomorphizing products appears to at least partially restore feelings of social connection for lonely people (Chen et al., 2018; see also Mourey et al., 2017). Anthropomorphizing products can also influence feelings of vitality and self-control abilities for lonely consumers. For example, in one study, participants who were induced to feel lonely and then given the opportunity to anthropomorphize a product reported having more vitality and self-control than those who were not given the opportunity to anthropomorphize a product (Chen et al., 2018).

Products as positive social primes

Thinking about or using particular products can also reduce loneliness by priming memories of pleasant social interactions and feelings of social support. For example, feelings of loneliness and belongingness deficits are associated with higher levels of nostalgia (Han & Newman, 2022; Loh et al., 2021; Seehusen et al., 2013; Zhou et al., 2008), and experimentally increasing feelings of loneliness increases nostalgia. This effect occurs because even though loneliness decreases perceptions of social support, nostalgia has the opposite effect of increasing perceptions of social support (Zhou et al., 2008) and motivation to socially connect with others (Abeyta et al., 2015). These findings are consistent with research showing that fostering feelings of social support (e.g., simply by thinking about a supportive friend) can be empowering (Schnall et al., 2008) and nostalgia increases feelings of social support and reduces feelings of loneliness because it primes memories of the past that are high in sociality (Abeyta et al., 2015). Consistent with this reasoning, the consumption of nostalgic products can restore feelings of belongingness that have been threatened (Loveland et al., 2010). Similarly, eating comfort foods can buffer against loneliness by activating positive relationship concepts because comfort foods are typically consumed with relational partners (Troisi & Gabriel, 2011).

Used products also appear to appeal to lonely consumers because they provide a symbolic connection to previous users. Across a series of studies, Huang and Fishbach (2021) showed that both chronic and transient loneliness are positively related to preferences for used (vs. new) products, that simply being alone (sitting alone, shopping alone) is associated with greater preference for used products, and experimentally inducing temporary feelings of loneliness increases interest in consuming used products, and this effect is mediated by the desire to connect with prior owners.

The way products are consumed or used can also decrease feelings of loneliness by activating concepts associated with positive social relations. For example, threats to belongingness are associated with feelings that one's life is meaningless (Stillman et al., 2009; Twenge et al., 2003) and having positive social relationships contributes to perceptions that one's life is meaningful (Stavrova & Luhmann, 2016). Performing simple rituals, including using or consuming a product in a ritualistic manner (e.g., eating an Oreo cookie in a special way), increases feelings that one's life is meaningful, which in turn reduces feelings of loneliness (Wang et al., 2021). Loneliness is also associated with a perceived lack of personal control (Heinrich & Gullone, 2006), and performing rituals increases the perception of control, which in turn decreases grief associated with the loss of a loved one (Norton & Gino, 2014).

Short-term versus long-term effects

In most of the studies just reviewed, establishing connections with products or connections to others through products appears to at least momentarily reduce feelings of loneliness for those who are already lonely. Thus, on the surface, temporarily substituting product connections for human connections when lonely people are unable to satisfy their belongingness needs through human social interaction may be a reasonable short-term strategy. However, whether such substitutions have long-term utility is not clear. Indeed, many of the studies just reviewed involved the experimental inducement of momentary (transient) loneliness, preventing the assessment of long-term effects for people who are chronically lonely.

One concern is that the supposedly temporary substitution of product connections for human connections may end up not being temporary at all, but instead may become

a more permanent substitution. In such situations, the product connections may end up crowding out human social interactions (Kasser, 2002; Lane, 2000). Research on the relation between loneliness and materialism suggests that this may be the case. Loneliness and general social connection deficits are associated with a greater love for material possessions (Lastovicka & Sirianni, 2011), stronger self-brand connections (Loh et al., 2021), and higher levels of materialism (Ang et al., 2014; Gentina et al., 2018; Pieters, 2013; Shrum et al., 2022).

To the extent that developing social connections with products hinders the ability of lonely people to establish human social connections, and if the repairs to belongingness deficits through product connections are temporary or insufficient, it may lead to a vicious cycle whereby loneliness leads to higher levels of materialism, which in turn may lead to even greater loneliness. At least one longitudinal study supports this possibility. A 6-year longitudinal study found that loneliness in one year predicted greater materialism in later years, and materialism in one year predicted higher levels of loneliness in later years, but that the effect of the former was stronger than the latter (Pieters, 2013).

Self-preservation motive

Close social interaction avoidance

The activation of the self-preservation motive increases the motivation for short-term preservation, hypervigilance for social threats, preference for larger interpersonal spaces, and self-centeredness. These effects can be observed in consumption situations, although compared to evidence for the social connection motive, the findings are limited. A recent set of studies specifically tested predictions of the self-preservation motive in the context of salesperson interactions (Fumagalli, Shrum, et al., 2021). Intuitively, interpersonal touch seems like a good remedy for loneliness and is consistent with the reconnection motive, and research suggests that interpersonal touch has therapeutic value in reducing many psychological problems associated with loneliness, such as depression and anxiety (Field, 2014; Young, 2007). However, the self-preservation motive, which spurs hypervigilance to social threats, preferences for larger interpersonal space, and interpersonal distrust, suggests the opposite. Indeed, across several studies, chronic loneliness was negatively associated with comfort with interpersonal touch, and this effect was driven by the negative effect of loneliness on interpersonal trust. Reduced preference for interpersonal touch in turn had downstream effects on consumer preferences and behaviors: Loneliness was negatively correlated with preferences for and frequency of using services that involve interpersonal touch (e.g., dance lessons, massage) and preferences for interpersonal touch contact with salespersons.

