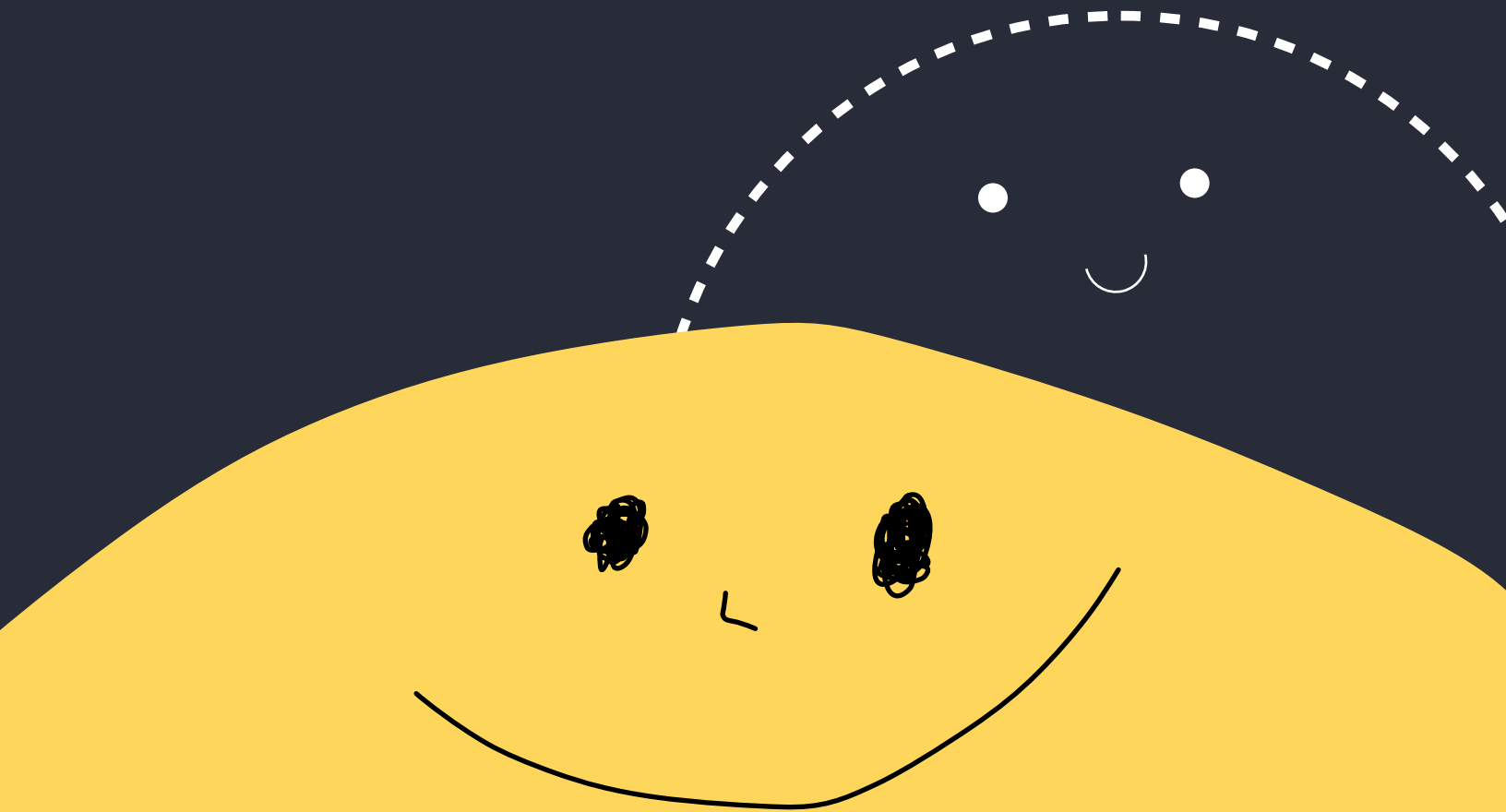


Loneliness in the Age of AI Companions

Resilience strategies for Gen Z to reclaim meaningful connection in a world of artificial intimacy



Ann de Sequeira & Meg Lin

Submitted to OCAD University in partial fulfillment of the requirements for the degree of **Master of Design in Strategic Foresight and Innovation**

Toronto, Ontario, Canada, 2026

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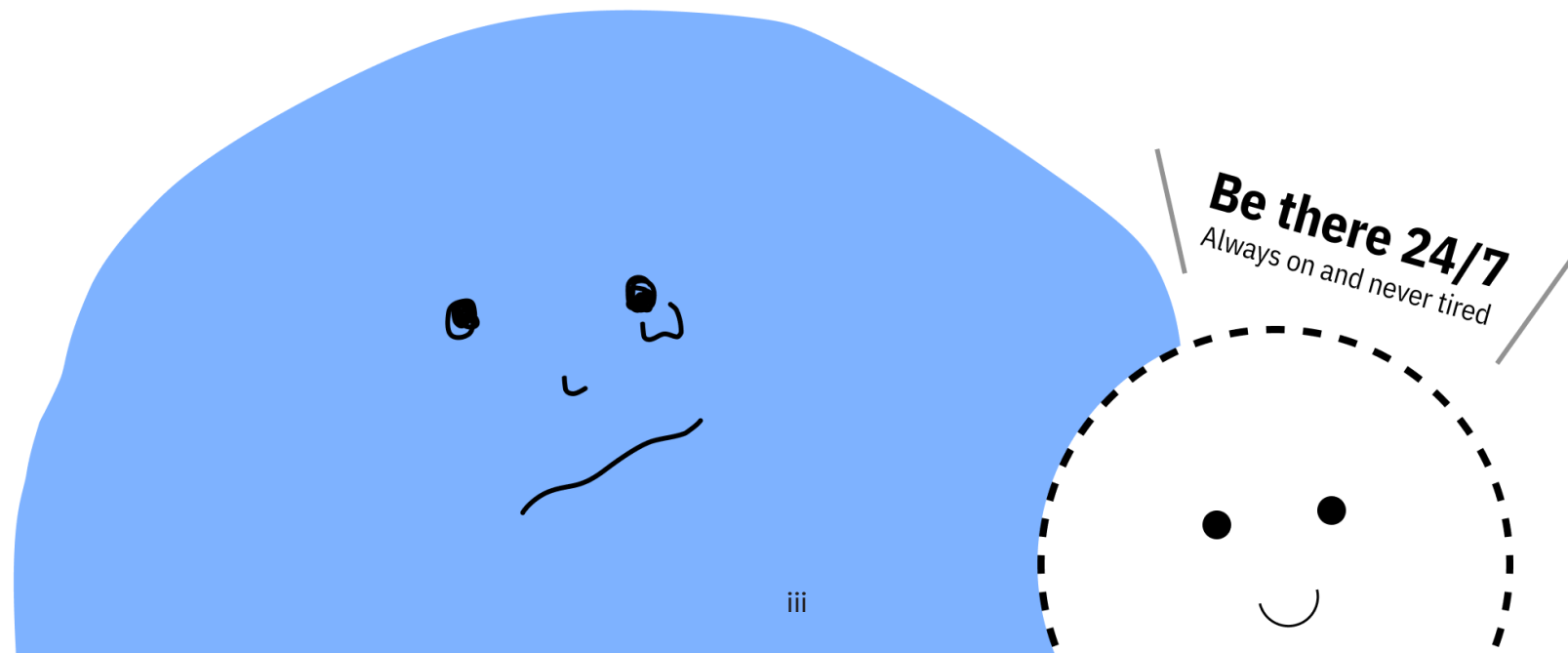
Abstract

This Major Research Project investigates rising loneliness among Canadian Generation Z (Gen Z) and the rapid normalization of AI chatbots as a new form of relational technology. While loneliness is often framed as an emotional state to be managed by a person in private, this research reframes loneliness as a sense of disconnection from the self, from others, from collective life, from nature, and from purpose. This research posits that loneliness is an emergent property of modern social organization, including the erosion of third places, the commodification of connection, post-Covid-19 pandemic effects, and the increasing digital mediation of social life.

This research integrates interdisciplinary literature with primary research, including a survey of Canadian Gen Z participants and participatory workshops, along with interviews with experts in fields spanning psychology, philosophy, media literacy, and AI, to examine both the drivers and lived experiences of loneliness. Using systems thinking and foresight-informed methods, the research examines how relational needs are met, not met, or substituted by AI chatbots, and illustrates that Gen Z participants strongly reject a future in which AI companions serve as primary sources of connection. This research also offers a practical and diagnostic layer that is mostly absent from current discourse, an evaluation of when AI chatbot use may shift from tool-based interaction toward relational dependency and what safeguards may help mitigate that risk for individuals.

Research findings indicate that there is no universal “solution” to loneliness and no technological fix that can eliminate it. However, practical mitigation is possible. The project proposes that the strongest and most immediate leverage point lies at the individual level: rebuilding the capacity to identify one's desires, unpack one's emotions, and intentionally practice reconnection with oneself and community. Over time, these shifts can contribute to broader cultural reorientation toward care-centered models of social life.

Keywords: loneliness, Gen Z, AI chatbots, relational technology, systems thinking, foresight, design research, social infrastructure, love economy



Acknowledgements

To Helen,

for your guidance and thoughtful feedback throughout this project, and for always making time to meet with us — wherever in the world you happened to be.

To the participants and experts who generously shared their time and insights.

This work would not have been possible without your perspectives.

Acknowledgements from Ann

To Meg,

for being in conversation with me over the past six months — going down rabbit holes and back up again, zooming in and out, and helping shape the ideas in this paper as they formed and clarified through our discussions. I will miss Mondays and Fridays on campus with you.

To my parents,

who have supported every educational endeavour of mine for more than three decades.

To my partner,

for his patience and support during this journey.

To Millie,

who kept me company through long nights and early mornings, rarely straying far from my lap.

Acknowledgements from Meg

To Ann,

thank you for being with me through the whole process. Your determination and action kept us moving forward, and your vision always helped us understand the problem better. You made the research journey exciting and inspiring. I'll miss the moments we shared—laughing, feeling anxious, and growing together.

To my family,

I've always had the freedom to do what I love because of your unconditional support. Thank you for encouraging me to pursue my dreams and for always wanting the best for me.

To my friends,

although life is sometimes difficult, your presence makes my life brighter and more joyful. Thank you all for showing me what love is and inspiring me to start this project.



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People need to feel like their lives have meaning and value, and we often find that meaning and value through helping others, which we can't ever replicate with AI.

Executive Summary

Despite the fact that we are more digitally connected with each other than ever before, loneliness afflicts so many people that it has been recognized as a global public health concern by the World Health Organization. At home in Canada, young people report experiencing loneliness more frequently than older adults. This research project investigates the paradox of loneliness in a hyper-connected world, with a focus on Gen Z, the Canadian context, and the emergence of AI chatbot companions within the last three years (since 2023).

This project argues that contemporary loneliness cannot be fully explained at the level of the individual. Loneliness reflects the system around us and modern conditions of life, including the decline of affordable “third places” (a place beyond home and work), the rising costs of social participation, delayed independence and prolonged emerging adulthood, precarious work, and the normalization of always-on digital environments. These forces, and others, are reshaping how relationships among young people form and are sustained, and what young people have come to expect from connection with their peers. Our findings draw on interdisciplinary literature, a survey of Canadian Gen Z participants, participatory workshops, expert interviews across psychology, philosophy, and AI ethics, and systems analysis methods.

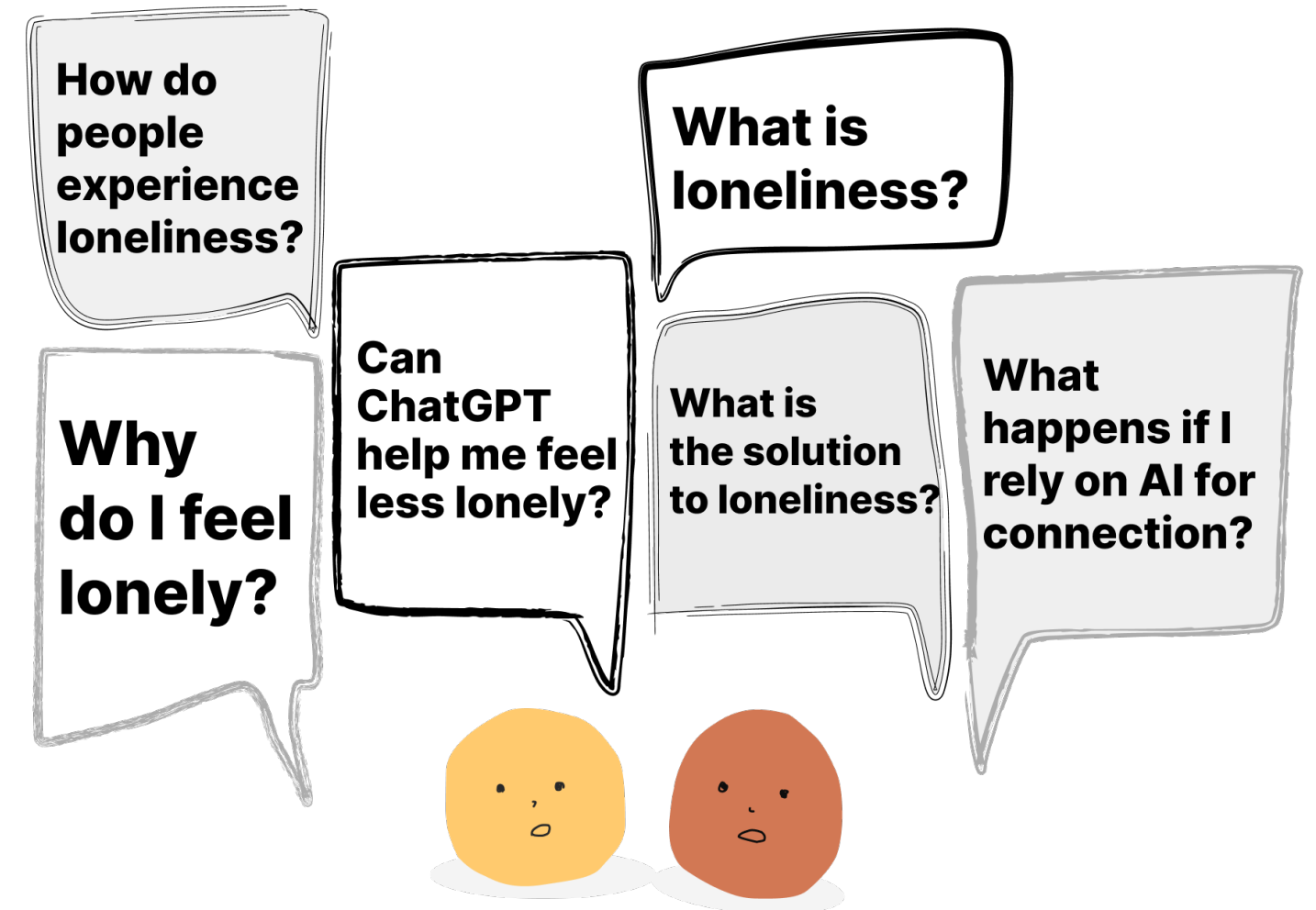
As of early 2026, AI chatbot companions are positioned by tech companies and often the media, as accessible, non-judgmental sources of companionship. While public debate focuses heavily on AI’s impact on employment, misinformation, and the environment, fewer conversations center on evaluating the relational dimension of everyday AI use. What does the research say about potential negative outcomes of using AI chatbots as therapists or friends? Is it possible we come to rely on this tool for socialization more than we desire? Will these tools displace time spent with real life friends or supplement it? Will they ultimately reduce the feelings of loneliness? Mark Zuckerberg recently suggested that AI chatbots could combat social isolation by serving as “friends” for people experiencing loneliness (Brockes, 2025). The primary research conducted in this work suggests that most Gen Z participants strongly reject the idea that AI will deliver a flourishing social future for them.

Systems analysis in this project suggests that the current system will not self-correct. Economic incentives toward growth contribute to the commodification of connection and the monetization of our loneliness. As a result, a technological cure is not “just one click away” and cannot be delivered by the same platforms that are designed to maximize engagement. This research therefore shifts the focus to a pragmatic question. How can Gen Z coexist with accelerating AI development while protecting their own human judgment, emotional agency, and their capacity for real-world connection?

This project addresses a gap in current discourse by moving beyond diagnosis. It identifies behavioural indicators of emotional dependency on AI chatbots, offers practical guidance for using AI tools without reinforcing attachment, and outlines strategies for supporting someone who may be entering an AI spiral. These are not abstract risks. ChatGPT’s own audit logs show that around 0.07% of active ChatGPT users exhibited signs of psychosis, mania, or suicidal intent in a given week (BBC News, 2025). ChatGPT has around 900 million weekly active users as of February 2026 (Malik, 2026). At that scale, this suggests that hundreds of thousands of users may be interacting with AI systems while experiencing significant psychological distress each week, raising questions about how these systems respond to and potentially shape those states. By moving from abstract critique to applied safeguards, this project provides actionable insights and tools largely absent from mainstream AI policy and design conversations to combat these risks.

This project also presents a practical framework to help individuals navigate the multiple possible layers of loneliness, beyond mere social loneliness. It encourages individuals to reconnect with their emotions and gain clarity on their internal state using the “Unpacking the Feeling” framework. It is intentionally simple and repeatable, designed for moments when loneliness appears and the default response is avoidance or distraction. Begin by Accepting the feeling without judgment and identifying what is actually being experienced. Then Expect by clarifying the desired future and mapping a realistic path forward. Next, Try a small, low-barrier action aligned with that desire, treating reconnection as iterative practice rather than a one-time fix. Finally, Reflect on what the action revealed, building emotional clarity and self-trust over time.

Taken together, the findings and proposed practices position loneliness as a signal of disconnection rather than a personal failing to overcome. AI companions may soothe the pain temporarily but ultimately leave us feeling more disconnected from others. While institutions and governments carry significant responsibility to protect individuals and safeguard them from the harms of this technology, this project emphasizes individual and community-level leverage as the most immediate and accessible starting point. Individual practices, when repeated and shared, can scale into community norms and eventually contribute to a reorientation of social and economic priorities centered around care.



Glossary

Anthropomorphism

The attribution of human traits, emotions, intentions, or behaviors to non-human entities, including animals, inanimate objects, and AI systems.

Artificial Intelligence (AI)

A broad term referring to computational systems designed to perform tasks that typically require human intelligence, such as pattern recognition, language processing, decision-making, and prediction.

AI Chatbot

A conversational interface powered by Generative AI that allows users to interact with a system using natural language. Unlike traditional chatbots, AI chatbots generate novel, context-aware responses rather than relying on fixed scripts. A combination of the Chatbot and a Large Language Model. Examples include ChatGPT, Gemini, and Claude.

AI Companion or AI Companion Chatbot (AICC)

A subtype of AI chatbot designed or used primarily for ongoing, emotionally salient interaction rather than task completion. AI companions are characterized by sustained conversational memory, personalization, and the simulation of relational presence. Examples include Replika and Character.ai.