Hypervigilance to social threats and increased distrust of others' motives on the part of lonelier people affects how they feel about and behave toward others. Lonelier people are less empathetic than less lonely people (Beadle et al., 2012), and this affects their tendency to help others. Thus, several studies find that chronic loneliness is negatively correlated with prosocial behaviors (Archer Lee et al., 2022; Cassidy & Asher, 1992; Gillath et al., 2005; Huang et al., 2016; Woodhouse et al., 2012).

Self-regulatory resource depletion

The anxiety associated with interpersonal distrust and constant vigilance for social threats depletes self-regulatory resources, which reduces self-control and can lead to suboptimal decision-making. Loneliness is positively associated with alcohol and drug abuse, smoking, eating disorders, and obesity, and is negatively correlated with health-conducive behaviors (e.g., exercise, good nutrition; Heinrich & Gullone, 2006). Threats to belongingness needs are also associated with risky financial decision-making (Duclos et al., 2013), consuming unhealthy foods (Baumeister et al., 2005), and impulsive buying tendencies (Peng et al., 2020).

Whereas loneliness can deplete self-regulatory resources, increasing perceptions of social support and social connection increases feelings of empowerment and capability. Participants who were primed with positive social support estimated obstacles to be less difficult than those primed with negative or neutral support (Schnall et al., 2008). In another study, anthropomorphizing a product decreased participants' feelings of loneliness and increased their feelings of vitality and their ability to exercise self-control (Chen et al., 2018).

Summary

In this section, we have reviewed research on how lonely individuals cope with their loneliness through consumption. The ETL posits that loneliness activates both the motive for social connection and for self-preservation, and each of these influences coping through consumption. By far the most research documents how consumers use products and services in response to the social connection motive. Lonely people use consumption situations to signal affiliation and shared preferences (tailoring behavior to conform to interaction partners, majority-endorsed products). In some cases, when people lack the ability to satisfy belongingness needs, and thus reduce their feelings of loneliness, they may develop stronger connections to products and brands as substitutes for human social interaction. In other cases, people may use products and services to increase their social network and thus increase the quantity of their social connections. In still other cases, people may turn

to products that are associated with positive social connections, such as nostalgic products, ritualistic products, and products that have been owned by others. All of these are logical remedies for feelings of loneliness, and in many cases, they are at least momentarily effective in reducing feelings of loneliness. However, the research is currently unclear on whether these strategies have long-term utility.

The self-preservation motive also affects consumer decision-making, but in ways that are often counterproductive. Although the consumer research that we have linked to the self-preservation motive is sparse, the findings comport with what the ETL predicts. The self-preservation motive makes lonely people hypersensitive to social threats, and thus potentially counteracts their ability to establish social connections. The self-preservation motive appears to cause lonely people to avoid certain situations that involve close interpersonal contact. The motive also depletes self-regulatory resources, and thus lonely consumers are more likely to make impulsive decisions.

In the next section, we turn to how the marketplace has responded to the apparent loneliness epidemic with new products and services intended to reduce feelings of loneliness and increase feelings of belongingness. We also discuss the extent to which these interventions appear to rely on lay intuitions of what causes loneliness versus the results of interventions that research has shown to be effective or ineffective.

MARKETPLACE TO THE RESCUE?

For-profit products and services

The purported loneliness epidemic has received considerable media attention. It has also not escaped the attention of marketers. Several for-profit businesses have been started with the objective of selling products or services that are intended to reduce users' loneliness. The top portion of Table 2 provides a representative list. As the table shows, about half on the list were launched (or are about to launch) after the inception of the COVID-19 pandemic. The types of businesses vary greatly in terms of the presumed causes of loneliness they target and their target markets (Table 2, far right column). For example, several are targeted at people who are socially isolated and lack sufficient social connections. ElliQ is an AI-powered social robot targeted at elderly people that will engage in conversations, tell jokes, and even provide motivational advice. In this instance, the product is intended to provide a substitute for human interaction. Other services are designed to increase social connections and interactions. BuddyBold is a subscription service that matches seniors with a "buddy" who is paid to keep them company. In France, the French postal service La Poste provides a subscription service in which postal workers visit elderly subscribers to make sure they are okay, do not need anything, and provide brief social interaction.

Other products and services are also targeted at those who are socially isolated. Friendship Lamps are sets of smart lamps intended to be shared with others. The lamps connect to Wi-Fi and to one another and will light up in sync so consumers can let their far-away friends and loved ones know they are thinking of them. Another product that has been around for several years is the HugShirt. The HugShirt is a T-shirt that has actuators embedded in the material that, when activated, purportedly mimic the feeling of receiving a hug. Using a phone app, users can send a hug to another person with the press of a button. The product is targeted at people who have for various reasons been displaced from friends or family (e.g., busy travelers, people living far away from their family members), and is based on the premise that human touch (in this case, simulated) can be therapeutic for loneliness.

Some services are designed to directly increase the quantity of social connections. RentAFriend.com is an online service that offers a list of potential rentable friends who will accompany customers on activities such as attending business events, going to family functions, and shopping. One individual in Japan, nicknamed "Rental-san," offers himself as a paid companion to accompany people who simply do not want to be seen alone.

Other services are designed to increase the quality of social connections. Both Cuddlist.com and Cuddle Up To Me provide "professional cuddle therapy" in which trained cuddlers are hired to listen, comfort, and cuddle their customers. These two services are based on the premise that interpersonal human touch is an effective treatment for either transient or chronic loneliness. Nod is a new app targeted to institutions of higher education that has the objective of reducing student loneliness and depression, with a focus on first-year students. The app is intended to build skills that are useful for combating feelings of loneliness and their skill-building exercises are based on scientific evidence (e.g., expressing gratitude, performing acts of kindness; Bruehlman-Senecal et al., 2020). Nod addresses several possible causes of loneliness by providing suggestions for increasing social connections, interacting with others (increasing social skills), and reducing self-criticism (reducing maladaptive social cognitions). KINND is a social media platform that aims to increase both the quality and quantity of online social relationships. It appears to try to overcome some of the characteristics of most popular social media platforms that may decrease rather than increase quality social connections with its 10 guiding principles, which include no ghosting (cutting off communication with no explanation), inclusivity, and respectful and kind communication, among others.

TABLE 2 Marketplace to the rescue: for-profit and no-cost marketplace interventions to curb loneliness

Name	Description	Link	Launch date	Loneliness cause or trigger addressed
For-profit products and services				
Nod	Smartphone app that targets first-year college students to reduce loneliness and depression through guided exercises.	https://heynod.com/	2022	Quantity and quality of social connections; maladaptive cognitions; social skills
ElliQ	AI-powered social robot targeted at older individuals to provide substitute for human social interaction	https://elliq.com/	2022	Quantity of social connections
BuddyBold	Subscription service that matches seniors with a "buddy" to keep him or her company.	https://www.buddybold.nl/	2022	Quantity of social connections
La Poste's "Veiller sur mes parents" ("Watch Over My Parents") program	Postal workers check in on the elderly living alone.	https://www.laposte.fr/veiller-sur-mes-parents	2018	Quantity of social connections
AV1	Telepresence robot for children and young adults with long-term school absence.	https://www.noisolation.com/av1	2021	Social isolation, quantity of social connections
Komp	App that allows children and grandchildren to send photos, messages, and make video calls to their analog grandparents.	https://www.noisolation.com/komp	2021	Social isolation, quality of social connections
Long-Distance Friendship Lamps	Set of smart lamps that light up in sync so that consumers can let their far-away loved ones know that they are thinking of them.	https://www.friendlamps.com/	2019	Social Isolation
HugShirt	Wearable device that looks like a regular T-shirt but has built-in actuators that can simulate the feel of a hug.	http://cutecircuit.com/hugshirt/	2002	Quantity and quality of social connections
KINND	Social media platform to build meaningful online friendships.	https://www.kinnd.io/	2022	Quality of social connections
RentAFriend.com	Website offers a list of potential rentable friends for a variety of social activities	https://rentafriend.com/	2009	Quantity of social connections
Shoji Morimoto: "Rental-san"	Japanese man who offers himself as a paid companion who can accompany others who do not want to be alone at activities.	https://www.adn.com/nation-world/2022/03/20/rent-a-stranger-this-japanese-man-makes-a-living-showing-up-and-doing-nothing/	2022	Quantity of social connections
Cuddlist	Service that supplies professional cuddlers who provide human touch therapy.	https://cuddlist.com/	2015	Quality of social connections
Cuddle Up To Me	Service that supplies professional cuddlers who provide human touch therapy.	https://cuddleuptome.com/	2013	Quality of social connections
Eilik	Robot with emotional intelligence created to be a desktop companion at work.	https://energizelab.com/	2022	Quantity of social connections (workplace)
Less Lonely Course / App	Service that offers seminars and workshops to lessen loneliness and strengthen connections with a team, manager, and organization.	https://lesslonely.com/app/	2022	Quality of social connections (workplace)

(Continues)

TABLE 2 (Continued)