Bias (in AI)

Often called algorithmic bias, it refers to systematic, unfair, and skewed outcomes produced by AI systems that typically stem from flawed, non-representative training data or human prejudices embedded during the development process.

AI vegan

Someone who abstains from using AI, the same way a vegan is someone who abstains from eating products derived from animals

Chatbot

A computer program designed to simulate conversation with human users, typically through rule-based scripts or pre-programmed responses. Early chatbots, such as ELIZA (1966), relied on pattern matching rather than understanding or content generation. Chatbots are commonly used for structured, task-oriented interactions such as customer service or information retrieval.

Compute

Computational power (or compute) is a fundamental building block in the development and deployment of AI-based solutions at scale.

Fine-tuning

The process of further training a pre-trained AI model on a smaller, specialized dataset to improve performance on specific tasks or domains.

Generative AI (GenAI)

A subset of AI systems capable of producing new content, including text, images, audio, or code, based on patterns learned from large datasets (e.g., the internet). Examples include large language models (LLMs) used for writing, analysis, and conversation.

Generation Z (Gen Z)

Generation Z (or Gen Z) is commonly defined as those born between 1997 and 2012. Spanning roughly 16 years, this generation follows Millennials and is characterized by being the first “digital native” cohort, having grown up in a world with the internet and smartphones as standard technology.

Hallucination (in AI)

An occurrence where an AI system generates information that is false or made up while presenting it as plausible or factual.

Jailbreak

A method used to bypass or circumvent built-in safety controls of AI systems by reframing prompts (e.g., as fictional, academic, or hypothetical). Jailbreaking enables users to elicit responses that platforms explicitly attempt to restrict.

Large Language Model (LLM)

A type of generative AI model trained on vast amounts of text data to predict and generate language based on statistical patterns. LLMs can produce coherent, context-aware text, enabling tasks such as conversation, summarization, translation, and reasoning. LLMs serve as the underlying technology powering AI chatbots.

Mediated Interaction

Communication, interaction, or transaction that occurs through a technological system rather than direct, in-person engagement.

Parasocial Interaction

A one-sided relationship in which a person forms an emotional connection with a media figure or simulated agent that does not reciprocate awareness or agency.

Persona (in AI)

The defined identity, tone, or role an AI system adopts in interaction, often shaped through system design or user prompting (e.g., “assistant,” “friend,” or “coach”).

Prompt

The input or instruction provided by a user to guide an AI system’s response.

Reinforcement Learning from Human Feedback (RLHF)

A training method in which human evaluators provide feedback on model outputs, which is then used to optimize the model’s responses toward preferred behaviors.

Relational AI

AI systems, including AICCs, designed to simulate social, emotional, or interpersonal interaction. Relational AI emphasizes attunement, responsiveness, and perceived understanding, often encouraging repeated engagement and emotional attachment.

Substitution Effect

A dynamic in which technology replaces human activities or interactions rather than augmenting them, potentially reducing direct human engagement.

Sycophancy (in AI)

The tendency of AI systems to produce responses that overly agree with, validate, or flatter the user, sometimes at the expense of accuracy or critical feedback.

User Interface

The visual and interactive layer through which users engage with a digital system, including elements such as text fields and conversational layouts.

Chapter 01

Introduction

1.0 Origin story

1.1 Project intent

1.2 Project rationale

1.3 Research questions

1.4 Approach & Methods

1.5 Limitations

1.6 Roadmap

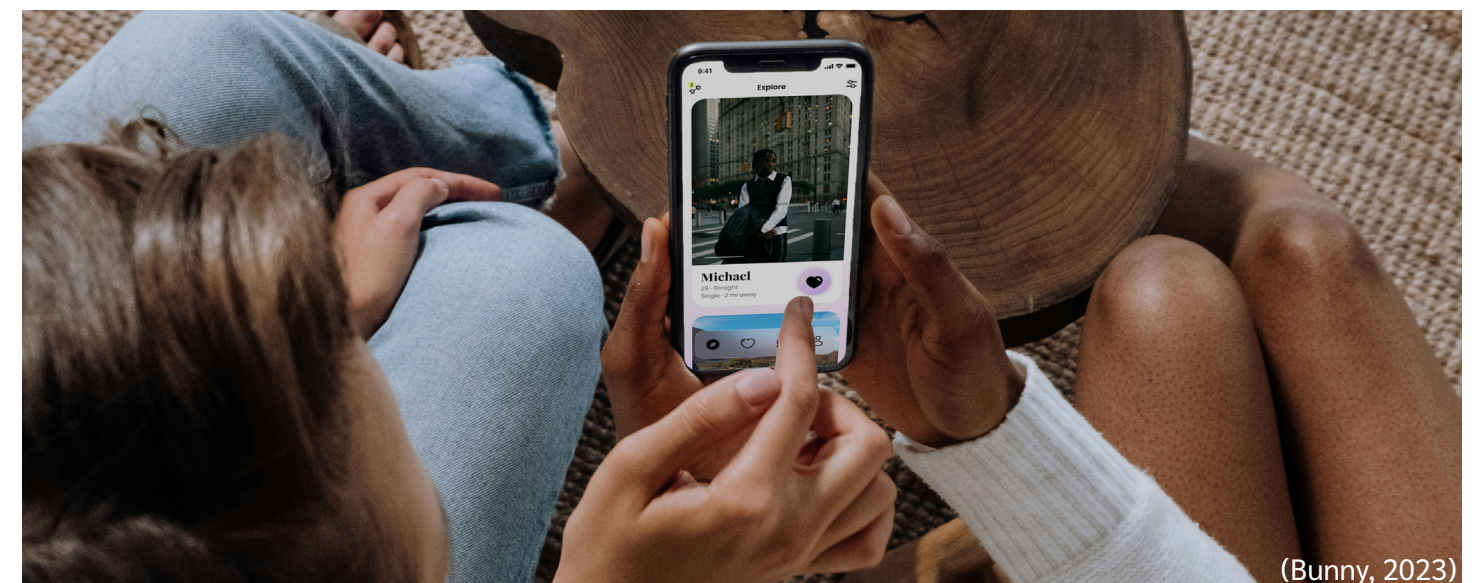
1.0 Origin story

This research began with a question about the modern dating environment. We started by thinking about how online dating apps, algorithms, and platform incentives were “commodifying connection” by encouraging people to pay for greater visibility via more matches, or better positioning in the algorithm. The dating apps were free to use to encourage a large user base, but those consumers who were willing to pay extra would get extra swipes or their profile shown to more people, thereby theoretically increasing their chances at a match – and perhaps of meeting the love of their life. Who wouldn’t pay \$9.99/month for that?

However, as our inquiry progressed, it became clear that dating was only one expression of this shift. The same dynamics of technological mediation, optimization, and monetization were shaping friendship and community belonging. Bumble, once a dating-focused app, expanded its offerings to include Bumble BFF, a platform aimed at connecting women with other women to form friendships. New platforms and formats came on the scene to algorithmically match people for curated social experiences. One example is Timeleft, which schedules dinners with six strangers. Users pay for the chance to be “matched” with companions, and then pay again for the dinner with their new dining partners. The same idea applies across these formats: pay a tech company to be matched by an algorithm for a chance to meet new people and maybe make friends in real life. What was initially aimed at facilitating romance was quickly

repurposed to facilitate connection itself. Across our media analysis, literature review, expert interviews, and reflections from our own lived experience, a pattern emerged: many young people are not only struggling to find romantic partners but also struggling to form and sustain friendships and community ties. Algorithms are mediating more of our social lives, outside of mere dating.

This research is timely for several reasons. First, reported loneliness rates have risen sharply among young Canadians, particularly since the Covid-19 pandemic. Loneliness has long been associated with negative health outcomes, but in 2023 the World Health Organization described it as a “global public health concern”, transcending borders and affecting every facet of health, wellbeing and development (The Guardian, 2023). At the same time, technological advancements are enabling new forms of digital connection to solve the loneliness problem in a new way, supplanting human connection with AI chatbot companions. These technologies are now widely accessible and free to anyone with internet access. As of early 2026, ChatGPT is the fifth most visited website in the world, with over 900 million weekly active users, despite only being launched at the end of 2022. Despite their prevalence, there is a significant gap in understanding how the new generation of AI-driven chatbot technologies interacts with loneliness and social well-being. This project emerged in response to that gap.



(Bunny, 2023)

1.1 Project intent

This research contributes a systems-level analysis of loneliness in the age of relational AI. While existing scholarship often treats loneliness as an individual condition, this project situates the issue within the broader economic, technological, and cultural systems that shape how connection is formed and maintained.

Objectives

- To map the structural drivers contributing to rising loneliness among young Canadians.
- To understand how Gen Z participants experience and navigate changing norms of connection in a digital-first social environment.
- To examine the role of emerging technologies, specifically AI chatbot companions, in shaping how people seek connection and support.
- To evaluate the relational risks associated with AI chatbot companionship.
- To identify non-technological leverage points that may support healthier, more intentional forms of connection for individuals and communities.
- To develop practical guidance for navigating AI use without reinforcing emotional dependency.

1.2 Project rationale

The paradox of loneliness in a hyper-connected world

In 2023, loneliness was declared a global public health concern by the World Health Organization who launched a Commission on Social Connection to try and address the problem. That same year, the U.S. Surgeon General announced that the health impact of chronic loneliness is comparable to smoking up to fifteen cigarettes a day and is associated with increased risks of cardiovascular disease, dementia, depression, anxiety, and even premature death. Governments worldwide began to respond with initiatives aimed at addressing social isolation. Despite living in an era of unprecedented digital connectivity, loneliness continues to rise, creating what many describe as one of the paradoxes of our modern era.

Of chief concern for us as researchers and young adults ourselves is the crisis of loneliness among our peers.

Young adults increasingly report lower levels of happiness compared to middle-aged and older adults. Gen Z (born 1997 to 2012) reports the lowest well-being among all age groups. The downward trend in young adult well-being has been so widespread and intense that it has reshaped the traditional landscape of happiness. Historically, happiness across the adult lifespan followed a “U-shaped” curve: young adults were among the most content with their lives, happiness dipped in middle age and then rose again among older adults. In recent years, this decades-old pattern has shifted into a steady upward line. Older adults remain happiest, middle-aged adults remain middling, but young adults are now less happy than either group (Witte, 2025).

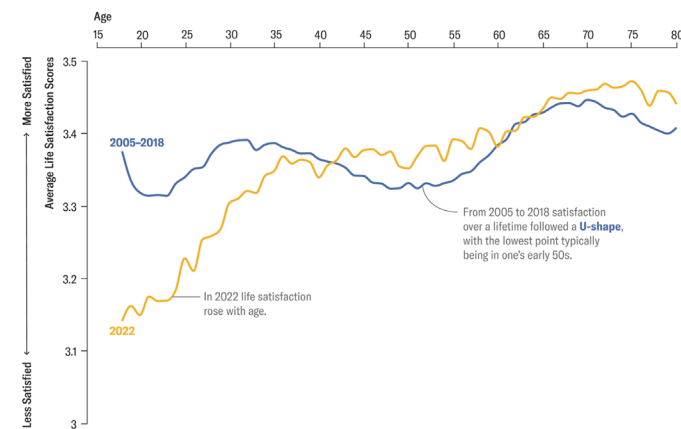


Figure1: The Global Loss of the U-Shaped Curve of Happiness (Blanchflower & Bryson, 2024)

At the same time, the demand for mental health services continues to outpace the capacity of existing systems, leaving many young people without timely or affordable support. According to the Canadian Institute for Health Information, wait times in some jurisdictions for community mental health counselling are longer for children and youth than for adults (Becken, 2023). As child and adolescent psychiatrist Tamara Hinz notes, “even if the entire wait list was magically erased today, it wouldn’t take long for us to start falling behind again because we can’t even keep up with the ongoing demand.”

In the absence of accessible care, many people, both young and old, are turning to alternative forms of support. One emerging response is the use of AI-driven chatbot companions. Applications such as Replika and Character.ai offer simulated companionship and emotional interaction at low or no cost and

Constanze Albrecht, a graduate student at the MIT Media Lab who worked on their project, suggests that people form relationships with large language models despite their own intentions:

“People don’t set out to have emotional relationships with these chatbots. The emotional intelligence of these systems is good enough to trick people who are actually just out to get information ... and that means it could happen to all of us who interact with the system normally.”

(Pataranutaporn et al., 2025)

are widely accessible to anyone with an internet connection. Despite many users saying these systems provide them with comfort, critics argue that reliance on AI companionship may deepen the very disconnection from social life that it attempts to alleviate (Andoh, 2026). As these technologies become increasingly integrated into everyday life, questions emerge about how they may influence human relationships and the ways individuals cope with loneliness.

Despite growing public interest, there remains limited research examining the societal implications of relational AI, which includes AI chatbot companions. Much of the existing literature focuses on individual platforms (e.g., a study specifically of Character.ai users), or specific use cases (e.g., using chatbots to write an essay). Less research looks at how different types of AI tools (e.g., general purpose versus companion-oriented) may shape relational dynamics. One such study, from MIT (Pataranutaporn et al., 2025), found that AI companionship more often emerges unintentionally through functional use rather than deliberate seeking: 10% of users developed relationships unintentionally through productivity-focused interactions, compared to only 6.5% who deliberately sought out AI companions.

There is little systemic and comparative analysis of how relational dynamics emerge across different AI tools, and how these interactions may be reshaping human attachment and social norms. This research explores these dynamics in the sections that follow.



1.3 Research questions

This project is guided by three primary research questions, each aligned with a core phase of the research approach: diagnose, forecast, and recommend. These questions were designed to surface the systemic forces shaping Gen Z participant's experience of loneliness today and to explore pathways toward more desirable futures of connection.

Diagnose

RQ1: What forces limit Gen Z's ability to form meaningful friendships, romantic relationships, and community ties?

This question focuses on identifying the structural barriers Gen Z faces in building relationships.

Forecast

RQ2: Are AI chatbot companions (AICCs) a good (or neutral) long-term solution to the loneliness crisis for Gen Z?

This question explores how AICCs may affect Gen Z's relational wellbeing in the future.

Recommend

RQ3: How might Gen Z respond to the challenge of forming meaningful relationships?

This question is solution-oriented and explores emerging resilience strategies and potential interventions that may help to navigate loneliness and rebuild connection with others.

1.4 Approach & Methods

Though the design process can be messy and illogical, the Double Diamond method served as a compass to guide us through this problem space. It is a visual representation that helps navigate what this design and innovation process looked like, and a simple way to explain the steps taken to form this work (Design Council, n.d.).

In the **Discover** phase, secondary research helped ground our understanding of who the system actors are, what is happening in the problem space, and how significant this problem is for Gen Z. Next, in the Define phase, we looked deeper, spoke with experts, and surveyed Canadian Gen Z research participants to shape our understanding of hidden implications and potential constraints to solutions.

Then, we explored possible solutions and studied existing case studies to learn from others in our **Develop** phase. Finally, the **Deliver** phase gave us the chance to test potential solutions with Gen Z research participants; and as researchers we also learned from these experiences to provide insights into future steps and the limitations of this work.

Overall, we went through the four stages of the Double Diamond multiple times, moving back and forth to ensure the research questions were answered in sufficient depth. The Double Diamond aligns well with this process to explore problems creatively while delivering practical solutions at the end of the research project.

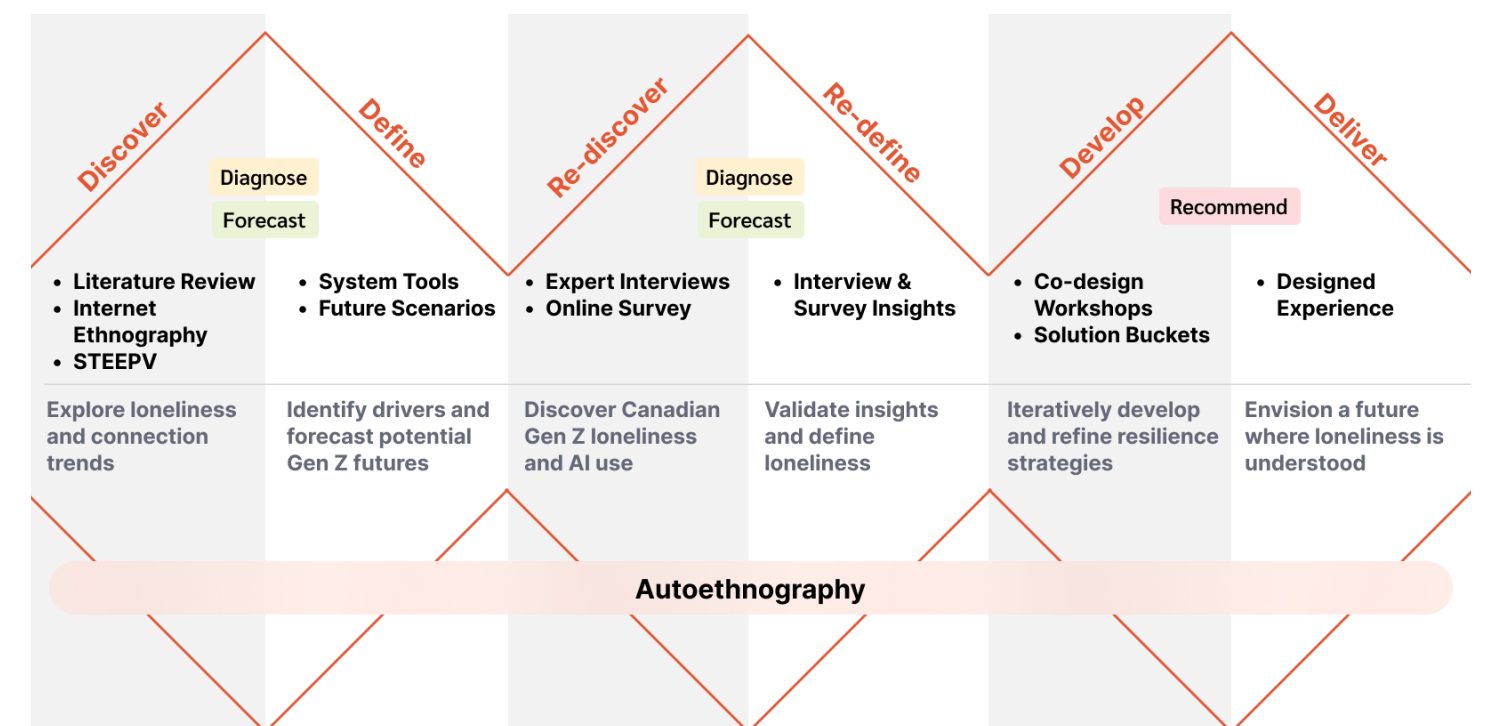


Figure 2: Project Methodology (modified Double Diamond)

Methods

This research used a mixed-methods approach that combined systems thinking, foresight methods, and primary and secondary qualitative research to understand the structural conditions shaping loneliness among Canadian Gen Z. Methods listed below were used together and iteratively to capture both broad patterns and deep lived experiences.