Name	Description	Link	Launch date	Loneliness cause or trigger addressed
No-cost store initiatives				
Chewy sympathy bouquets	Online retailer of pet food and pet-related products that sends bereavement packages to families who lose their pets.	https://people.com/pets/compassionate-pet-company-sends-moving-gifts-to-grieving-pet-parents-we-are-part-of-their-families/	2017	Bereavement
Kletskassa	Supermarket chain Jumbo in the Netherlands designates cash registers for checkout chats where customers can have casual conversations with the cashiers.	https://nieuws.jumbo.com/persbericht/jumbo-geeft-startschot-voor-opening-200-kletskassas/616/	2021	Quantity and quality of social connections
Bla Bla Caisse	Supermarket chain Carrefour in France cash registers for checkout chats where customers can have casual conversations with the cashiers.	https://www.lesoleil.com/2022/02/11/cest-pas-amazon-ici-une-bla-bla-caisse-pour-le-client-pas-presse-1162a6109a7c63c7c0a753c6a13f6e6e	2022	Quantity and quality of social connections
Costa Coffee Chatty Tables	Chatter & Natter table where customers can sit if they want to talk to other customers.	https://thechattycafescheme.co.uk/	2018	Quantity and quality of social connections

Finally, some products and services target loneliness in the workplace. Eilik is a companion robot for the desktop produced by Energize Lab that purportedly has emotional intelligence that allows it to display facial expressions based on interactions with the user. Lesslonely.com offers courses, seminars, workshops, and custom programs to strengthen connections between employees, teams, and managers.

No-cost store initiatives

In the preceding examples of marketplace responses to high levels of loneliness, the companies charged their customers for the products and services they offered. However, some for-profit stores have instigated no-cost services designed to target specific triggers of loneliness or have sponsored broader initiatives. Some examples can be seen in the bottom portion of Table 2. One that received considerable attention during the pandemic was the practice by certain European grocery stores of setting up dedicated checkout lanes designed to promote social interactions. For example, the French supermarket chain Carrefour and the Dutch supermarket chain Jumbo designated specific checkout lanes where customers can have casual conversations with the cashiers. Similarly, the British coffeehouse chain Costa Coffee reserved what they called "Chatty Tables" where customers can sit if they want to talk to other customers. To counteract bereavement-induced loneliness, Chewy.com, an online retailer of pet food and pet-related products, sends condolence notes and flowers to customers who have lost their pets. The common factor across these no-cost store initiatives is that even though they are targeted at the stores' own customers, they in effect represent corporate social responsibility initiatives.

Summary

Companies have responded to the emerging problem of isolation and loneliness with products, services, and no-cost initiatives designed to address potential causes and triggers of loneliness. Although many of the examples we have discussed arose in response to the COVID-19 pandemic, which greatly increased social isolation throughout the world, some started much earlier, attesting to the increasing awareness that loneliness is a serious problem.

One question is whether these marketplace interventions work. In other words, do they decrease feelings of loneliness, are the effects (if any) temporary or enduring, do they reduce loneliness-induced mental and physical health problems? As with most consumer products and services, few companies have sufficient motivation or financial resources to conduct rigorous scientific evaluations of the marketplace interventions (and even if they do, they are unlikely to make the results public unless

the results are favorable). Thus, apart from conducting such studies, assessing the probability of effectiveness is difficult. However, one way of estimating the probability of success of the interventions is to compare them to the results of the meta-analyses we reviewed earlier that assessed the effectiveness of previous interventions.

Mapping these findings onto the products and services described in Table 2, only two stand out in their likelihood of being effective: the Nod app and the KINND social media platform. Both target quality of social connections and are also notably involvement intensive. Most of the others are aimed at increasing the quantity of social connections, which research has shown often is not a strong predictor of loneliness. That said, it is also important not to overstate the findings of the previous interventions. For example, the BuddyBold and La Poste's services that are targeted at increasing social contact for those who are socially isolated such as the elderly may in fact be effective for that age group. Few of the intervention studies focused on older individuals, and thus it is difficult to generalize the findings. Finally, two of the services, Cuddlist and Cuddle Up To Me, offer interpersonal touch sessions. Although these two services presumably target quality of social connections, it is unclear whether chronically lonely individuals would be drawn to such services given their heightened levels of interpersonal distrust, discomfort with interpersonal touch, and preference for larger interpersonal distance.

Although we remarked earlier that companies such as the ones listed in Table 2 are unlikely to have the motivation or financial resources to conduct rigorous tests of the efficacy of their intervention, there is one exception. One of the services, the smartphone app Nod, was recently evaluated in a randomized controlled trial (Bruehlman-Senecal et al., 2020). The participants were 221 first-year college students who were randomly assigned to receive access to Nod immediately (treatment group) or after four weeks (control group). The results showed that the levels of loneliness at week 4 did not differ between the treatment and control group, and thus the Nod app did not reduce overall loneliness levels after four weeks. However, additional analyses suggested that use of the Nod app helped buffer more vulnerable participants (those with high baseline depression) from increases in loneliness over the four-week period.

Summarizing, the results of previous studies show that only certain types of interventions appear to be successful: increasing the quality of social connections, reducing maladaptive social cognitions, and increasing mindfulness and meditation. Thus, for-profit products and services like those shown in Table 2 that target these causes may be successful (e.g., Nod, KINND), and one study suggests that the Nod app may be effective, at least for people who are already more lonely or depressed. The Nod app program is interesting in that it addresses multiple potential causes of loneliness—increasing quantity of connections, improving social skills, increasing quality of connections, and reducing maladaptive social cognitions—with the latter two supported by previous research. Unfortunately, most of the products and services in Table 2 target presumed causes that previous research has shown to be ineffective (increasing quantity of social connections), and thus may not be effective in reducing chronic loneliness.

AN AGENDA FOR FUTURE RESEARCH

Loneliness is a complex psychological state that results from a perception that one's social relationships are deficient. Loneliness hurts, both mentally and physically (Cacioppo et al., 2006; Leary, 2015), and can be devastating for mental and physical health. It is associated with increased suicide, depression, alcohol abuse, increased morbidity, and premature death (Heinrich & Gullone, 2006). The good news is that at any given moment, most people do not feel lonely, and when they do, the feelings are transient. Just like with most negative feelings, people get over it. The bad news, however, is that a sizeable percentage of people do feel lonely often and do not get over it, and the number of individuals for whom loneliness becomes a chronic state is both sizeable and growing (Hertz, 2021). Consequently, loneliness appears responsible for a growing percentage of the mental and health problems just noted, to the point that some have equated the effects of chronic loneliness with health risks such as high blood pressure, obesity, and cigarette smoking (House et al., 1988). Given all of this, it is unquestionable that scientists need to understand both the causes and consequences of loneliness to develop ways to help reduce its severity.

As this review makes clear, scientific knowledge regarding loneliness has grown steadily, to the point that we actually know quite a lot about loneliness. This was not always the case. A Web of Science search for the period 1900–1959 revealed an average of just 0.45 articles per year. For the period 1960–1999, the average jumped to almost 35 articles per year and jumped almost another 10-fold to 307.60 articles per year for 2000–2017 (Cacioppo & Cacioppo, 2018), and using the same search criteria for 2017–2021 yields an average of 1456 articles per year. Thus, loneliness is a relatively new research problem, but we have gained a vast amount of knowledge in just the last couple of decades. New theories, such as the Evolutionary Theory of Loneliness, have been developed that can explain some apparent inconsistencies regarding the antecedents and consequences of loneliness. Research that began with a shotgun approach that tested intuitive hypotheses regarding the causes of loneliness and its corresponding remedies narrowed down the field of explanations. From the latest research, we have learned that the quantity of social connections people

have is a poor predictor of loneliness and that loneliness is not strongly related to a lack of social skills, and thus interventions designed to increase social contacts or to improve social skills are rarely successful. We now know that quality of social connections is a much stronger predictor of loneliness and that maladaptive thoughts that arise when self-preservation motives in response to loneliness are activated can impede the establishment of beneficial social relationships.

Research also tells us how people cope with both transient and chronic loneliness through consumption. Products and services can be used to signal affiliation with others to increase both the quantity and quality of social connections and social media platforms can be used to increase the quantity of social connections. However, accumulating research also suggests that many social media platforms may increase rather than decrease feelings of loneliness. We also know that some consumers may at times compensate for lack of quality social connections by forming social connections with products and that consuming certain types of products appears to reduce at least momentary feelings of loneliness by activating memories associated with social connections. Finally, we know that the marketplace has also noted the problem of loneliness and has responded with products they perceive consumers will find useful in reducing their feelings of loneliness. Unfortunately, we also see that the products and services appear to target the same intuitive causes of loneliness that researchers initially targeted, with a heavy emphasis on increasing the number of social connections.

However, one question that arises from this review is, if we know so much about loneliness, and agree that what we know about loneliness has increased greatly over the last few decades, then why is loneliness and its associated negative effects still increasing at what seems like a rapid pace? Perhaps the answer is simple and obvious: We still do not know enough about loneliness. Despite the rapid pace of knowledge acquisition, there are still critical research gaps and unanswered questions. In the remainder of this review, we discuss the most important unanswered research questions that we think still need to be answered to begin addressing the critical problem of loneliness. Broadly, these are (1) improving basic loneliness research; (2) determining whether consumer coping strategies and marketplace interventions are effective; and (3) developing better collaborations among academia, public policy institutions, and the marketplace. Table 3 provides a list of potential research questions within these three areas.

TABLE 3 Future research gaps and questions

Improving basic loneliness research
• Clarifying constructs: Transient vs. chronic loneliness; quality of social connections
• How many high-quality social connections are enough? What is the optimal number?
• Do transient and chronic loneliness interact?
• Which motivation (social connection, self-preservation) dominates, and when? Are there individual differences?
• What is the role of collective-level loneliness vs. individual-level loneliness? Which has a stronger effect? Do they interact?
• How does loneliness develop over time? Does reducing loneliness early in life affect the propensity to develop chronic loneliness later in life?
• Is increasing comfort with solitude an avenue to reduce loneliness?
Consumer and marketplace responses to loneliness
• Does compensatory consumption (reconnection through various means) work in the long term?
• What is the short- and long-term effect of substituting products for human interaction?
• Do marketplace interventions work in the long-term or do they create false hopes, waste consumer resources?
• When do marketing tactics do more harm than good by indirectly increasing consumer loneliness (e.g., exclusionary tactics, preferential treatment)?
Collaboration between Academia, Public Policy Organizations, and the Marketplace
• How can researchers help ensure that public policy interventions are evidenced-based?
• How can researchers help ensure that marketplace interventions (e.g., new products, services) are evidence-based?
• How can researchers help ensure that public policy organizations correctly measure the outcome of their interventions?
• What results should we measure for both types of interventions? Are results long-lasting or are they "elastic changes" that soon return to baseline levels?