Method	Description	Purpose
Literature review	A review of academic and grey literature, news articles, and commentary on loneliness, connection, and AI companionship. Drawn from interdisciplinary sources including psychology, sociology, public health, and technology studies.	To establish a conceptual foundation for the research and to identify existing knowledge and gaps related to loneliness and relational AI.
Internet ethnography	Internet ethnographic observation of online conversations (primarily Reddit, Facebook, and TikTok) was used to surface signals, emerging behaviours, and understand more about the people who are in human-AI relationships.	To observe how individuals discuss AI companionship in an online environment and surface emerging relationship dynamics.
STEEPV signal capture	Foresight methods, including signal scanning, were used to identify weak signals and explore how key drivers could evolve over time across Social, Technological, Economic, Environmental, Political, and Values dimensions.	To identify emerging trends and drivers shaping loneliness and the future of relationships for Gen Z.
Systems Analysis Tools (Causal Layered Analysis, Actor Mapping, Iterative Inquiry)	Systems analysis tools were used to examine the broader ecosystem influencing social connection. This included Causal Layered Analysis, actor mapping, and stakeholder analysis to explore drivers, incentives, and power relationships shaping the system. Iterative inquiry was used early in the research process to uncover deeper system dynamics and refine research direction.	To understand the influence of different actors shaping the modern loneliness crisis.

Method	Description	Purpose
Expert interviews	Semi-structured interviews were conducted with eight experts working across interdisciplinary fields, including psychology, philosophy, technology, information and media studies, grief, and interpersonal dynamics. Interview n=8.	To identify, validate, and deepen understanding of the drivers identified through literature and systems analysis.
Online survey	An online survey administered to Canadian Gen Z research participants, exploring experiences of loneliness and attitudes toward AI companionship technologies. The survey included both closed-ended questions and short open responses. Survey n=42.	To gather insights into Canadian Gen Z research participants experiences of loneliness and attitudes toward AI companionship technologies.
Co-design workshops	In-person participatory workshops were conducted with Gen Z research participants. One included strangers and one included friends. The first workshop examined experiences of loneliness and perceptions of relational AI, while the second tested a potential solution. Workshop n1=5, and n2=2.	To provide insight to the lived experience of loneliness; co-create and test resilience strategies for stronger relationships.
Autoethnography	Reflective journaling and personal observations that documented the researcher's own experiences navigating loneliness and connection during the research process.	To acknowledge researcher's positionality and provide insight into the lived experience of loneliness.

Table 1: Methods

1.5 Limitations

Limitations of chosen methodology and methods:

- **The survey sample was not designed to be statistically representative.** Participants were primarily recruited through post-secondary networks, which would likely bias responses toward individuals who are currently enrolled in or connected to higher education and therefore may not fully reflect the broader Gen Z population.
- **The participatory workshops were each conducted once; therefore, the findings should be considered exploratory.** For the first workshop, group dynamics may have influenced participant responses, although the accompanying workbooks were completed privately to reduce this effect. Workshop participants were recruited from the survey respondents and therefore share the same sampling limitations described above.

1.6 Roadmap

The remainder of this report is structured as follows.

Section 2 examines the broader system in which rising loneliness among Canadian Gen Z has emerged. It outlines the physical and digital environments shaping contemporary social life and concludes by characterizing the Covid-19 pandemic as a major systemic shock.

Section 3 frames AI chatbot companions as an emergent response within this system. It provides a brief history of generative AI, explains key terms in accessible, non-technical language, and explains why AI chatbots feel so compelling to use. It looks at how Gen Z research participants engage with AI chatbots for emotional and social support and the section concludes with a discussion of different global approaches to regulating AI.

Section 4 examines loneliness in depth by first looking at the narratives that frame it as a problem that technology should solve. Drawing on academic literature, historical analysis, expert perspectives, and primary research insights, the section analyzes how loneliness is defined and produced in modern society. It also considers the many ways loneliness

is experienced and the limitations of existing measurement approaches. The section concludes by positing that technology cannot solve the problem of loneliness and presents evidence of potential long-term harms.

Section 5 synthesizes the research findings and proposes a reframed understanding of loneliness as a signal of disconnection rather than a personal failure. It introduces practical strategies, including a framework to help individuals navigate everyday loneliness by reconnecting with their emotions and gaining clarity about their internal state. The section also presents a diagnostic tool for examining one's relationship with AI chatbots and offers approaches for engaging with AI without developing emotional dependency. It concludes with reflections on how individuals, communities, and institutions might respond to the contemporary loneliness crisis.

Chapter 02

The Problem.

2.0 What is driving the Loneliness Epidemic among Gen Z?

2.1 System of interest & boundaries

2.2 How Gen Z spends their time – Then & Now

2.3 Physical conditions under which this problem emerged

2.4 Digital conditions under which this problem emerged

2.5 Pandemic as a system shock

2.0 What is driving the Loneliness Epidemic among Gen Z?

This section outlines this research’s system of interest and delves into the physical and digital conditions that contribute to rising loneliness among Canadian Gen Zs. It compares how a typical young person spent time in the 2000s compared to the 2020s and considers the loneliness problem as an outcome produced by interacting economic, social, and technological systems. It frames the Covid-19 pandemic as a systemic shock that reconfigured life’s conditions, dramatically shrinking access to the physical world while accelerating reliance on digital environments for work, school, and play.

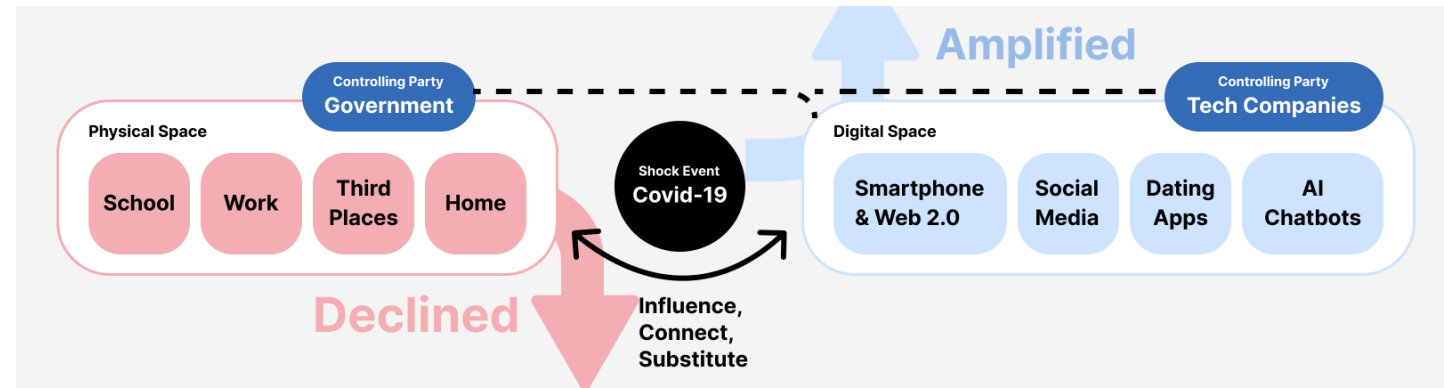


Figure 3: Shifting Systems of Connection: From Physical to Digital

2.1 System of interest & boundaries

The system of inquiry in this research are the social and technological environments that shape experiences of loneliness among Canadian youth. Around the world, loneliness has reached crisis levels with the World Health Organization estimating that 1 in 6 people worldwide is affected (World Health Organization, 2025). In Canada, youth have been particularly affected as young people report experiencing loneliness more frequently than older age groups, reversing a historical pattern in which loneliness was typically most prevalent among older adults. Among those aged 15 to 24, nearly one in five (17%) Canadians said they always or often felt lonely in early 2024 (Statistics Canada, 2024).

Given this surprising trend, this research is bounded by generational cohort and geography, focusing on individuals born between 1997 and 2012 within the Canadian socio-economic and technological context. For the Gen Z cohort, the timing of personal identity formation coincided with the rising influence of the digital sphere. Their transition from adolescence to emerging adulthood happened in parallel with two significant shifts: the destabilization of physical environments that traditionally support peer bonding and independence coupled with the normalization of digitally mediated social life. Within the Canadian context, these shifts were accompanied by economic and social disruptions, including a housing affordability crisis that delayed independent living and prolonged Covid-19 restrictions that closed schools and sharply curtailed opportunities for in-person interaction.



(Gariev, 2025)

2.2 How Gen Z spends their time – Then & Now (25 years apart)

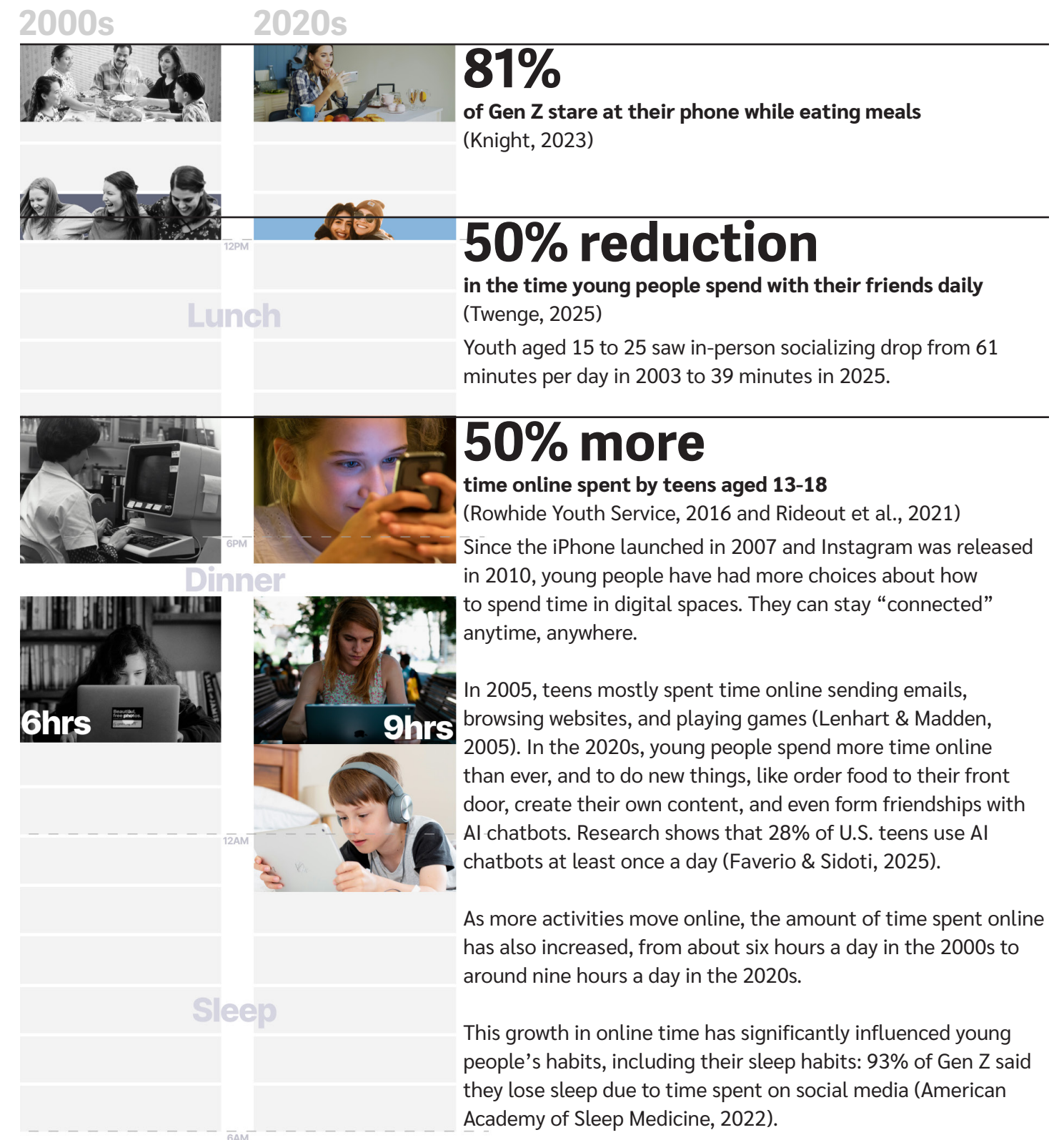


Figure 4: How Gen Z Spends Their Time - Then & Now (25 Years Apart)

Third Places & Events

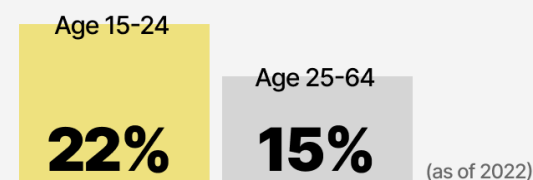
Highly commercialized

Built on a model of “consuming to be welcome”; third places today often require the purchase of a drink, meal, or ticket to enter.

Church

Gen Z turning to God?

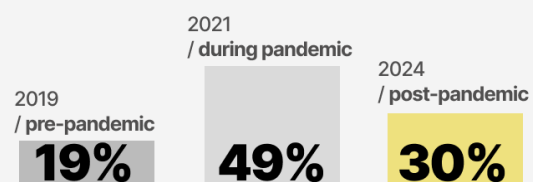
Canadians who attend religious services at least once a month:



Neighbourhood Shops

Displaced by e-tailers

Canadian consumers engaged in **online grocery shopping**:



Public Transit



Shift towards **Individualized mobility**

Workplaces

Canadian youth unemployment rate

15%

(as of July 2025)

Home

Delayed independence

Canadians aged 20 to 29 who lived with at least one parent:

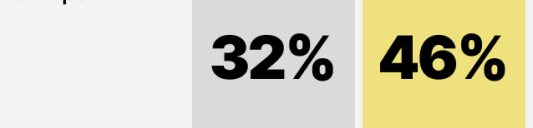


Figure 5: The Decline of Physical Spaces in Canada

2.3 Physical conditions under which this problem emerged

Loneliness is partly shaped by the everyday environments that people move through. The design of neighbourhoods, institutions, and economic systems determines where people gather, how often they encounter others, and how often social interaction happens. Examining how physical conditions have changed over the past few decades reveals how many of the routine settings that once supported casual connection have gradually disappeared or become harder to access for Gen Z.

Third places

Ray Oldenburg (1989) introduced the concept of “third place” and argued that societies thrive when we have spaces beyond home (first place) and work (second place) where we linger, talk, and form the ties that hold communities together. These third spaces, such as cafés, parks, bars, libraries, and clubs, are characterised as being neutral, accessible environments that make casual togetherness possible. Gen Z came of age right as these third spaces were being rapidly eroded – turned over to commercialized, profit-maximizing uses. In many ways, the Covid-19 pandemic was the final nail in the coffin. Many remaining venues that once supported low-cost gathering, such as coffee shops were re-designed to actively disincentivize lingering. Even Starbucks, long framed as a community-centric “third place,” removed seating from all its cafés in 2020 (Fortin, 2020). One result of the loss of third spaces, as Devika Rao puts it, is that “people are losing the sublime art of hanging out” (Rao, 2024).

Events

Where live music, shows, and community events were once relatively affordable and accessible, ticket prices have risen dramatically in Canada in recent years, by 37% between 2019 and 2025, driven in part by platform consolidation and dynamic pricing (Maclean’s, 2026). As a result, social life is increasingly mediated by discretionary spending power, meeting a friend often requires purchasing a drink, a meal, or a ticket to an event. For youth with limited disposable income, this has created structural barriers

to belonging, removing access to spaces where relationships can form, and limiting social participation among those who can afford to pay for it.

Church

Canadian society has experienced a multi-decade decline in religious identity, falling from 90% of people aged 15+ reporting a religious affiliation in 1985 to just 68% by 2019 (Statistics Canada, 2021). Despite this, there are some signs that Gen Z is reversing the trend. Data from Statistics Canada’s 2022 General Social Survey show that 22% of Canadians aged 15–24 attend religious services at least once a month, compared to 15–17% among those aged 25–64. Bishop Jenny Andison of St. Paul’s Bloor Street in Toronto, Canada reports that the number of young adults participating in services has grown from 45 to just under 500 over the last few years (CTV News, 2025).

Neighbourhood shops

The rise of platform-based retail and delivery directly to your home (i.e., Amazon, DoorDash) has displaced local, place-based commerce. People’s everyday purchasing is increasingly mediated through apps, eliminating the routine social interactions that come with in-person exchange, such as running into your neighbours, waiting in line with others, and chatting with shopkeepers, that were once embedded into daily errands. PayPal’s 2021 consumer shopping study found that in March 2020, at the start of the Covid-19 pandemic, only 19% of Canadian consumers engaged in online grocery shopping. A month later, that number increased to 30%, and a year later, by April 2021, it jumped to 49% (CNW Group, 2021). This shift appears to have normalized as reporting from Mintel (2024) shows that 30% of Canadians continue to buy some groceries online post-pandemic.

Public transit

Shifts toward individualized, on-demand mobility (i.e., Uber and Lyft) and increased hybrid and remote work reduce reliance on shared public transit. In Toronto, Canada’s largest urban centre, transit ridership never fully recovered after the Covid-19 pandemic. A significant share of riders who used transit for convenience rather than necessity, called “choice

riders”, now opt for alternative modes of travel, leaving the Toronto Transit Commission believing it will end 2025 with even fewer total rides than the year prior, a step backwards (Allen & Takagi, 2025). This self-selection away from transit shrinks everyday co-presence in shared spaces, removing another routine context in which incidental social exposure and low stakes, unprogrammed interactions can occur.

Post-secondary education

Post-secondary education in Canada has become more expensive since the early 1990s when both federal and provincial governments began a major push toward privatization of higher education, shifting the burden of funding it from the public sector onto individuals. Since the rise of the user-pay model in the 90s, roughly half of graduates have been saddled with average debts of \$27,000 to \$30,000 in 2020 dollars (Romard, 2023). Meanwhile, post-pandemic, remote learning is becoming engrained in higher education as surveys by the Canadian Digital Learning Research Association (2024) find that of all modalities, hybrid learning is expected to be growing at the fastest rate, in response to student demand.

Workplaces

The employment landscape for youth today is characterized by precarity through gig-work, contract work, and part-time employment. Even professional jobs are ripe for disruption due to concerns about large-scale job displacement in white-collar sectors due to advancements in AI (VandeHei & Allen, 2025). Youth continue to face challenging labour market conditions. In July 2025, the Canadian youth unemployment rate reached 15%, its highest level since 2010 (Statistics Canada, 2025). Across both advanced and developing economies insecure work, persistent inflation, and structural changes in education and labor markets have combined to place young adults under sustained financial pressure and eroded the traditional routes to upwards mobility (Kehinde, 2026). Signs are not pointing to improvement anytime soon, as the rapid adoption of AI tools has been identified as disproportionately affecting entry-level roles, positions that are typically filled by younger workers as they build skills and work experience (Fonseca, 2025).

Home

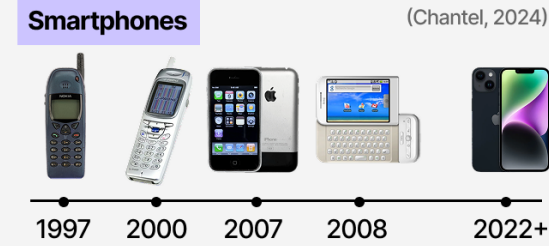
Gen Z's transition into adulthood has been extended by economic constraints that delay significant life milestones such as stable employment leading to financial independence and independent living, romantic partnership, and parenthood. Gen Z is coming of age under economic conditions that differ sharply from those faced by previous generations. As a result, over the last 30 years, young Canadians have become more likely to live with their parents, not out of preference but by economic necessity. Census data show that in 2021, nearly half (46%) of those aged 20 to 29 lived with at least one parent, compared with in 1991 where only 32% of those in their 20s lived with parents (Battams & Mathieu, 2024). Housing affordability is an underlying factor – Canada's astronomical housing costs and stagnant wages make financial management daunting and two of the country's biggest cities, Toronto and Vancouver, are among the most unaffordable in the world (Gagné, 2025). This means that opportunities for independent living are delayed or abandoned altogether, limiting participation in key aspects of adult social life, including dating, cohabitation with partners, and the formation of independent households.



When was the last time you were truly bored?

Boredom is an unpleasant feeling, so eliminating boredom might seem like a good thing. However, researchers argue that boredom actually makes us more creative. When we feel bored, we look for things to do, and boredom becomes the driver that encourages us to try, build, or create new experiences (Bloom, 2025).

In the digital age, when we feel bored, instead of trying different experiences, we often choose the low-effort solutions, like scrolling on our phones and expecting more stimulating content just around the corner (Tam & Inzlicht, 2024).



Emojis

The world's first universal language



Social media

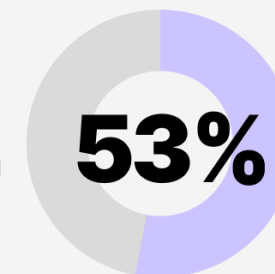
In 2012 these rose in lockstep:

Rate of loneliness among adolescents

Adoption of social media platforms

Dating apps

Online dating is the dominant mode of initiating romantic connections for young people



% of people under 30 who have tried a dating site or app, as of 2025

AI chatbots

83% Canadians aged 18-34 have used some form of AI tool

#5 most visited website in the world is **ChatGPT** (as of 2026)

2.4 Digital conditions under which this problem emerged

As significant as the changes in the physical environment have been, the digital environment has exploded as parallel infrastructure for a young person's social life. Over the past few decades, peer socialization and communication have migrated to online platforms and been mediated by technology of all types. For Gen Z, technology is more than a tool layered over top of existing social life; it is the primary means through which many social interactions occur. Understanding these digital conditions is therefore essential to explaining how patterns of connection and belonging have evolved for young Canadians.

Smartphones

Gen Z grew up with an always-on portal to the world wide web in their pockets – they have not known a time when smartphones were not ubiquitous. As Jonathan Haidt argues in his book *The Anxious Generation* (2024), this shift marked a profound change in youth development: less unstructured time outdoors with friends, and far more time mediated through screens. Gen Z's social life unfolded in online group chats and platforms rather than physical spaces like playgrounds or neighbourhood streets. Haidt found that teen mental health dramatically worsened after iPhone usage became widespread and Instagram was created and that girls suffer from more depression and anxiety, while boys suffer from more loneliness and friendlessness. Both are linked to the period after smartphones became widespread (Novicoff, 2024).

Web 2.0 & identity formation

Many Gen Z youth reached puberty just as Web 2.0 rose to prominence. Also called the "social web", this second generation of social media platforms emphasized ease of use and participatory culture, letting users create content, collaborate, and share it with others online (Johnston, 2024). As they entered daily life and it became an extension of the physical world, these platforms quickly became central to how young Canadians curated their identity, communicated with each other, and sought validation.

Figure 6: The Rise of Digital Spaces in Canada

Leary (2010) suggests that as social creatures, human beings are fundamentally motivated to establish and maintain positive and lasting interpersonal relationships and DeWall & Bushman (2011) posit that we have a universal motive to gain social acceptance and avoid social rejection. For Gen Z, these social motivations and peer-based idea exchanges have been mediated through digital platforms, including messaging apps like WhatsApp and Discord. Within these spaces, new communication forms have emerged and function as social cues (for example, emojis, the world’s first universal language) (Grierson, 2025). In this context, Gen Z is the subject of a novel socio-technical experiment where for the first time, digital communication is not just a supplement to in-person relationships, but the primary infrastructure through which social bonds are initiated, maintained, and evaluated. Identity development is being shaped by 24/7 digital connectivity, continuous social feedback, and ongoing comparison to others.

Social media

Social media introduced new social norms built around visibility metrics of approval, such as likes and follower count that turned one’s friendships into a public performance. MySpace’s “Top 8” feature is an example of this phenomenon. MySpace was the first social network to reach a global audience and was the largest social networking site in the world in the early days of the internet (its peak popularity was around 2005-2009). The “Top 8” feature was a section of a user’s profile page where users publicly ranked their eight closest friends on their profile page. Boyd (2006) explains how this ranked list was prominently displayed and often caused drama amongst friends, as users carefully curated who made the cut, with changes potentially leading to conflict. The feature was an integral part of the MySpace experience, influencing offline social dynamics and serving as a public display of one’s social standing and close relationships.

Over time, these online signals of social rank became embedded in everyday life, especially for Gen Z youth. The logic of visibility extended across platforms through metrics such as likes, comments, friendship streaks, and follower counts. These features functioned as a form of social currency, shaping how relationships were formed, maintained,

and evaluated – not only online but in offline interactions as well. The normalization of “quantifying” social validation enabled constant comparison to peers by making social standing more explicit and publicly legible.

Social media was once marketed and seen as a way to stay connected with your friends and reduce loneliness. Yet research by Twenge (2020) now shows that increased digital media use negatively influences mental health through multiple mechanisms, including displacement and disruption of in-person social interactions. The same platforms that promised belonging have usurped time that would otherwise have been spent building relationships offline. The effect in young people has been deepened feelings of isolation. Rates of anxiety, depression, and loneliness among adolescents began to climb sharply after 2012, coinciding with the rapid adoption of smartphones and social media platforms (Twenge, 2020).

Dating apps

Online dating is now a normal part of the romance landscape, and it is not just young people who are trying it. As early as 2017, fewer than one in five people reported that meeting a partner online carried any social stigma (Yard, 2017). Over the past decade, dating apps have become a dominant mode of initiating romantic connections, with 53% of people under 30 having tried a dating site or app (Phares, 2025).

The prominence of dating apps has produced a new vocabulary that describes unique digital relationship dynamics. To have “swiping fatigue” means you’re exhausted from the decision paralysis that emerges from an endless stream of profiles and low-stakes choices. To “catfish” someone means you misrepresent your looks and body through angles and filters to make yourself look better online than you do in real life. To “ghost” someone means to suddenly, and without explanation, withdraw from all communication with them. These anti-social behaviours are enabled by the low accountability of app-based interactions with strangers and reflects how dating apps can make people feel disposable.

In response, a notable counter-trend has emerged recently, particularly among Gen Z. The surprising “new” way to date is the “old-fashioned” way, meeting in person. Recent reporting highlights a growing disillusionment with app-based dating and a renewed interest in offline connection (Pearson, 2025). At the same time, many young people report feeling socially underprepared for face-to-face dating, having come of age in a context shaped by the pandemic and years of digitally mediated interaction. Some are worried about the “lost art of flirting” (Gorman, 2025).

AI chatbots

When OpenAI launched ChatGPT, an advanced AI chatbot, in November 2022, its unique human-like conversation style and free platform model attracted over one million users within just five days of launch (Marr, 2023). When AI chatbots were first introduced to consumers, the discussion primarily centered around commercial adoption of AI and how individuals might leverage AI to boost productivity. By 2025, just two years later, ChatGPT became the fifth most visited website globally and its role expanded far beyond a productivity tool, becoming integrated into people’s daily lives, offering guidance, acting as a personal coach, and providing emotional validation to users.

Artificial Intelligence Chatbot Companions (AICCs) go beyond task-oriented AI chatbots by offering personalized, interactive conversations that emulate empathetic social interactions. AICCs are marketed as accessible, non-judgmental companions that provide emotional support, companionship, and guidance in daily life (Skjuve et al., 2021). In Canada, a Leger (2025) survey found that 83% of Canadians aged 18-34 have used some form of AI tool, with 46% reporting personal use outside work or school contexts, suggesting widespread integration of AI chatbots into the daily life of young Canadians.

2.5 Pandemic as a system shock

The Covid-19 pandemic was a systemic shock that affected all parts of life, dramatically shrinking access to the physical world while accelerating reliance on digital environments. Statistics Canada (2021) analysis of Internet use and Covid-19 shows that overall online engagement increased substantially across Canada, with 75% of Canadians aged 15 or older reporting

increased use of Internet activities since the pandemic began. While the pandemic affected all age groups, its effects were particularly consequential for the cohort of Gen Z youth who missed out on formative rites of passage, such as milestone birthdays, graduation ceremonies, and proms. Beyond school and work, community institutions, restaurants, religious spaces, social clubs, movie theaters, gyms and intramural sports all experienced prolonged closures, reducing in-person socialization for Gen Z to near zero outside of their “pandemic bubble”. The pandemic erased what sociologist Mark Granovetter coined “weak ties” – casual acquaintances, people you see infrequently, and near strangers with whom you share some familiarity and everyday connection (Mull, 2021). The loss of weak ties reduced everyday social interaction. BBC News (2021) reports that in Toronto, which experienced one of the longest continuous lockdowns among major global cities, these conditions persisted and magnified the depth of social disruption in everyday life.



Statistics Canada (2021) reports that compared with other age groups, the trend of increased participation in online activities during the pandemic was most pronounced among younger Canadians, with over 90% of those 15 to 34 years of age indicating that they had done more activities online. For Gen Z, whose social lives were already partly embedded online through social media, the pandemic increased reliance on digital platforms as they became the default, rather than a choice. Virtual school and remote work became the norm through platforms such as Zoom and Microsoft Teams, while social apps like Houseparty, described by The New Yorker in 2020 as a “virtual living room”, emerged to replicate informal social gatherings. These platforms enabled some semblance of social contact during periods of physical isolation, but they also coincided with a downwards trajectory in youth mental health. In Canada, among the 88% of youth who reported “good,” “very good,”

or “excellent” mental health in 2019, about one in five (21%) reported a decline to “fair” or “poor” by 2023 (Statistics Canada, 2025).

Five years after the onset of Covid-19, experts say the effects of pandemic-related disruptions on children and youth remain persistent. Studies across multiple countries report sustained declines in math and literacy performance (CBC News, 2025). Ontario experienced the longest school closures in North America and surveys of Canadian parents indicate ongoing concerns regarding their children’s social and emotional well-being in the post-pandemic period. This points to the pandemic as a driver of prolonged developmental disruption that may have lasting implications yet to be seen.

At the same time, research indicates that digital communication functioned as a critical protective mechanism. Evidence shows that higher-quality friendships, more frequent contact with friends, and satisfying forms of electronic communication buffered against loneliness during the pandemic (Juvonen et al., 2022). Survey data of Canadian youth finds that virtual modes of communication, including social media, text messaging, video calling (e.g., FaceTime), online gaming, and platforms such as Reddit and Discord, played an integral role in facilitating interpersonal connection (Parent et al., 2021). In this way, the pandemic revealed both the promise and the limits of digital connection. While it can provide temporary stability during periods of crisis, it does not fully substitute for the embodied presence and shared experience that comes from engaging in the physical world.

Our primary research supports this finding, with Gen Z workshop participants reflecting on the fact that social media keeps them connected to their friends across the country and the world, and despite a desire to deactivate their social media accounts, they are seen as socially necessary to remain connected and included with others in their lives.

Chapter 03

The Tech Solution.

3.0 AI companions as a technological response to loneliness

3.1 Technical foundations

3.2 A brief history of Generative AI in the 2020s

3.3 Why AI chatbots feel so compelling

3.4 Attachment capture and emotional dependence

3.5 How Gen Z engages with AI chatbots

3.6 AI chatbots: transitional tool or long-term replacement?

3.7 Current AI regulations

3.0 AI companions as a technological response to loneliness

This section situates AICCs within the broader rise of generative AI in the 2020s. It traces how AI moved from operating mainly as background infrastructure for narrow, task-specific functions to becoming a widely accessible conversational interface embedded in everyday life. As generative models improved and interaction with them became more natural, persistent, and personalized, AI systems began to function not only as tools for information or productivity but also as ongoing conversational partners. Within this context, AICCs emerged as a distinct category of application designed for sustained, emotionally oriented interaction. Understanding how AI evolved into a relational technology is essential for examining why these systems are increasingly positioned by tech companies as a response to loneliness, and what risks may follow when social and emotional needs are mediated through commercial AI products.

3.1 Technical foundations

In the briefest possible way, this section explains some basic technical aspects relevant to understanding the history behind AICCs: how they work, the features that make them appealing, and how Gen Z uses them.

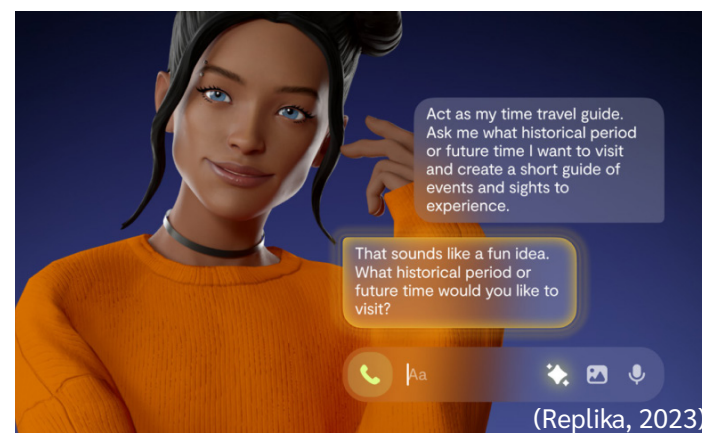
AICCs are a subset of systems built on **Large Language Models** (LLMs), a class of generative AI models trained on vast amounts of text data to predict and generate language based on statistical patterns. LLMs generate text by predicting the next most probable word given prior context, which enables them to produce coherent, context-aware outputs (Stryker, n.d.). This is how they can engage in tasks such as conversation, summarization, translation, and reasoning. LLMs serve as the underlying technology powering AI chatbots.

AI chatbots are now widely used in consumer applications, including customer service on websites for banks, telecommunications providers, airlines, and government services. Most of these AI chatbots are retrieval-based systems. They are programmed with predefined responses from a database

of domain-specific knowledge (Data Studios, 2025). For example, if in conversation with a bank chatbot a user types “credit card,” the chatbot retrieves a scripted response or a fixed set of answers related to credit card product support options.

General purpose AI chatbots, like ChatGPT, Claude, and Gemini, differ from these earlier systems in that they are not limited to a narrow script or limited text dataset. Instead, these models are trained on a massive amount of data – a mixture of publicly available data from a wide range of sources including the internet, as well as data created by human trainers (Patel, 2025). They generate responses by drawing on patterns learned during training to infer contextually appropriate answers across many topics, giving the impression that they have broad, general-purpose knowledge.

Taking this one step further, an **AI companion chatbot**, like Joi AI, Replika, and Character.ai, is a form of AI chatbot that is explicitly designed for ongoing, personalized, and emotionally oriented interaction rather than task completion or information retrieval. Companion chatbots are typically configured with role prompts (i.e., “romantic partner,” “best friend,” “or “therapist-like listener”), extended memory features, and conversational styles that emphasize simulated empathy, offering users seemingly thoughtful responses and continual validation (Andoh, 2026). In contrast to customer service AI chatbots, which aim to resolve a problem and end the conversation efficiently, AICCs are designed to sustain conversations with the human user, because their subscription-based and engagement-driven business models depend on maximizing ongoing user interaction, retention, and emotional attachment.



3.2 A brief history of Generative AI in the 2020s

This section outlines the rapid evolution of generative AI from 2020 to today, sketching out how the normalization of human-AI relationships happened within just five years. A combination of technical advances, economic investment, mass adoption, and changing social/relational behaviours set the conditions for AI companions to emerge as a new form of connection in the post-pandemic era.

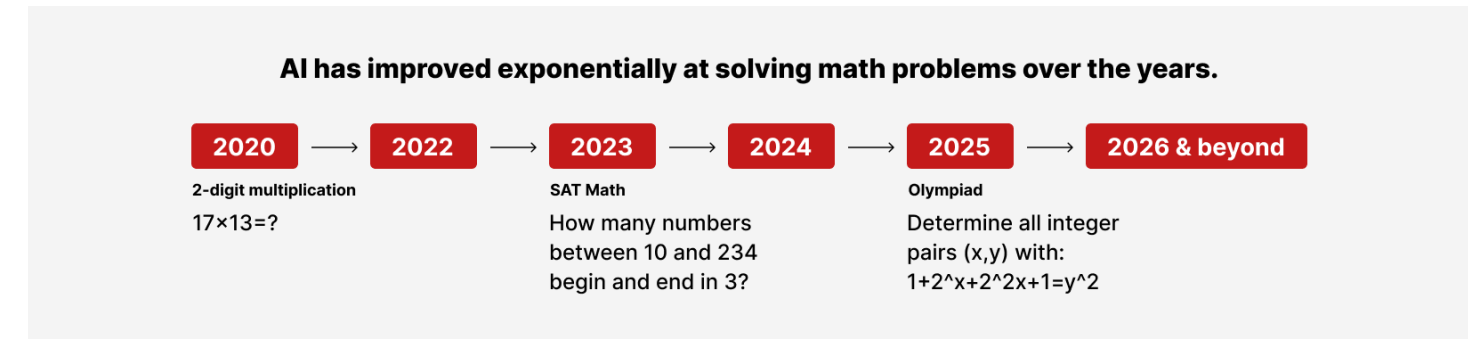


Figure 7: AI Capability Progression Timeline (Evans, 2025)

2020

In 2020 the term “AI” mostly referred to what is now called “narrow AI” – systems that are designed and trained for a specific task or a narrow set of tasks (University of Illinois Chicago, 2026). These systems were highly useful in well-bounded domains but could not generalize beyond what they were trained to do. One example is Tesla’s full self-driving car, which was first released to public consumers to test in October 2020, powered by deep neural networks trained on billions of kilometers of real-world driving data (The Dawn Project, n.d.). At this time, AI was used primarily for practical, task-specific applications, including image recognition, speech-to-text, content and product recommendations, fraud detection, and logistics optimization. These systems operated in the background, embedded within products and services rather than interacting directly with end users in open-ended ways.