Basic loneliness research

Clarifying constructs and measures

Transient versus chronic loneliness

Across all the research reviewed, it is clear that loneliness can be temporary (transient) or persistent (chronic). What is also clear is that chronic loneliness is the problem (Cacioppo & Cacioppo, 2018; Martín-María et al., 2020; Qualter et al., 2015). It is the type of loneliness that has such debilitating effects and presumably is the one that researchers want to target with their interventions. However, to our knowledge, there is no clear standard definition of chronic loneliness, other than ambiguous descriptions such as "prolonged," (Martín-María et al., 2020; Qualter et al., 2015; Spithoven et al., 2017) or "sustained" (van Roekel et al., 2018). There are standard scales that purportedly measure chronic (trait) loneliness, yet the same scales have been used to measure transient (state) loneliness. Researchers who have attempted to investigate transient versus chronic loneliness have been creative in distinguishing between chronic and transient loneliness but are seldom consistent (cf. Hammoud et al., 2021; Martín-María et al., 2020; Saporta et al., 2021; van Roekel et al., 2018).

Coming up with consistent definitions and measures of chronic and transient loneliness is important because several of the studies suggest that the two constructs interact. For example, chronic loneliness is associated with preference for greater interpersonal distance (consistent with Layden et al., 2018), but transient loneliness is associated with preference for smaller interpersonal distance (Saporta et al., 2021). Prosocial behavior also differs as a function of transient versus chronic loneliness, with transient loneliness associated with more prosocial behavior but chronic loneliness associated with less (Archer Lee et al., 2022). These studies suggest the social reconnection motive may be dominant during high transient loneliness, whereas the self-preservation motive may be dominant for high chronic loneliness.

Consistent definitions and validated measures of transient and chronic loneliness are also critical to answering other important questions about their differential effects and interrelations. For example, when does transient loneliness turn into chronic loneliness? Are there individual differences in the likelihood that transient loneliness will become chronic? Are there individual differences in whether or how quickly the self-preservation motive is activated in response to feelings of loneliness? All these questions are important for understanding how to reduce loneliness, given that the negative effects appear to occur in response to chronic loneliness and activation of the self-preservation motive.

Quality of social connections

Another ambiguous construct that lacks a clear definition or measure is quality of social connections. Extant research suggests that the quality of social connections is a much stronger determinant of loneliness than quantity. However, what makes a social connection high(er) quality? Although it is easy enough to generate intuitive attributes such as how long one has been socially connected, how much time is spent across different types of communication (e.g., face-to-face, phone, e-mail, social media), or even a simple measure of how "close" one is with another person, no consistent definition has been offered.

Given the apparent importance of high-quality social connections, a standard measure would aid the interpretation of research findings across studies. Important questions regarding the effects of quality of social connections remain to be answered. For example, is there a minimum number of high-quality connections needed to ward off both transient and chronic loneliness? How many are enough? Of course, research will never be able to provide a precise number, if for no other reason than there are surely individual differences regarding how many are sufficient. However, to provide general advice on how to avoid chronic loneliness, it would be useful to know an optimal range.

A related question is whether quality and quantity of social connections interact. The research we reviewed generally sought to determine the relative impact of each. However, although it seems obvious that the higher the quality of the social connection the better, those who are highly socially isolated may show greater benefits from what may seem like superficial social interactions compared to those who are not as socially isolated. For example, consider consumer services like BuddyBold and RentAFriend (Table 2), which in effect allow lonely consumers to buy a social interaction. These would presumably qualify as low-quality social connections, but for those who are very isolated, even the superficial connection may have significant positive effects. Similar arguments apply to marketplace interventions like the supermarket chat lanes, which may provide some much-needed social contact for those who are very socially isolated.

Another example of how the ambiguity of what qualifies as a high-quality social connection or social interaction relates to the intuitive notion that quality may be at least in part a function of the duration of an interaction or the closeness with a social contact. However, an emerging research program on what Epley and colleagues term "undersociality" (Epley et al., 2022; Kumar & Epley, 2023) suggests that these factors may not be as important as one might think. They find that people are often reluctant to positively reach out to others because they think their attempt at prosocial behavior will not be that well-received. Yet, Epley and colleagues find that small acts such as expressing gratitude or appreciation not only make the recipients happy, and more so than the expressers predict, but it also makes the expressers themselves happier (cf. Boothby & Bohns, 2021; Kumar & Epley, 2018; Liu et al., 2022).