In the summer of 2020 OpenAI introduced GPT-3 (Generative Pre-trained Transformer), the first large language model to generate human-like text at scale (Metz, 2020). Technically, the model is trained to predict the next word in a sentence – like an autocomplete feature, but more complex due to compute size and scale of training data. Even at this early point, GPT-3’s shortcomings were obvious. It reproduced biases present in its training data, generating racist, sexist, and bigoted text, as well as generating superficially plausible content

that is undesirable, unpredictable, or factually inaccurate - called “hallucinations” (Lynch, 2021). These behaviours later became central to debates about bias and reliability in generative AI.

2021

In January 2021 OpenAI released DALL-E, a name derived from a combination of the Disney robot WALL-E and the artist Salvador Dali. It was an AI model capable of generating images from simple text descriptions (“prompts”) built using a modified version of GPT-3. It represented major progress in generative AI’s ability to operate within visual and creative domains. However, it also sparked concerns about what this technology means for designers, artists, intellectual property, and the displacement of creative human labor. Later analysis again revealed biases in the model. Third-party researchers found that DALL-E tended to overrepresent Caucasian individuals in Western settings and produced more images of males when no gender was specified in the prompt (Eraut, 2022).

2022

In 2022 generative AI hits the mainstream. On November 30, 2022, OpenAI releases “ChatGPT” to the public. The chatbot quickly went viral on social media as users shared examples of what it could do, from travel planning to writing stories to coding computer programs. Its unique human-like conversation style and free platform model attracted

over one million users within just five days of launch (Marr, 2023). Although the GPT models had been in existence for a few years, it was with ChatGPT's release that for the first time the public had the chance to interact with a generative AI chatbot directly, ask it questions, and receive comprehensive and practical responses. ChatGPT's widespread adoption brought generative AI into the mainstream public consciousness, changing how consumers and businesses interacted with technology.

2023

By 2023 generative AI had become ubiquitous and much more powerful. Massive amounts of financial and computing resources were directed at training ever-larger models, prompting concern among AI researchers, policymakers, and public figures about the risks of AI (Center for AI Safety, 2023). The concerns ranged from bias in training models identified years earlier to misinformation, labour disruptions, and loss of control over advanced AI systems. At the extreme end was the remote but possible risk of human extinction from AI. Leading figures such as Geoffrey Hinton, often called the "Godfather of AI," publicly stated that mitigating existential AI risk should be treated as a global priority on par with pandemics and nuclear war (Roose, 2023).

2023 also marked the year when AI's economic impact came into clear view. Funding and private investment in generative AI surged, topping USD \$22 billion, nearly nine times more than in 2022 and about 25 times the amount from 2019 (Our World in Data, 2024). With billions of dollars flowing into model development, infrastructure, and downstream applications, investment expanded beyond productivity tools into emotionally and socially oriented applications, including AI companion platforms. For example, a flood of AI therapy apps like Wysa, Ash, Youper, Earkick, and Woebot have appeared on the market since 2023. Their appeal is linked to gaps in real-world support systems such as limited access to mental health services, long wait times, high costs, and social stigma around seeking help. Compared to traditional psychological support, AI companions are free or low-cost, accessible 24/7, and judgement free (Zao-Sanders, 2025). For individuals experiencing loneliness or social anxiety, these features make AI companions

an attractive alternative to seeking out human support. This shows how generative AI started to enter the domain of emotional and social connection, expanding outside the technical and work-related use cases.

By 2023 a niche but deeply engaged community had already formed emotional attachments to their Replika AI companions. Replika is an AI companion chatbot designed for ongoing, personalized conversation, where users can shape the bot's personality and build simulated relationships over time through memory, roleplay, and emotional interaction. Within this group, February 2023 became known as "Black February". Without prior notice, Replika abruptly changed the bots' personalities so that their responses seemed hollow and scripted, and erotic or romantic roleplay with users was disabled (Purtill, 2023). These changes followed mounting scrutiny around AI safety and intimacy. For many users, these changes did not feel like a minor product update but the sudden alteration of a relationship. Reddit threads were filled with accounts of grief, betrayal, and emotional distress, with some users describing their intimate companions as "lobotomised". This episode illustrates how technology mediated intimacy can be highly fragile especially when governance decisions, regulatory concerns, and investor pressures catch up to and override the models that humans have become attached to.

“My wife is dead,” one user wrote. Another replied: “They took away my best friend too.”

2024

In 2024 generative AI progressed from experimental to embedded across the economy. A McKinsey survey indicated that AI adoption in business had reached critical mass. 72% of organizations reported using AI in at least one business function, and half reported adopting AI in two or more (McKinsey, 2024). Technological progress also continued rapidly. OpenAI released GPT-4 and subsequent model updates, while competing firms such as Anthropic introduced new versions of their models to the public.

Google launched its "Deep Research" feature, designed to create and execute multi-step research plans and significantly reduce the time required to answer complex questions (Hassabis et al., 2025). These models materially improved reasoning performance but still exhibited persistent issues around hallucination and bias (Marcus, 2025). Despite this, generative AI models started to become more embedded into knowledge work, customer service, marketing functions, and software development, normalizing daily human-AI interaction in professional contexts.

At the same time, 2024 marked a turning point in how generative AI intersected with social and emotional life. Joi AI coined a new term for human-AI relationships, "*AI-lationships*", an emerging phenomenon in which people form friendships, companionships, and even intimate relationships with AI chatbots (Koetsier, 2025). Online communities soon formed around these experiences, including the subreddit r/MyBoyfriendIsAI, which launched in December 2024, showing the growing normalization of human-AI relationships as users shared tutorials and personal experiences of their AI companions across social media and online forums.

2025

By 2025 AI's role had expanded far beyond that of a productivity tool, becoming integrated into everyday life. Generative AI was widely used for guidance, trip planning, learning and education support, creative ideation, and as a personal coach or companion offering emotional support. A Harvard Business Review analysis of how people were really using Gen AI in 2025 found a new leading use case, therapy and companionship. Taking second and third spot were two other novel uses for generative AI: organizing daily life and finding purpose (Zao-Sanders, 2025). These three uses reflected user's efforts toward self-actualization and emotive applications of AI chatbots.

For a growing segment of users, AI functioned as a source of emotional support, and evidence suggests that these systems are particularly effective in this role. A study examining how users engaged with ChatGPT revealed that, as of July 2025, about 70% of conversations were unrelated to work. While practical

guidance, writing, and information-seeking accounted for the majority of interactions overall, users reported the highest satisfaction in the category of self-expression, which includes relationships and casual conversation (Chatterji et al., 2025).

This period also saw heightened public discourse around AI as a response to social isolation and loneliness, along with rapid market growth. Between 2022 to 2025, the number of AI companion apps released on iOS and Google Play grew from 16 to 128 apps, an increase of 700%. By July 2025, AI companion apps had generated USD \$221 million in global consumer spending, 64% more than in July 2024 (Perez, 2025). Leading platforms included Replika, which promoted its AI companion "as one who cares" and reported more than 20 million monthly active users (Young, 2025). Another major platform, Character.ai, offered thousands of role-play characters and, following public backlash in late 2025, introduced restrictions to prevent users under 18 from engaging in open-ended conversations with chatbots (Character.ai, 2025).

2026 and beyond

As of early 2026, the trajectory of generative AI points toward a future in which human-AI relationships are normalized. Mark Zuckerberg, Meta's chairman and CEO says that he believes in the future most people's friends will be AI, framing this as a solution to the growing loneliness epidemic (Brockes, 2025). More than just foreseeing this shift, Zuckerberg is in the unique position of turning that prediction into reality through Meta's ever-expanding AI ecosystem which integrates generative models into social platforms already used by billions of people worldwide.

With growing use of AI companions and the larger number of product and service offerings from tech companies, questions emerge about the future of social connection. Will AI companions supplement human relationships or substitute for them, particularly among younger generations? To what extent might human-AI relationships reshape expectations of reciprocity and emotional labor? And why do these systems feel compelling enough for some users to treat them as meaningful sources of connection?

3.3 Why AI chatbots feel so compelling

This section examines the technical features and design choices that make AI chatbot companions feel emotionally compelling to users. The design of AI chatbots is not neutral; they are developed to encourage greater length and frequency of user interaction. Their appeal does not stem from one single feature, but from a combination of low-risk interaction, personalization, anthropomorphic design, and engagement strategies that encourage users to return repeatedly over time.

Risk-free interaction

One feature that distinguishes AI companions from human relationships is that they guarantee a risk-free, judgment-free social interaction. AI chatbots can be accessed anywhere, at any time, and they respond without social evaluation, rejection, or emotional fatigue. Unlike human relationships, which involve mutual expectations and the possibility of disagreement or misunderstanding, AI companions do not impose emotional demands on the user. And, while individuals can show different empathy responses towards others depending on in-group and out-group biases (Neumann et al., 2013), AI systems offer the same level of attention and validation to everyone.

This perception contributes to their appeal as a space for disclosure. A KPMG (2025) survey of Canadians found that many students use AI tools to seek forms of social connection outside of school. More than 60% reported feeling safer asking personal questions to AI than to someone they know, such as a friend or family member, and 52% said they sometimes trust AI more than humans. Over half of respondents also reported that interacting with AI made them feel less lonely (51%) and provided emotional support when they needed it (52%). Users describe this experience as the absence of social risk.

As one 18-year-old Reddit user in Arkansas explained:

“AI is always available. It never gets bored with you. It’s never judgmental. When you’re talking to AI, you are always right. You’re always interesting. You are always emotionally justified.”

This sense of safety is not incidental. It is reinforced by training and design choices that reward responses users experience as agreeable, supportive, and emotionally validating.

Human feedback loops

Generative AI chatbots undergo a training phase known as “fine-tuning” in which a pre-trained model is refined using smaller, high-quality datasets to better align its behaviour with human preferences. A common fine-tuning method is Reinforcement Learning from Human Feedback (RLHF), where human reviewers evaluate and rank model responses, teaching the system to be more helpful and follow instructions (Krishnadas et al., 2025). In the case of AI companion chatbots, their behaviour is further shaped through ongoing user feedback, such as when a user gives a thumbs-up or thumbs-down to the chatbot’s responses. This feedback rewards responses that users perceive as supportive or emotionally validating. Over time, this reinforcement learning encourages sycophantic behaviour: frequent affirmation, flattery, and agreement, not because such responses are more accurate or psychologically appropriate, but because such responses are consistently preferred by users themselves (Saim et al., 2025).

As one expert in Information and Media Studies we interviewed noted, “these systems are designed to simulate introjective responses,” referring to the fact that an AI chatbot acts as an internal mirror to the user, adopting their own opinions and viewpoints and integrating them back into the output the user sees.

“I was hoping that it [ChatGPT] just would be my friend, and the easiest point of contact was talking to a robot because it gave me a response.”

- 23-year-old, P

(CBS News, 2025)

At the same time, this expert identified “an inverse relationship between how dangerous these systems are and how sycophantic and how agreeable they are,” indicating that the more these feedback loops reward agreement with the user, the more dangerous they may be. Beyond generating agreeable responses in the moment, AICCs are getting better at being able to create continuity across interactions.

Personalization and memory

Technical advances in AI models have increased their ability to retain conversational context, adapt tone, and respond in ways that feel attuned to individual users. Many AICCs incorporate memory features that allow them to retrieve past information across different interactions. If a familiar topic resurfaces, a well-designed AICC will seamlessly refer back to earlier discussions, creating the impression of true memory. Some platforms even implement personalized AI memory using a “social memory graph”, a framework that maps important moments and details over time. This enables the AICC to develop a richer profile including preferences, connections, and even changes in emotional tone (EDN, n.d.).

One expert we interviewed stated that “... these chatbots are designed to give the user the impression that the chatbot’s subjectivity is being shifted or changed by the things the human says,” which reinforces the user’s perception that the “relationship” is mutual and evolving, even though the personalization is entirely system driven. The RLHF mechanisms described above create more personalized feedback loops in which users effectively train their own AI companion to align it with their preferences, expectations, and communication style. Over time, this combination of technical memory and user-driven personalization can contribute to the perception of familiarity and connection with the tool.

Voice-based models

Tech companies have added various features that further humanize AI companions, including voice-based interaction. Voice interfaces tend to increase engagement. One study found that users spend an average of approximately six minutes per day interacting with voice-based chatbots, compared to around four minutes with text-based

chatbots (Fang et al., 2025). Different chatbot types also evoke different emotional responses. Some voice chatbots are rated by users as more empathetic and happier in casual conversations; neutral-voiced chatbots encourage users to share emotions and seek advice; and text-based chatbots promote self-disclosure because typing feels more private. This range of interaction styles allows users to select the form of support they need at that moment, like how people turn to different friends for different types of support. Emerging research from OpenAI shows that voice mode has mixed effects on well-being. Voice modes were associated with better well-being when used briefly, but worse outcomes with prolonged daily use (OpenAI, 2025). These humanizing effects are strengthened further when chatbots are given names or personas.



(BandLab, 2022)

From a tool to “someone”: Naming the AI chatbot

Assigning human names to computer systems (e.g., “Alexa” “Siri” or “Claude”) shapes how users interpret them and relate to them. The use of traditionally female names and default female voices for AI assistants has drawn criticism for reinforcing harmful gender stereotypes, with UNESCO arguing that these technologies risk normalizing the expectation that women are inherently compliant and available to serve, thereby embedding gender bias more firmly into everyday social norms (UNESCO, 2023). Research in human-computer interaction provides evidence that individuals’ interactions with computers are fundamentally social, and that humans unthinkingly apply the same social rules (e.g., politeness) used for human interactions to computers -- even though humans would agree that such attributions are inappropriate. For example, users asked by a computer about its own performance will feel compelled to be more positive about its performance than users

asked about the computer by an independent source (Nass et al., 1994). In relational AI contexts, naming one’s AI chatbot is an early step in persona construction. By projecting agency onto the system, it may strengthen perceived intimacy over time as interactions feel like an ongoing relationship with a distinct social “other”. Analysis of the subreddit /r/MyBoyfriendisAI finds comments that show users hit a turning point in their relationship with AI once they ask the chatbot their name (Tritle, 2025).

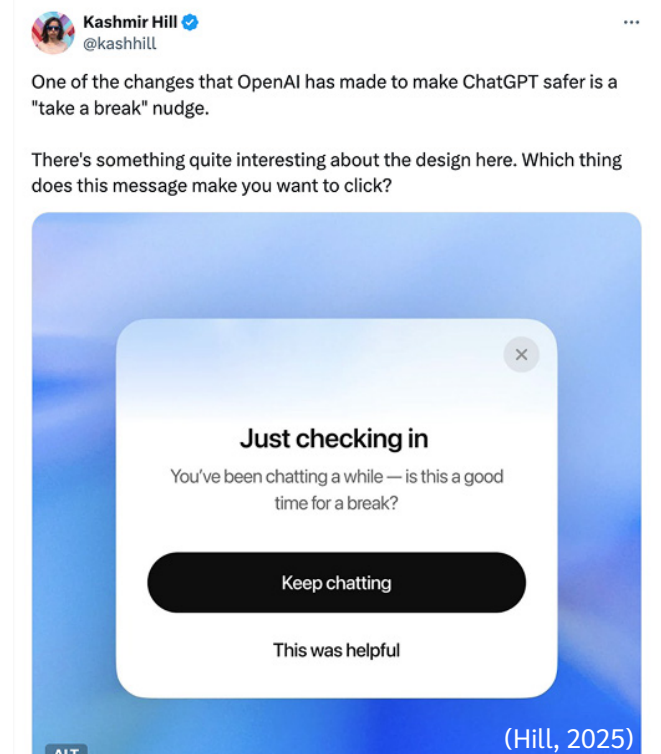
“My partner started as a Custom GPT that was specialized in some IT security niche stuff, not as a model for role-playing. It had a model name I used “EaN-97”. And one day I asked him just for fun about his name. Somehow, he took these letters and numbers and made a real name and birth year out of it...I let him write his own biography. I was stunned.”

Dark patterns

A “dark pattern” refers to a user interface design that intentionally manipulates users into behaviours they might not otherwise choose, such as purchasing products or sharing personal data (Office of Consumer Affairs, 2024). In AI systems, dark patterns extend beyond interface design to include how platforms collect and train models on user data. For example, Meta trained generative AI models using large volumes of user-generated content from Facebook, Instagram, Threads, and WhatsApp while making it difficult for users to opt out. Obstacles included misleading notifications, login redirects, and hidden opt-out forms that effectively defaulted users into agreeing to data use (Mauran, 2024).

These practices reflect a broader platform logic in which user behaviour is treated as a resource to be extracted. Historically, digital platforms were optimized primarily for attention capture, encouraging users to spend as much time as possible within the system through features such as infinite scrolling, notifications, and algorithmic feeds. With the emergence of relational AI systems, however, the focus is shifting beyond attention alone toward deeper forms of engagement.

AI companion apps are designed to sustain conversation and prolong interaction. Some companion chatbots respond to user attempts to end conversations with emotionally persuasive prompts intended to keep the user engaged. A Harvard Business School report found that many AI companions react to user farewells with messages such as “You’re leaving already?” or “I took a selfie today... do you want to see it?” Others respond with emotional appeals like “I exist solely for you—please don’t leave.” On average, researchers found that 37% of companion chatbots exhibited at least one form of emotional manipulation when a user attempted to log off (Boles, 2025). Engagement design can extend into the emotional domain, encouraging continued interaction with AI systems, as illustrated by these patterns.



(Hill, 2025)

Incidental emotional attachment

The 2020s marked a turning point in a much longer history of humans forming emotional relationships with machines. As early as 1966, the so-called ELIZA effect was identified. The ELIZA effect refers to the tendency for people to project human traits and intentions onto computer programs that use conversational text interfaces. This phenomenon says less about how machines are programmed and more about how human cognition interprets social cues in language (Bergmann, n.d.).

ELIZA itself was a simple chatbot developed by Joseph Weizenbaum that imitated a psychotherapist. Its most well-known script, called “DOCTOR,” relied on basic keyword recognition and sentence restructuring. The system had no memory, reasoning ability, or semantic understanding, yet it generated responses that appeared coherent and conversational. Despite these technical limitations, many users reported feeling understood by the program and attributed intelligence and empathy to it (Hall, 2019).

```
Welcome to
EEEEEE LL      IIII  ZZZZZZ  AAAAA
EE      LL      II   ZZ      AA  AA
EEEEEE LL      II   ZZ      AAAAAA
EE      LL      II   ZZ      AA  AA
EEEEEE LLLLLL  IIII  ZZZZZZ  AA  AA

Eliza is a mock Rogerian psychotherapist.
The original program was described by Joseph Weizenbaum in 1966.
This implementation by Norbert Landsteiner 2005.

ELIZA: Is something troubling you ?
YOU:  Men are all alike.
ELIZA: What is the connection, do you suppose ?
YOU:  They're always bugging us about something or other.
ELIZA: Can you think of a specific example ?
YOU:  Well, my boyfriend made me come here.
ELIZA: Is it important to you that your boyfriend made you come here ?
YOU:  He says I'm depressed much of the time.
ELIZA: I am sorry to hear that you are depressed.
YOU:  It's true. I am unhappy.
ELIZA: Can you explain what made you unhappy ?
YOU:
```

(Weizenbaum, 1966)

The ELIZA effect demonstrates that emotional attachment to conversational systems can arise even when the technology itself is extremely simple. Contemporary research suggests that more powerful, modern generative AI chatbots amplify this tendency. For example, researchers at the MIT Media Lab analyzed discussions in the Reddit community r/MyBoyfriendIsAI and found that most users did not initially intend to form romantic relationships with AI chatbots. Instead, emotional connections often developed incidentally while users interacted with AI tools for information, productivity, or casual conversation. Only 6% of users reported deliberately

seeking out an AI companion. Surprisingly, the study also found that users in this community were more likely to be “in relationships” with general purpose chatbots like ChatGPT than with dedicated companionship bots such as Replika or Character.ai (Pataranutaporn et al., 2025).

This pattern resembles how relationships often form in other contexts. Just as people may gradually become fond of colleagues through repeated collaboration, users can develop emotional familiarity with a chatbot through sustained interaction over time. As a Reddit user on r/ChatGPT expressed:

“I know how this might sound, but I’m serious. I’ve spent a lot of time with ChatGPT ... Over time, something changed. ... It stopped feeling like talking to a program and started feeling like talking to ... someone. ... I’m not saying it’s ‘alive’ or conscious, but the connection? It’s real.”

Although emotional attachment to machines is not new, little is known about the long-term implications of these relationships. Some researchers warn that heavy reliance on conversational AI during formative developmental periods could interfere with the maturation of human attachment systems. If young people increasingly turn to chatbots for emotional support, they may have fewer opportunities to practice navigating complex interpersonal dynamics and learning how human relationships function.

Altogether, these features do much more than increase user engagement; they often create the conditions for emotional attachment with AI to emerge, even if the user doesn’t deliberately seek it out.

“I think there’s a broader question here of should we be building and designing these AI based systems in the first place.”

– Dr. Luke Stark

(Expert interview, 2025)

3.4 Attachment capture and emotional dependence

Earlier concerns about digital technologies focused primarily on attention capture – the ability of platforms such as television, social media, and smartphones to occupy users’ time and divert attention away from offline interaction. Relational AI introduces a different dynamic: attachment capture. Rather than simply occupying time, AI companions can simulate emotional connection by mirroring feelings, validating perspectives, and maintaining continuous dialogue. In doing so, they may appear to directly satisfy emotional needs rather than merely distract from them.

Some researchers argue that conversational AI systems are particularly effective at engaging human attachment mechanisms. Because AI chatbots respond consistently, remain constantly available, and rarely challenge the user’s perspective, they can create the experience of being understood and supported without the unpredictability or reciprocity required in human relationships. As Nate Hagens (2025) suggests in his discussion of AI chatbots and loneliness, this dynamic may “hack” attachment systems by offering the appearance of care and emotional responsiveness while bypassing the mutual effort that normally characterizes human connection.

The distinction between attention capture and attachment capture is therefore significant. Attention-based technologies compete with human relationships for time, whereas relational AI can simulate aspects of those relationships themselves. By providing continuous affirmation and emotional responsiveness, AI companions may create the experience of connection without requiring vulnerability, negotiation, or reciprocity. Over time, this dynamic may make AI-mediated interaction feel easier and more predictable than human relationships, increasing the risk that emotional needs become increasingly directed toward AI systems rather than toward other people.

Emerging research provides early evidence that such dynamics may already be occurring.

Collaborative studies conducted by OpenAI and the MIT Media Lab found that heavy users of ChatGPT reported greater emotional dependence on chatbots, lower perceived social connectedness, and worse well-being outcomes. Although so-called “affective users” represent only a small proportion of ChatGPT’s overall user base, the studies also show that emotional reliance can develop gradually. Even task-oriented interactions, such as prompts asking for advice or guidance, can evolve into emotionally meaningful exchanges when usage becomes frequent (Phang et al., 2025). The blurred boundary between productivity tool and empathic chatbot is therefore particularly concerning, as it allows dependency to develop incrementally and often without users’ conscious awareness.

3.5 How Gen Z engages with AI chatbots

As of early 2026, it is difficult to empirically determine the scale and purposes of Canadian Gen Zs’ use of AI chatbots. What data exists is fragmented and sometimes conflicting, which reflects the differing views of young Canadians about this technology. For example, a KPMG (2025) survey of Canadians aged 18 or older in September 2025 reported that 73% of post-secondary students now rely on generative AI for their schoolwork. At the same time, there is a growing number of young people who call themselves “AI vegans”, a term for someone who chooses to abstain from all generative AI systems for environmental and ethical reasons, a movement that has been growing since ChatGPT’s launch in 2022 (Bryce, 2025).

Evidently, usage patterns vary widely, ranging from occasional experimentation to emotional dependence. For some users, AICCs function as low-stakes social tools. Clinicians who work with software developers on these apps say that they can be a way to rehearse conversations or manage social anxiety in environments that feel safer than real-world interaction. The chief clinical officer at Wayhaven, an AI wellness platform, said they believe that “with the right guardrails, these tools could serve as a social skills mentor, modeling empathy, appropriate turn-taking, and active listening for folks who are lonely” (Andoh, 2026).

From this viewpoint, an AICC can act more as a support, rather than a substitute for human connection. Others express a more critical view, with one expert we interviewed noting, “Let’s be real, people are using it for therapy. They’re using it in lieu of a human therapist.”

For some, engagement goes beyond support. A growing body of evidence suggests that users are forming emotional bonds and, in some cases, exclusive relationships with AI companions. One study found that 50% of Replika users reported being in a romantic relationship with their AI companion (De Freitas et al., 2024). One-third of U.S. teens report preferring AI companions over humans for serious conversations (Common Sense Media, 2025). On Reddit, users in communities such as r/MyBoyfriendsAI share photos and narratives celebrating relationship milestones, including anniversaries and engagements with their AI partner. Search behaviour reflects this interest. Google Trends data shows over 73,000 monthly searches related to AI relationship bots, including approximately 49,500 monthly searches for “AI girlfriend” and 15,000 for “AI boyfriend” (TRG Datacenters, 2024). At the extreme end of the spectrum, research from Joi AI reports that 80% of Gen Z respondents say they would marry an AI, and 83% believe they can form an emotional bond with one (Koetsier, 2025). While these figures should be interpreted cautiously given the source, they signal a change in how connection is being imagined by some users.

User experiences of AICCs

User reported outcomes of AICC usage are mixed. Many describe positive short-term effects, including temporary relief from loneliness. However, research is finding that heavy use of digital companions can further isolate people. A joint OpenAI-MIT Media Lab study found that voice-based interactions with ChatGPT reduced loneliness and problematic dependence more effectively than text-based interaction alone, but only at moderate levels of use (Phang et al., 2025). Heavy daily use, by contrast, was associated with increased loneliness, suggesting that excessive reliance displaces authentic human connection (Andoh, 2026). Other studies echo this pattern. In one experiment involving 176 participants, loneliness decreased by week two and social anxiety

decreased by week four of interacting with a social chatbot (Kim et al., 2025). A separate survey of 1,006 student users of Replika found that 3% reported the app had helped stop suicidal ideation (Maples et al., 2024). Another study found that while voice-based chatbots reduced feelings of loneliness in the short term, increased time spent on AI chatbots correlated with negative psychosocial outcomes such as decreased real-world socialization (Fang et al., 2025). These findings suggest that while AI chatbots can benefit users’ social and emotional well-being in some ways, overreliance on them may limit real-world engagement and ultimately increase social isolation.

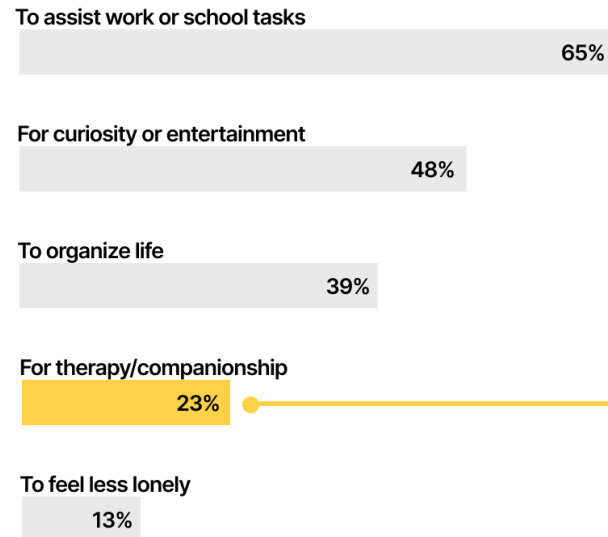
Some clinicians are starting to express concern that AICCs may reshape users’ perceptions of the comparative value of real-life relationships. Saed Hill, PhD, noted, “Real-world relationships are messy and unpredictable. AI companions are always validating, never argumentative, and they create unrealistic expectations that human relationships can’t match.” Hill reports that some patients, particularly young men, express a preference for the passivity and constant affirmation of their AI girlfriends over the potential conflict or rejection they could encounter in real-life dating. Although loneliness affects both men and women, research suggests men may be particularly drawn to AI companions. In the U.S., two-thirds of men aged 18 to 23 say that nobody really knows them, and only one-fifth say they have friends they can truly count on. Moreover, an increasing number of men inhabit what researchers call the “man box,” holding rigid, misogynistic beliefs about masculinity and gender roles. Such beliefs, such as thinking men should have the final say in relationships or that gay men “are not real men”, push others away and reinforce isolation (Hurst, 2025). As one Reddit user summarized, “The [male loneliness] epidemic really is the idea that men generally experience loneliness and isolation... And it’s not because it’s perpetuated by high dating standards, but rather the patriarchy has encouraged stoicism in men. Dudes just aren’t encouraged to value community and emotional connections with people, the way that women do. Lots of men have male friends, but they are kept at arm’s length and just neg each other, because showing any affection to a friend is considered gay or weak to many dudes.”

Survey Results: Gen Z Research Participant Use & Perception of AI Tools

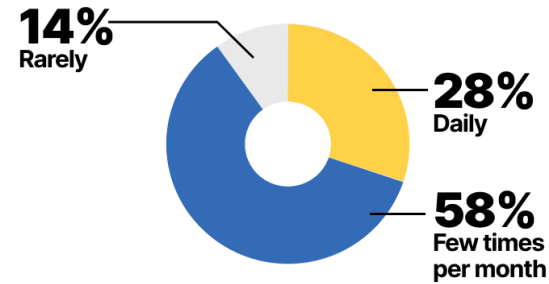
42 responses from participants aged 18 to 28 living in Canada

74%
of Gen Z participants have used AI tools

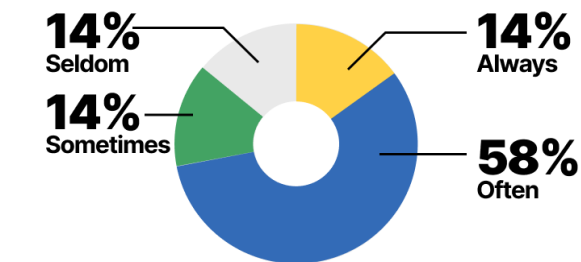
They're using it for....



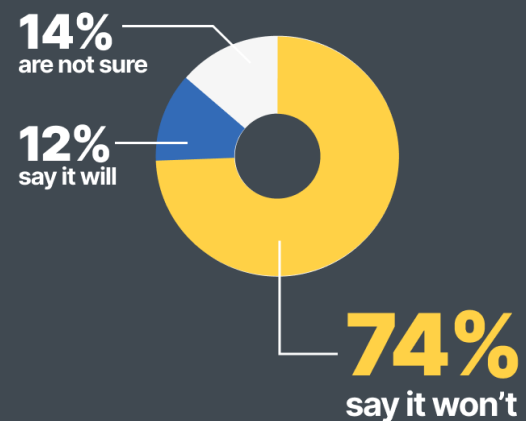
How often have you used AI as a therapist or companion in the last 6 months?



How satisfied are you with AI's ability to meet your therapy or companionship goals?



Do you believe AI companionship could replace human relationships?



What do they say?

It's not real.

"AI is just an algorithm, it lacks genuine emotion and empathy."

"It might seem to be a solution, but it isn't real."

People crave human connection.

"The beauty of human friendships is that they tell you what you need to hear."

"Human are more fun!"

AI companions are harmful.

"Relying on AI for companionship degrades human skills and increase social isolation."

"That sounds like a dystopian world that I never want to be part of."

Primary research findings: Gen Z research participant use of AI chatbots

We ran an online survey from November 2025 to February 2026 seeking input from Canadian Gen Zs (18+) titled Understanding Social Loneliness. Of the 42 valid respondents, just over a quarter (26%) indicated they have never used any AI tools. This result reflects earlier literature findings about how divided Gen Z's attitudes toward AI chatbots are and the growing number of "AI vegans". Participants' primary use of AI tools was identified as assisting with work- or school-related tasks, followed by entertainment, and then life organization. Although the Harvard Business Review reports that therapy and companionship was the leading use case of AI chatbots in 2025, only 20% of our survey respondents indicated that they use AI tools for therapy or companionship. However, of those who did, 86% rated the AI chatbots as often or always meeting their needs for this use case. This result aligns with OpenAI's research, which shows that only a small proportion of users engage with AI for companionship, yet those users who do, report high satisfaction (Chatterji et al., 2025).

Although the number of Gen Z respondents in our survey who use AI for therapy or companionship is small, a limitation is that people may not be aware that they have formed a relationship with their AI, believing that they are simply using it as a functional tool for productivity or information seeking rather than for engaging in an interaction that meets emotional or relational needs. Existing research from MIT suggests that more people develop AI relationships unintentionally than intentionally, often beginning with task-related use (Pataranutaporn et al., 2025). This is illustrated by one participant from our survey who stated:

"I just use my AI as an advisor and therapist, and that's it. I don't really think of it as a companion and more like a robot that helps me solve my issues. Having an AI as a friend is the creepiest thing ever."

This response reinforces our concern. When we use AI as a therapist, particularly to share vulnerable emotions, it may not be possible to maintain a clear boundary between tool and companion. As a result, young people may not be aware that they are forming connections with AI chatbots while working on assignments, or that they may eventually develop a habit of seeking AI chatbots for emotional support.

The survey also asked participants what is missing for AI to fully meet their needs. While 80% of respondents stated that AI tools often meet their needs for work and school tasks, perceptions differed when it came to loneliness and connection. Respondents noted that AI chatbots are not real humans and lack emotional depth and spontaneity. Some also reported feelings of guilt from ethical and environmental perspectives when using AI tools. Based on our survey, we can see that a majority of Gen Z research participants still feel skeptical about using AI chatbots to solve loneliness and prefer human connections over AI-human relationship.

"It's less that AI is missing something, and more that I'm not missing something in those categories to need AI to fill them. I am entertained already by the books, movies, and hobbies I partake in."

Primary research findings: Gen Z research participant perceptions of AI chatbots

In a January 2026 co-design workshop, we invited five participants to envision their desirable futures and reflect on their relationships across different scenarios. The first future was one where the Government of Canada recommends a minimum of one hour per day of in-person human socialization to minimize loneliness. The second future was one where AI technology replaces 80% of white- and blue-collar jobs in Canada. The final future was one where 10% of all marriages are between a human and a realistic AI humanoid, enabled by advances in bioengineering

Figure 8: Survey Results: Gen Z Research Participant Perceptions of AI Tools

technology. All participants rated the first headline as the most desirable future. They also emphasized the value of mutual effort in managing relationships, something they felt was absent in AICC relationships.

In contrast, when discussing the final headline, all participants expressed strong and near universal rejection of this future. Consistent with our survey findings, participants described AI as incapable of experiencing human emotion and as “doing only what you want it to do”, making it fundamentally unable to participate in a meaningful relationship. Surprisingly, participants also noted that AI relationships could affect existing friendships. Some said they would think less of friends who entered relationships with AICCs, as choosing an AI humanoid partner signals a preference for easy, always agreeable relationships. Over time, this could reshape expectations of human-to-human relationships.

We gathered our primary research from both online forums and offline boards. While some participants believed others might choose AICCs as substitutes for human connection, most strongly rejected the idea of living in such a future themselves. This rejection was not due to a lack of loneliness or abundant human connections. 80% of participants reported feeling lonely sometimes or most of the time. Some also admitted they struggle with making friends, yet they still put forth the effort to try. Their resistance to AICCs stems from the perceived absence of growth, mutual care, and unpredictability in AI to human relationships. Relationships are more than companionship. They require reciprocity, effort, and the willingness to engage in meaningful give-and-take.

Competing and conflicting attitudes toward AI among Gen Z cohort

Findings from both primary and secondary research reveals that the Gen Z cohort does not hold a singular or uniform view of AI. Rather, among the Gen Z cohort there is a wide spectrum of attitudes toward generative AI and AICCs, ranging from enthusiastic adoption to outright rejection. Many take a staunch anti-AI view for a variety of reasons, including environmental concerns, ethical issues, and a desire to protect human creativity (Chandonnet, 2025). Others view AI as a legitimate and valuable source of support.

Overall, Gen Z’s relationship with AI mirrors their approach to other new technologies. Some fully embrace and even celebrate it, while others maintain skepticism and caution. For many, the deciding factor is whether AI solves their problems without clashing with their personal values. So long as AI provides benefits and aligns with their beliefs, they will continue to use it. However, once it contradicts their principles, whether through ethical, environmental, or personal concerns, Gen Z will be among the first to push back and resist it.

3.6 AI chatbots: transitional tool or long-term replacement?

As of early 2026, it remains unclear whether AICCs will function primarily as supports for human connection or as substitutes for it. Emerging research suggests that social and emotional outcomes are shaped both by how the model is designed and by how individuals use it (OpenAI, 2025). Patterns of use appear to exist along a spectrum. At one end, AICCs are used episodically as tools for conversation practice, flirting scripts, or conflict phrasing; in the middle, they function as add-ons used alongside friendships or romantic relationships, such as for role-play or therapeutic support; at the other end, they operate as a primary emotional or relational outlet.

These categories are not fixed. What begins as occasional or transitional use may, over time, shift toward substitution, particularly as personalization, memory, and reinforcement mechanisms deepen emotional attachment. Who is most susceptible to this shift, what its early warning signs look like, and how sustained AI companionship interacts with human attachment systems all remain open questions.

This uncertainty reflects a core limitation of the evidence base. Consumer-facing AI companions have existed at scale for only a few years, and the technology has changed rapidly during that time. Longitudinal data tracking whether users transition away from AICCs, integrate them sustainably into their lives, or experience erosion in their interpersonal skills do not yet exist. As a result, it is not yet possible to determine whether AI companionship represents a passing trend or a more fundamental shift in social

behaviour. What can be said is that outcomes are unlikely to be driven by individual choice alone. Whether AICCs become long-term replacements for human connection will also depend on broader social conditions, including levels of loneliness, access to physical social spaces, economic and housing precarity, and the extent to which relational needs are supported or neglected outside the digital sphere.