New research questions and approaches

Loneliness research could benefit from new research questions, approaches, and perspectives. Most of the research we have reviewed takes an individual-level perspective on both the causes and consequences of loneliness. However, loneliness can occur at the collective level, such as feeling socially disconnected in the workplace or even as citizens who feel like they do not fit in with society. This may raise the question of levels of analysis: Are the rise of loneliness and its increasingly detrimental effects individual problems or ones that are more structural, arising from changes at the societal level? As Hertz (2021) makes clear in her book *The Lonely Century*, this is not a new question. Technological advances that have made it easier to move around have increased residential mobility but have also decreased close social connections and increased loneliness (Oishi & Tsang, 2022). We have already mentioned new technologies such as electronic communication that greatly increase the frequency of

social contacts but may reduce their quality and meaningfulness. However, it may be worth considering why such advances in technology might have the impact that they do.

Beyond communication-related technological advances such as social media, a potential research question is what other structural changes may contribute to reduced feelings of social connectedness at the collective level? For example, some companies have transformed traditional office spaces such as separate offices or walled cubicles into open workspaces (i.e., no boundaries) with the expectation that it will spur more face-to-face interactions and increase collaboration and creativity. However, some research suggests that these open-space efforts have exactly the opposite of the intended effect, greatly reducing face-to-face interaction and ironically increasing email and instant messaging communications (Bernstein & Turban, 2018). Companies are also replacing workers with robots and other automated technology that not only reduces the chances for workplace social connection but also likely increases employee insecurity and decreases feelings of connectedness with the firm. Thus, understanding how the workplace may increase feelings of collective social disconnection and loneliness may be a fruitful avenue for future research.

We noted that the abundance of research on loneliness is relatively new. Similarly, Alberti (2019) notes that loneliness itself is a relatively new phenomenon, and the term did not occur with much frequency until around 1800. Yet, we also noted that the ETL posits that the motives of social connection and self-preservation both evolved evolutionarily because they increased the chances of survival. How can these two positions be reconciled? One possibility is captured by what is termed *evolutionary mismatch theory* (Schlaepfer et al., 2002). The mismatch is the result of an adaptive lag that occurs when the environment that produced an evolved mechanism changes more rapidly than the time it takes for the mechanism to adapt to the change (Li et al., 2018). This theory posits that many of the physical and psychological traits that were originally selected for because they were at the time advantageous for survival and reproduction may not only no longer be useful but can even be maladaptive (Tooby & Cosmides, 1990). Consider social relationships up until recently. Early man lived in small groups and thus cultivating close social relationships was key to survival, as the ETL notes. Those early social environments were also more dangerous, and thus the self-preservation motive was also highly useful. However, societal changes that saw more people living in very large groups may result in an environment in which the self-preservation motive, which can induce interpersonal distrust and social anxiety, may now be maladaptive (Chang & Durante, 2022). Thus, research that focuses on how the maladaptive repercussions can be minimized would be potentially fruitful.

New loneliness interventions

We reviewed research on loneliness interventions that pinpointed the types of interventions that have proven successful (increasing quality of social connections, reducing maladaptive cognitions, mindfulness/meditation interventions). However, recent research suggests other possible interventions that may have potential. One possibility is a type of social cognitive training based on self-affirmation theory. The theory posits that individuals typically respond negatively to self-threatening information and allowing people to self-affirm reduces the defensive processing of the self-threat information (Cohen & Sherman, 2014; Sherman & Cohen, 2006). Applied to loneliness, self-affirmation may reduce the negative social cognitions about both others and the self that are automatically triggered by feelings of loneliness. Another similar type of social cognitive training intervention is one that focuses on priming feelings of gratitude. Gratitude is an emotion that involves being thankful and appreciative and recognizing that one has benefited from the help of others (McCullough et al., 2002). Thus, feeling and expressing gratitude requires positive thoughts about others, and thus may potentially counteract the loneliness-induced maladaptive social cognitions. One experimental gratitude intervention indicated that a simple gratitude intervention (short daily gratitude writing exercise) decreased loneliness over a 20-day period (Bartlett & Arpin, 2019).

Loneliness in adolescents and young adults

We reviewed research documenting that loneliness is most prevalent in adolescent and young adult years. On the one hand, loneliness in adolescents and young adults is normal given the many social identity changes that occur at this stage of development (Heinrich & Gullone, 2006; Sippola & Bukowski, 1999). Most children are sufficiently successful at developing quality social connections during this transition period. On the other hand, some children fail to develop sufficient social connections and thus their loneliness may become chronic and debilitating. Given that chronic loneliness in adolescence is associated with severe social and emotional loneliness later in life (Lin & Chiao, 2020), more research is needed to understand the factors that prevent children and adolescents from establishing relationship bonds and meeting their belongingness needs. Recent research finds unsurprisingly that certain adverse experiences in adolescence (e.g., death of a parent, parental divorce, poor social skills, emotional neglect) predict greater loneliness later in life (Ejlskov et al., 2020; Lin & Chiao, 2020). However, given that the prevalence of adolescent loneliness has greatly increased over the past few years, even before the pandemic, what new factors may be driving the increase in adolescent loneliness? Examples might include greater residential mobility, greater family financial stress and less economic security, greater use of types of social media, and so forth.