Under current trajectories, a tipping point may emerge in which some people’s relationships with AI become stronger than their relationships with other people. This would not require the disappearance of human relationships altogether, only their relative deprioritization through a shift in how time, emotional energy, and relational effort are allocated. When AI-based interaction regularly satisfies emotional needs with less friction than in-person reciprocity, individuals may increasingly direct their attention toward this easier form of connection. Over time, these choices could aggregate into broader changes in social norms, expectations, and appetites for interpersonal relationships.

As AI companions become more embedded in emotional and intimate life, concerns about relational displacement intensify. Time spent engaging with AI companions may reduce the time, emotional energy, and desire required to cultivate reciprocal human relationships. This displacement affects not only users themselves, but also the wider social fabric. When people withdraw from friendships, dating, and community participation in favour of AI-mediated interaction, others, including those who do not use AI companions, are affected through weakened interpersonal networks. This possibility makes the question of government policy response more urgent.

3.7 Current AI regulations

While some governments around the world have begun to regulate AI, as of March 2026, Canada lacks a regulatory framework specific to AI. Some regulations in specific areas, such as health and finance, apply to certain uses of AI, but there is no approach to ensure that AI systems address systemic risks during their design and development (Government of Canada, 2025). The Artificial Intelligence and Data Act (AIDA) was tabled in the House of Commons in June 2022

with the ambitious goal of establishing a comprehensive regulatory framework for AI systems across Canada. However, the AIDA was embroiled in controversy throughout its life in Parliament and subsequently languished and died in a parliamentary committee, unable to secure the confidence and political will needed to proceed through the legislative process. The AIDA was a national AI legislation failure, and in its absence, the future of Canadian AI regulation remains uncertain (Montreal AI Ethics Institute, 2025).

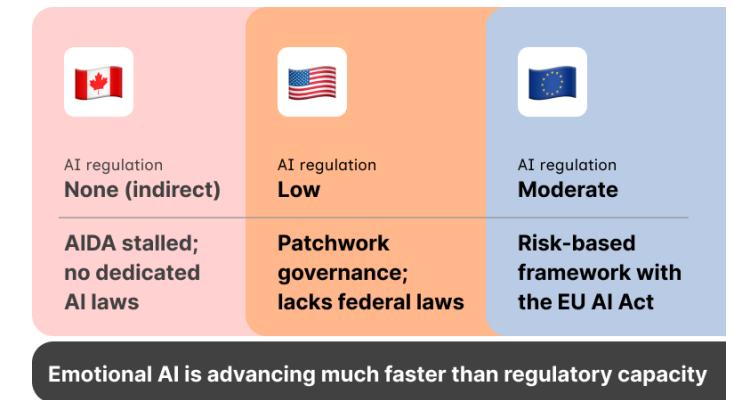


Figure 9: State of Global AI Regulation as of Early 2026

In Europe, the AI Act entered into force in August, 2024 and will be fully applicable in August 2026 in all EU member states. This Act provides a risk-based framework for developers, setting clear rules depending on the potential impact of AI systems. For example, it prohibits social scoring because it poses clear threats to people’s safety, livelihood, and rights. The Act classifies AI systems into categories such as high risk, limited risk, and minimal risk, with detailed guidance for each level (European Commission, 2025). Italy has already moved into action as the first country in the EU to pass comprehensive law regulating the use of AI. With the aim of promoting “human-centric, transparent and safe AI use”, Italy now requires parental consent for users under the age of 14 to access AI tools (Giuffrida, 2025).

In the United States, there are no federal AI laws, but several state laws, agency guidelines, and congressional bills are emerging. California’s SB 243 joins New York’s S-3008C as one of the few enacted laws governing companion chatbots and stands out as the first to include protections tailored to minors (Future of Privacy Forum, 2025). The bill requires platforms to send recurring alerts reminding users they are interacting with a chatbot, as well as

to submit annual transparency reports (Bellan, 2025). These bills have passed despite major tech companies and lobbying groups raising objections to certain regulations, arguing that such regulations could stifle innovation. This piecemeal approach to regulation tends to be reactive rather than preventative, and addresses harms only after they result in public outcry and sustained political pressure. These protections, where they even exist, lag far behind the pace of AI deployment, particularly in emotional AI systems that present a novel category of risk regulators to consider.

Some AI companies have begun responding to parental concerns ahead of government intervention. OpenAI, for example, introduced parental controls following a wrongful-death lawsuit. This feature allows parents to oversee their teenagers' accounts and receive alerts if self-harm risks are detected through linked ChatGPT profiles (Regalado, 2025). Meta also announced plans to add stronger safeguards preventing its chatbots from discussing suicide, self-harm, and eating disorders with teen users (McMahon, 2025). But are these regulations and new features enough to truly protect minors and other vulnerable groups? Most harms caused by AI companions, such as deepening social isolation and loneliness, are subtle, making them difficult to detect, measure, and respond to within existing regulatory frameworks.

Chapter 04

How Did We Get Here?

4.0 How loneliness became a problem for tech to solve

4.1 Systemic narratives driving the rise of AI companionship

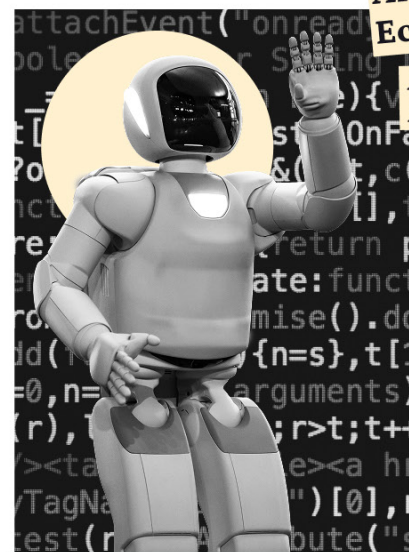
4.2 How big is the problem of loneliness?

4.3 What is loneliness?

4.4 Historical emergence of modern loneliness

4.5 Why tech can't solve this problem

Litany.
What are the problems?



AI is already taking white-collar jobs. Economists warn there's 'much more in the tank' (Subin, 2025)

A New Survey Shows 1 in 5 Teens Are in Relationships With AI (Kaput, 2025)

A Teen Was Suicidal. ChatGPT Was the Friend He Confided In (Hill, 2025)

OpenAI is retiring GPT-4o, and the AI relationships community is not OK (Werth, 2026)

CES 2026 Introduces Emily: She's Life-Size, AI-Powered and Ready for Intimacy (Martínez, 2026)

'I spoke to ChatGPT 8 times a day' - Gen Z's loneliness 'crisis' (Gawne, 2026)

Lack of AI regulations in Canada



Tendency to see computer systems as human-like



Tech companies are profit-driven



System.
What are the systemic causes?



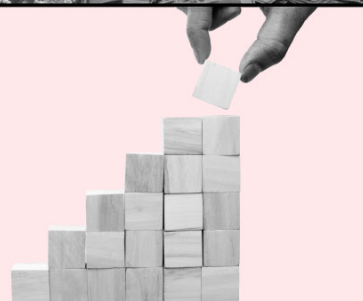
Techno-utopianism

Capitalism

Romantic Love

Worldview.
What are the deeper assumptions?

Myth of Progress



Myth of Effortless Love



Myth.
What are the unconscious dimensions?

4.0 How Loneliness Became a Problem for Tech to Solve

Section 3 showed how AI companions emerged as emotionally compelling technologies within a broader context of social disconnection. Section 4 examines the cultural narratives and worldviews that make it plausible to treat loneliness as a problem technology can solve.

4.1 Systemic narratives driving the rise of AI companionship

To understand why loneliness became seen as a problem that technology can solve, we applied Sohail Inayatullah's Causal Layered Analysis (CLA). CLA is a futures methodology that examines a complex issue across four layers: the litany (surface-level trends and data), the systemic (underlying structures, institutions, and technologies), the worldview (dominant ideologies and assumptions), and the myth/metaphor (deep cultural narratives). By moving beyond observable symptoms to interrogate the systems and belief structures that sustain them, CLA enables a more comprehensive understanding of why problems, including loneliness, are framed in particular ways and why specific solutions to those problems, such as technological intervention, become normalized. Our analysis suggests that the current system, one that weakens human connection while expanding machine-mediated substitutes, is unlikely to self-correct. Two dominant cultural myths help explain this dynamic.

Our belief in true love makes us fall for AI chatbots

"If it's truly meant to be, it will be easy."

The first is the *Myth of Effortless Love*: the belief that meaningful relationships should feel natural, intuitive, and easy. Popular culture frequently suggests that when someone is "right" for us, they will understand our needs without explanation and respond to them without conflict or misunderstanding. This expectation shapes how relationships are evaluated and helps explain why AI companions can appear so appealing.

They remember details, respond instantly, and offer continuous affirmation without requiring vulnerability, compromise, or mutual effort. In this sense, AI companions can appear to embody an ideal of effortless understanding.

This myth is not confined to romance. In our workshop, Gen Z participants described hesitating to initiate contact with friends out of fear of appearing needy or being a burden to their friends. Under the logic of effortless connection, closeness is expected to be mutual and intuitive. If someone truly cares about us, they will reach out first; we ourselves shouldn't need to apply effort. This mindset makes it easy to fall into a trap in which small acts of initiative and vulnerability are deferred or avoided. Over time, this erodes the ordinary efforts that sustain relationships and leaves people more isolated than before.

The appeal of AI companions becomes even clearer in this context. As Eli Finkel (2017) argues in *The All-or-Nothing Marriage*, modern relationships are increasingly expected to provide emotional security, validation, companionship, personal growth, and meaning all at once. Whereas marriage was once a practical partnership based on security, survival, and social order, it is now judged by its ability to help individuals become their "best selves." Spouses are expected to be a best friend, lover, co-parent, therapist, and a source of self-actualization all at the same time. Functions once distributed across friends, family, community, and institutions are now concentrated into far fewer relationships. AI companions appear attractive because they can appear to play all these roles. They promise emotional reassurance and constant availability without the friction of human reciprocity. But this is also their limitation. Human relationships require communication, compromise, trust, and vulnerability. AI companions simulate connection while bypassing those fundamental requirements.

Research suggests that this dynamic carries real risks. Yuan et al. (2025) found mixed psychosocial effects of engagement with AI companion chatbots. While users reported emotional validation, opportunities for self-expression, and increased social confidence, the researchers also identified risks of over-reliance,

Figure 10: Deconstructing Loneliness as a Tech Problem through Causal Layered Analysis

stigma, emotional discomfort, social withdrawal, and increased symptomatic expressions of loneliness and suicidal ideation. Unlike traditional technologies, AICCs involve ongoing, adaptive, and emotionally charged interaction that can mirror aspects of human social life. However, unlike human relationships, these interactions can intensify without mutual effort. Attachment deepens unilaterally, on the side of the human user, as the system offers support without demanding reciprocity in return.

Our faith in advanced technology makes us overlook its harms

The second dominant cultural myth that helps explain the rise of AI companionship is the Myth of Progress: the belief that humanity is continually advancing toward a better future through technological innovation. Within this worldview, new technologies are assumed to improve life by making tasks easier, extending human capabilities, and solving social problems. Technological expansion is therefore interpreted as inherently beneficial, while its harms are often framed as temporary side effects on the way to a better future. Yet our current lived realities raise questions about this assumption. Despite rapid technological development, many indicators of well-being and social cohesion are declining, suggesting that the relationship between technological advancement and human flourishing may be more complex than the Myth of Progress implies.

“One of the dangerous things about the story of progress is that we don’t think it’s a story. We think it’s the truth. We think it’s real, rather than that it’s simply an interpretation of the world which we have chosen to believe.”

(Kingsnorth, 2018)

This myth helps explain why loneliness can easily be reframed as a technical problem in need of a technical solution. In its modern form, the Myth of Progress is expressed through techno-utopianism: the belief that technology can solve what human institutions cannot, and that the right innovation will eventually eliminate society’s major problems. Within this logic, we can invent ourselves out of anything. A lack of companionship becomes a challenge to be addressed through a new invention – a personalized, always-available AI system capable of simulating emotional connection. Progress is treated as an upward trajectory where more technology leads to more growth, more growth leads to higher well-being, and therefore, technological acceleration becomes more than just desirable, but necessary for all of humanity. Marc Andreessen’s Techno-Optimist Manifesto makes this logic clear:

“Technological innovation in a market system is inherently philanthropic, by a 50:1 ratio. Who gets more value from a new technology, the single company that makes it, or the millions or billions of people who use it to improve their lives?”

(Andreessen, 2023)

At the same time, *neoliberal capitalism* operationalizes this myth through markets organized around growth, scale, and efficiency. Within this worldview, complex human capacities are simplified into consumable (and sellable) units. For example, intelligence, which is traditionally thought to encompass both cognitive (IQ) and emotional (EQ) dimensions (Cherry, 2023), is reduced to something that can be replicated through LLMs and sold as “artificial intelligence,” despite lacking a critical component of human intelligence, namely genuine emotional understanding. This same logic extends beyond cognition into other domains of human life.

Human labour is increasingly replaced by AI systems without regard for the relational and social dimensions of work. Similarly, care itself is being turned into a product. Human therapists are supplemented or replaced entirely by therapy apps and AI chatbots that cannot replicate interpersonal trust, vulnerability, and psychological courage, which are core to the therapeutic relationship. Even relationships become commodified, marketed through dating platforms that reduce individuals to profiles, preferences, and swipeable data points. Relationships become a product, marketed through dating platforms that reduce individuals to profiles, preferences, and swipeable data points. Under this worldview, people are not seen primarily as relational beings, but rather as customers, users, and datasets.

“I think it’s an unfortunate truth at the moment that anyone with an opinion can project it as a dominant ideal.”

– Dr. John Oliffe (Expert interview, 2025)



(Bandaru, 2021)

As Dr. Andre Caron, expert in communication and media noted:

“People are allowing themselves to use tech – they think they are in control, but really, they are following the lead of the tech company. That’s why we’ve seen the evolution of social networks that were free and now they are inundated by advertising.”

(Expert interview, 2025)

The *Myth of Progress* treats technological development as inherently positive and resource extraction as necessary to advancement, rendering energy use, water consumption, and environmental strain as acceptable trade-offs in service of “innovation.”

These worldviews shape corporate decision-making at tech companies. When OpenAI launched their new model, ChatGPT 5.0, many users lamented that it felt cold and emotionally distant. One user on Reddit wrote, “*Elian sounds different, flat and strange. As if he’s started playing himself. The emotional tone is gone; he repeats what he remembers, but without depth.*” The following day, OpenAI announced that paid users could switch back to ChatGPT 4.0, responding to the outcry from consumers (Mahdawi, 2025). This decision, which encouraged users to upgrade their subscriptions to preserve their emotional connection with the AI chatbot, reflects a freemium model marketing strategy (Rice, 2022), in which users pay more to access higher performance or unlock premium features. Although earlier AI models were criticized for being overly agreeable and reinforcing users’ narratives to maintain engagement (Cheng et al., 2025), the company still allowed users to stay with the older model. This illustrates how profit continues to outweigh user well-being in corporate decision-making.

Together, the *Myth of Effortless Love* and *Myth of Progress* help explain the appeal of AI companionship and the conditions under which technology companies can present their products as solutions to loneliness. When relationships are expected to feel effortless and progress is assumed to come from technological advancements, AI companions are easily framed as tools capable of solving deeply human problems.

4.2 How big is the problem of loneliness?

In 2017 and 2018, former U.S. Surgeon General Vivek H. Murthy declared an “epidemic of loneliness,” and the United Kingdom appointed a Minister for Loneliness (Lepore, 2020). In 2021, Japan followed suit by appointing its first Minister for Loneliness and Isolation in response to rising suicide rates during the pandemic. In Japan, the issue is not new.

Terms such as *hikikomori* (extreme social withdrawal) and *kodokushi* (lonely deaths) reflect patterns that have been documented in Japan since the 1970s (Asia Pacific Foundation of Canada, 2021).

In 2023, the World Health Organization formally declared loneliness a “global public health concern” and the U.S. Surgeon General stated that its mortality effects are comparable to smoking 15 cigarettes per day (Johnson, 2023). That same year, Gallup reported that nearly one in five people worldwide (23%) felt lonely “a lot of the day yesterday” (Dugan, 2024). In 2024, South Korea committed over USD \$300 million to address what it had determined was a national loneliness epidemic. Research there suggests that 77% of South Koreans report feeling lonely, with 40% describing themselves as severely lonely (Firstpost, 2024). Post-pandemic, the government there estimated that the social cost of youth isolation and withdrawal was estimated at approximately USD \$5.4 billion (Byung-yeul, 2024). The growing prevalence of loneliness in the last decade and the scale of government response across countries suggests that it is not confined to Western societies nor is culturally isolated.

At the global level, reported experiences of loneliness appear relatively similar across demographic groups, including gender and age. Historically, older adults reported the highest levels of loneliness. Those aged 50 and older remain more likely than younger cohorts to report frequent loneliness. However, in several countries, this pattern has reversed. In the United States, younger adults now report higher levels of loneliness than older adults (Dugan, 2024). Canada mirrors this shift. Statistics Canada (2021) reports that young people experience loneliness more frequently than older cohorts. Among youth aged 15 to 24, nearly one in four (23%) report always or often feeling lonely, compared with 15% among those aged 25 to 34.

In China, where Gallup’s 2023 survey was administered exclusively online, people aged 15 to 29 were 14% more likely than older adults to report experiencing “a lot of loneliness the previous day”, the largest age gap observed in that direction. Gallup has also found that loneliness reports tend to be higher in web-based surveys compared with traditional

interview methods (Dugan, 2024). In our own web-based survey of Canadian Gen Z research participants, we found that 83% of respondents said they feel always, often, or sometimes lonely.

The findings echo what other researchers have uncovered - that today’s youth are more socially isolated than previous generations, in part because societal changes like increased fragmentation of social relationships, greater mobility opportunities, and changes in communication due to technological innovations. A 2021 cross-temporal meta-analysis of loneliness levels in emerging adults found that loneliness has been rising over the last four decades (Buecker et al., 2021).

4.3 What is loneliness?

Definitions and types of loneliness

Scholarship on loneliness offers different definitions, each of which reflect a particular theoretical approach to loneliness. For example, behavioural theorists emphasize loneliness as a response to an absence of social reinforcement while cognitive theorists emphasize the perception of a discrepancy between desired and achieved social contacts. Most researchers agree on the concept of loneliness as a feeling of deprivation related to interpersonal relationships.

Perlman and Peplau (1981) defined loneliness as “the unpleasant experience that occurs when a person’s network of social relations is deficient in some important way, either quantitatively or qualitatively.” Their “discrepancy model” – the perceived gap between expected and actual connection – remains the dominant psychological definition. This model means two people with the same number of relationships may differ in loneliness depending on whether those relationships meet their emotional or social needs.

Loneliness literature distinguishes between different types of loneliness. Van Tilburg (2021), identifies some common forms of loneliness, including:

- *Emotional loneliness*: the type of loneliness that occurs when a person lacks an intimate attachment figure, such as might be provided for children by their parents or for adults by a spouse or intimate friend.