Consumer and marketplace responses to loneliness

Consumer responses

We reviewed research detailing how consumers cope with loneliness through consumption. Most of the research dealt with how consumers can use products and services to increase the quantity and quality of social interactions. Some of these are relatively benign, such as using products to signal affiliation or shared preferences. Others, however, may have deleterious effects. For example, the use of social media can increase the quantity of social connections but potentially crowd out more meaningful social connections. More research is needed to understand the mechanisms that produce negative outcomes like FOMO, social anxiety, and loneliness. In addition, research that focuses on the mechanisms that can lead to positive outcomes from social media usage is also needed. Understanding the conditions that produce positive results may be illuminating for addressing maladaptive effects as well. In other words, what are the differences that produce positive versus negative outcomes? Within this, research designs that can better address causality issues are vital, given that, intuitively, the effects are bi-directional.

We reviewed research showing that lonely people may also cope with their loneliness through consumption by developing social relationships with their possessions, and in certain instances, this strategy seems to be effective, at least in the short term. A critical question is whether such substitutions have long-term effects. It is reasonable to think that if the substitutions are temporary, then anthropomorphizing possessions or consuming nostalgic or ritualistic products may buffer against transient loneliness and perhaps give lonely people some additional time to work on establishing meaningful human connections. However, it is an empirical question worth answering as to whether such substitutions may have negative long-term effects. Loneliness is positively correlated with anthropomorphic tendencies, and causal designs that manipulate loneliness indicate that loneliness does lead to anthropomorphizing products (Epley et al., 2008). However, it is possible that the reverse is also true, and the relation is bi-directional, and possibly reinforcing. Thus, research designs such as longitudinal ones that can assess potential bidirectional effects are needed.

One critical need for research on consumer responses to loneliness is to move from the lab to the field. Most of the consumer research on responses to loneliness are lab studies, which is understandable when trying to determine the validity of a novel proposition. However, developing methods and measures that can capture spontaneous and momentary feelings of loneliness (like those using experience sampling methods) and also capture spontaneous reactions to loneliness, isolation, and rejection are needed to determine whether the phenomena captured in the lab occur during the course of everyday life.

Marketplace responses

The marketplace has responded to the loneliness epidemic by introducing products and services intended to reduce feelings of loneliness. However, it is unclear at this point whether the product and service interventions are effective in reducing loneliness, either in the short term or long term. These questions are invariably difficult to answer for any product or service because businesses may consider it too risky to cooperate in research if the results might be damaging. But given the high stakes (high cost of loneliness), it is critical to try to address the question, and thus researchers may have to be creative in gaining the business's cooperation. Some inferences regarding the effectiveness of the products and services might be inferred by assessing the success of the businesses, but the correlation between success and effectiveness may be low. Businesses that offer a product that in fact is very effective may nevertheless fail if they cannot convince lonely consumers to try it. Similarly, unlike some products that are easy to test (does this detergent remove stains), feelings of loneliness are highly subjective and thus it may be difficult for lonely consumers to objectively assess whether they feel less lonely.

One avenue for engaging businesses is to help them design their offerings so that they address the causes of loneliness that have been reliably demonstrated in prior research. Few of the offerings appear evidence-based and target causes that have been reliably demonstrated in prior research. Instead, they mostly target ones that are both intuitive and easy to accomplish, such as increasing the number of social contacts or frequency of social interactions. Thus, apart from testing the effectiveness of existing offerings, working on collaborations with businesses in developing new offerings may be fruitful. A good example is the Nod app, which resulted from close collaborations between academic researchers and the company.

Collaboration between academia, public policy makers, and the marketplace

One important takeaway from the research we have reviewed is that close collaborations between academia (or at least basic science), public policymakers, and the marketplace are essential for designing effective interventions to reduce loneliness. This is best seen in the development of interventions that are not evidence-based, and this is equally true for large-scale interventions by governments, nonprofit institutions, and for-profit marketplace interventions. To be fair,

solid scientific evidence of intervention efficacies has been slow to develop, and only recently has there been a sufficient accumulation of rigorous research findings, such as those from randomized controlled trials, that allow for confident generalizations. This is understandable given that such sufficiently powered studies are enormously expensive. This is one reason why close collaborations are essential, because the costs of both time and money can be shared. Another reason is that lack of involvement of basic science researchers in the development of the intervention may result in expensive studies that may still not be able to answer critical questions because the interventions did not fully or correctly assess the outcomes.

CONCLUSION

Loneliness is a critical health problem at both the individual level and societal level and one that has not only increased significantly over the last few decades but also appears to be accelerating. The COVID-19 pandemic brought into even sharper relief the often-devastating effects of social isolation. Yet, the increases in loneliness also coincide with unprecedented opportunities to connect with others: it is easier to travel, easier to change residences, easier to communicate with others. In this review, we have highlighted the latest research on the causes and consequences of loneliness, how consumers cope with loneliness, and how marketers have responded with new products and services. We hope this knowledge can be used to effectively address the loneliness problem and provide interventions and remedies that reduce loneliness and increase well-being.

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