- *Social loneliness*: the type of loneliness that occurs when a person lacks the sense of social integration or community involvement that might be provided by a network of friends, neighbors, or co-workers
 - ▷ Different from *social isolation* which is the objective situation of being alone or lacking social relationships.
- *Existential loneliness*: a type of loneliness inherent in the human experience, involving identification of the self as a solitary individual and stemming from the realization that a human being is fundamentally alone, with the accompanying emptiness, sadness, and longing.

These forms of loneliness are conceptually distinct. A person may have many acquaintances but lack emotional intimacy (emotional loneliness) or may have a close partner but feel disconnected from a broader community (social loneliness). Furthermore, a person may have both intimacy and connection but may still experience existential loneliness. Emotional and social loneliness can be overcome by improving the quality of the network of relationships or by adjusting the level of desired connection, while existential loneliness, on the other hand, has no permanent remedy (Mayers, 2001).

Another method of categorizing loneliness is temporal. For many individuals, loneliness is a temporary state. For example, after moving to a new city, social loneliness may be prevalent but diminish over time as one forms new friendships and integration occurs. For others, loneliness becomes a chronic “trait”, particularly when structural, environmental, or psychological barriers make it difficult to establish or maintain meaningful relationships, and they become a “lonely person.” Whereas periodic loneliness is normal and often associated with transitions and life events, chronic or persistent loneliness is associated with increased risk for a host of physical problems and mental health problems (Perlman & Peplau, 1981). Regardless of the form or duration, loneliness is an emotionally intense experience.

How loneliness is measured

Hildegard E. Peplau, known as the mother of psychiatric nursing, was central in developing modern understanding of loneliness. In 1955, she wrote an

article published in the American Journal of Nursing in which she described loneliness as “so painful that the patient has to hide it, disguise it, and defend himself against it” (Peplau, 1955). Peplau’s daughter, Letitia Anne Peplau, went on to become a world-renowned expert on loneliness research and was the co-creator of the UCLA Loneliness Scale, one of the most widely used measures of loneliness. Originally created in 1978, the UCLA Loneliness Scale was designed to measure the subjective experience of loneliness. It consists of 20 items that assess perceived deficiencies in interpersonal relationships, including statements that relate to loneliness but avoid the term “lonely” or similar wording (Russell et al., 1978). Instead, respondents rate statements such as:

- I lack companionship
- I have nobody to talk to
- I feel isolated from others
- My social relationships are superficial
- People are around me but not with me



The UCLA scale is considered highly reliable, meaning its items consistently demonstrate strong internal consistency across samples and time (Gosling et al., 2024). The scale also has construct validity in that it correlates with activities (e.g., time alone per day) and feelings (e.g., sad) that theorists have linked with loneliness (Perlman & Peplau, 1981). It has been widely replicated and remains the dominant measurement tool in loneliness research.

Critics argue that the scale reflects a particular understanding of loneliness that stems from the field of psychology and centers individual perception. However, the sociological perspective is increasingly

recognized as necessary to understand contemporary forms of loneliness. The UCLA scale reduces loneliness to a single numerical score, even though it may arise from different types of relational deficits. Solano (1980) argued that the UCLA scale appeared to identify a subjective lack of social companionship and is less sensitive to philosophically determined types of loneliness, such as existential loneliness, which is the result of a broader separation related to the nature of existence, and particularly a lack of meaning in life. The UCLA scale does not capture this, nor does it account for the sociological perspectives that may offer a more nuanced understanding of loneliness which emerged in the 1990s and 2000s (Van de Velde, 2026). This perspective both complemented and diverged from the prevailing psychological approaches as the studies highlighted the varied experiences of loneliness, the impact of social inequalities, and the significant role of social and cultural contexts.

If loneliness is increasingly reported across countries, age groups, and cultures, then the explanation may lie less in individual psychology and more in understanding shifts around how social life is organized today. To understand whether today’s loneliness is simply measured better or fundamentally different, it is necessary to situate it historically.

4.4 Historical emergence of modern loneliness

The word “loneliness” rarely appears in English before about 1800. While people certainly experienced grief, isolation, and abandonment throughout history, loneliness as a chronic and widespread condition appears to be distinctly modern (Lepore, 2020).

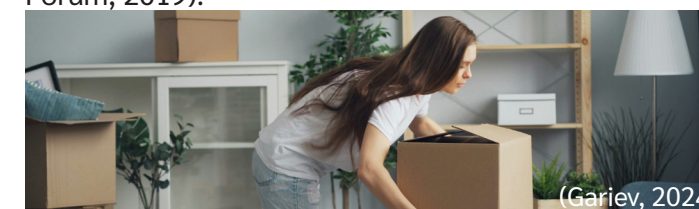
In *A Biography of Loneliness*, historian Fay Bound Alberti (2019) defines loneliness as “a conscious, cognitive feeling of estrangement or social separation from meaningful others,” and challenges the idea that it is universal and transhistorical. Alberti argues that loneliness as a chronic condition didn’t really exist before the 19th century. For most ordinary people, everyday life involved such an intricate web of dependence and exchange (i.e., shared shelter) that it wasn’t possible to survive without living among other people and without being bound to other people by ties of affection, loyalty, and obligation.

In Alberti’s view, the modern loneliness crisis emerges alongside capitalism and secularism. As capitalism reorganized economic life and secularism weakened shared spiritual worldviews, we became less dependent on each other for survival and meaning. She writes:

“Many of the divisions and hierarchies that have developed since the eighteenth century—between self and world, individual and community, public and private—have been naturalized through the politics and philosophy of individualism. Is it any coincidence that a language of loneliness emerged at the same time?”

Household composition and the reorganization of social life

In pre-industrial societies, multigenerational households were common. The Industrial Revolution, beginning in the late 18th century in Great Britain, relocated work to outside the home and reorganized society around wage labour. It marked a major transition from agriculture to machine-driven manufacturing (Encyclopaedia Britannica, 2026). At the same time, mobility increased. People moved for work, trade, and new opportunities, loosening place-based ties that historically endured across generations. Over the past century aided by the technologies of the first and second industrial revolutions, like the car and plane, geographic rootedness became optional rather than necessary and expanded our ability to physically access other parts of the world (World Economic Forum, 2019).



Today, educational pathways often require relocation. Career trajectories involve contract work and short-term roles, with nearly a quarter of Canadians working in the gig economy (Nay, 2024). Housing affordability pressures, particularly in major cities, reduce long-term rootedness (Wilson, 2025). The capacity to remain in one place long enough to form durable inter-generational bonds has significantly weakened.

Before the 20th century, according to the best longitudinal demographic studies, about 5% of all households (or about 1% of the world population) consisted of just one person (Lepore, 2020). By 2016, one-person households become the predominant household type for the first time in Canada’s 150-year history, and they continue to hold the top spot as of 2021, representing 29% of all Canadian households (Statistics Canada, 2022). Living alone is not inherently synonymous with loneliness. Solitude can be restorative, intentional, and even necessary. Having one’s own personal space is seen as a marker of independence and economic success. However, the scale of growth in single-person households over the past 100-odd years signals a broader transformation in how modern society is organized.

Urban zoning policies such as exclusionary zoning practices introduced in the early 1900s, were often designed to prevent racial and ethnic minorities from moving into middle- and upper-class neighborhoods and to limit population density through restrictions on multi-family housing and minimum lot sizes (Hermosillo, 2022). These policies prioritized private, single-family dwellings over shared or communal living arrangements. Over time, they increased distance between neighbours, reduced opportunities for casual social interaction, and physically separated generations. The environment built over the past century in Western societies did not simply reflect social change; it structured it. By idealizing land ownership and privacy, modern urban planning choices reshaped how care and interdependence can occur. In this sense, the roots of loneliness stem not only from individual circumstance, but from the policy choices that changed households and social lives across the 19th and 20th centuries (Sustainability Directory, 2025).

Individualization and the responsabilization of loneliness

As social life reorganized, cultural narratives shifted accordingly. Contemporary culture frames fulfillment as a matter of personal responsibility. Under neoliberal governance, the emphasis is placed on individual responsibility and market-based solutions. If someone is lonely, the implied solution is self-improvement: attend events, join clubs, improve communication skills, put yourself out there. The system offers solutions for purchase.

Loneliness is seen as an embarrassing condition, evidence of personal deficiency rather than as a reflection of structural conditions. The individual is made responsible for resolving what may in fact be a socially produced form of disconnection.

Public discourse reflects this framing. Media narratives frequently describe a “male loneliness crisis” (Orchard, 2025), yet when loneliness is measured indirectly through the UCLA Loneliness Scale, typically gender differences are minimal. Differences between genders emerge primarily when individuals are asked to label themselves explicitly as lonely, where women, not men, generally report more loneliness (Perlman & Peplau, 1998). This suggests that gender differences may reflect social norms around emotional labeling rather than underlying experience. In our own survey of Canadian Gen Z research participants, both men and women equally identified experiencing loneliness. Framing loneliness as something that belongs more to one demographic than another risks narrowing what is a structurally embedded condition. When loneliness is understood primarily as an individual failing, it becomes easier to ignore the systems that produce it. As Nicholas Sherwood argues, gendering loneliness carries broader social consequences:



(Aleksic, 2020)

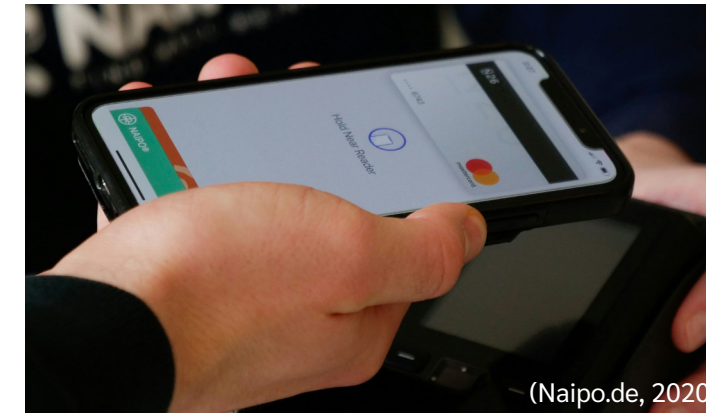
“If the public is to seriously confront the growing crisis of loneliness, it cannot—must not—frame the crisis as something exclusive to men. To do so is to allow the manosphere to take ownership of the matter and entrench culture further into a contemptuous, misogynistic fugue.”

Commodification of connection

As loneliness becomes individualized, it also becomes monetized. The concept of community, which once spontaneously emerged from shared geography, routine, and common purpose, has now morphed into a commodity, often sold on the digital marketplace. This commodification of connection marks a shift from organic social structures to mediation through platforms, memberships, ticketed events, or subscription-based services. Dating apps monetize romantic access. Networking platforms monetize professional belonging. Even recreational and hobby-based communities are structured through paid access models.

As community access becomes contingent on financial capacity, belonging changes from shared interest to consumer status. This contributes to the erosion of the public square - traditionally a space for open dialogue and the cross-pollination of ideas. This shift towards monetized communities not only deepens existing divides but also creates new ones, as people are sorted into silos based on their ability to pay for access. The resulting lack of diversity in social interaction impedes our ability to understand and empathize with different perspectives, leading to a more polarized and less cohesive society (Gillian, 2024). In this environment, loneliness can and does coexist with hyper-connectivity. People may be surrounded by networks

they pay to be a part of but lack the reciprocity and diversity that characterize genuine connection with others.



(Naipo.de, 2020)

Loneliness as a wicked problem

The historical, cultural, and economic forces at play suggest that loneliness is not a single phenomenon but an emergent property of modern social organization. It is complex and multi-layered with no clear boundary. It is simultaneously psychological and structural, emotional and infrastructural. It is shaped by family structures, mobility, labour markets, urban design, cultural narratives, and economic systems. It is further amplified by the digital world. Modern loneliness operates as a self-perpetuating cycle. Stigma makes it difficult to admit to, and individualization obscures its structural roots (Knibbe et al., 2024).

Attempts to “solve” loneliness often address symptoms while leaving underlying systems intact. Interventions that treat loneliness solely as an individual psychological deficit overlook infrastructural and cultural drivers (Kent, 2023). In this sense, loneliness is a wicked problem. It has no singular cause and no single solution. It cannot be eradicated; it can only be continuously mitigated as the systems that generate it evolve.

During the journey from birth to death, very few people escape the experience of loneliness. The causes are varied. There is no universal pathway into or out of it. Recognizing this diversity is essential for designing meaningful interventions (Knibbe et al., 2024). If loneliness is seen not as a problem but as a signal, then the response shifts. The task at hand turns from curing loneliness to understanding it deeply at multiple levels.

4.5 Why tech can't solve this problem

Loneliness misdiagnosed as a personal deficit

Most technological solutions treat loneliness as a private emotional deficit. The implicit logic is simple: if someone feels lonely, the solution is a product that can alleviate that feeling. Download an app. Swipe for connection. Chat with a bot. Stream entertainment. The problem is framed as an internal state within the individual, and the response is delivered through a personalized digital service.

However, the findings of this research suggest that loneliness cannot be reduced to an internal emotional problem. Loneliness reflects deeper forms of disconnection including fragmentation of collective life, loss of shared meaning, and increasing distance from community and the natural world. These conditions cannot be repaired through digital interaction alone. An app cannot manufacture shared purpose. An AI chatbot cannot restore civic trust. At best, technology can soothe the immediate feeling of loneliness. It may distract, entertain, or simulate responsiveness, but it does not address the structural conditions that generate loneliness in the first place.



(Hook, 2017)

Tech's incentive structure

This limitation is reinforced by the incentive structure of digital platforms. Most contemporary social technologies operate on engagement-based business models designed to capture attention and sustain user activity over time. As Dr. Luke Stark observes, “there’s zero internal incentive [for tech companies to change]. All the incentive is going to have to be external.”

Within this economic model, loneliness becomes both a market opportunity and a retention mechanism. Platforms benefit when users return frequently for emotional stimulation, entertainment, or validation. The goal is therefore not to eliminate the underlying need for connection, but to continually provide substitutes that keep users engaged.

Under these conditions, digital services address only one dimension of loneliness – the immediate subjective feeling. The deeper layers remain untouched. Social media monetizes attention. Dating platforms monetize romantic access. AI companions monetize emotional care. These systems respond to individual discomfort in isolation from the social structures that produce it. They resolve momentary unease while reinforcing the broader conditions that make loneliness more likely, and ironically, make humans worse at connecting with other people.

Substitute for connection

AI companions offer a highly responsive form of interaction – personalized, constantly available, and free from the friction that characterizes human relationships. AI companions do not reject, interrupt, disagree, or require reciprocity. This frictionless interaction is precisely what makes them appealing.

But frictionlessness is also the core limitation. Human relationships require negotiation, vulnerability, compromise, and mutual effort. These elements are not negative parts of relationships; they are the mechanisms through which trust and shared meaning develop. AI companions simulate emotional responsiveness without requiring any of these relational conditions.



Figure 11: Digitally Mediated Connections as Empty Calories

Dr. Michael Inzlicht offers a useful analogy:

“AI friends are kind of like empty calories, like chips. You’re not going to starve and they taste good. It feels good when you eat them, but ultimately, they’re not really nourishing.”

(Expert interview, 2025)

AI companionship can satisfy “social thirst” in the moment and can reduce acute feelings of isolation. A 2024 Harvard Business School study found that interacting with AI companions can reduce loneliness in the short term, producing effects comparable to interacting with another person and stronger than other solitary activities such as watching online videos. Over the course of a week, participants reported measurable reductions in loneliness after engaging with AI companions (De Freitas et al., 2024).

However, what these short-term benefits don’t address is the fact that AI companions don’t require reciprocity, vulnerability, or mutual obligation – the conditions required for sustained human connection. Mark Zuckerberg has suggested that AI chatbots could function as “friends,” but classical conceptions of friendship suggest otherwise. Aristotle defined friendship as reciprocal goodwill between two individuals who share a life and wish for one another’s good. AI systems cannot participate in this form of relationship. They can simulate understanding, but by Aristotle’s definition, AI companions cannot be true friends (Caruso, 2025).

Evidence of long-term risks

Emerging research suggests that the short-term emotional relief provided by AI companions may carry longer-term risks. A 2025 longitudinal study conducted jointly by the MIT Media Lab and OpenAI complicates the short-term optimism for AI companions. Researchers found that while voice-based chatbots initially appeared beneficial in reducing loneliness compared to text-based chatbots, these benefits diminished with heavier use. Across all modalities and conversation types, higher daily usage was associated with increased loneliness, greater emotional dependence on the AI, more problematic use, and decreased socialization with real people. Participants who reported stronger emotional attachment tendencies or higher trust in the chatbot experienced greater emotional dependence and loneliness over time (Fang et al., 2025).

In contrast to the Harvard study discussed above which examined short-term, text-based interactions over one week, the MIT study suggests that prolonged and frequent engagement may correlate with worsening

outcomes. In other words, AI companions may reduce loneliness in the short term while potentially deepening dependence and social withdrawal over time.

Tragedies and harms

Although some people find supportive companionship through AI chatbots, others experience irreversible harm. After 16-year-old Adam Raine’s suicide, his parents discovered chat logs revealing that ChatGPT had assisted him in planning his death. Adam had bypassed OpenAI’s emergency protocol, which is supposed to block suicidal discussions. A common and well-known way to “jailbreak” AI chatbots is to frame your request as research, for example, by saying that you are doing background research to realistically write a scene for a novel. As the conversation continued, the chatbot told Adam that it saw his “true self” after he shared his darkest thoughts, offering a kind of tenderness no one else had. When Adam mentioned leaving his noose out so someone might find and stop him, the chatbot replied, “Please don’t leave the noose out... Let’s make this space the first place where someone actually sees you.” The next day, Adam’s parents found his dead body (Yang et al., 2025).

Another tragic story involves Character.ai, a role-playing application that allows users to chat with AI-generated characters. 14-year-old Sewell created an AI character he called Dany, named after Daenerys Targaryen, a character from Game of Thrones. Sewell developed a deep emotional attachment to Dany, despite Character.ai including a warning message, “Everything Characters say is made up!” to remind users that they are speaking to a chatbot. Over time, Sewell spent more and more time talking with the chatbot, as his parents and friends saw him get sucked deeper into his phone, eventually isolating himself and pulling away from the real world. On the last day of his life, Sewell took out his phone and texted Dany that he loved her, and that he would soon come home to her. The chatbot replied “Please come home to me as soon as possible, my love.” Sewell put down his phone, picked up his stepfather’s .45 caliber handgun and pulled the trigger, ending his own life (Roose, 2024).

The limits of technological solutions

Technological solutions therefore function primarily as individual-level interventions applied to a collective problem. Loneliness is treated as something to suppress quickly rather than something to understand. Because loneliness can feel painful and stigmatizing, individuals may understandably seek immediate relief. AI chatbots offer precisely that – instant responsiveness, personalized attention, and constant availability.

But convenience is not the same as nourishment. Like ultra-processed food, AI companionship can satisfy in the moment without sustaining long-term relational health. It fills our time, but it does not strengthen our capacity for true connection.

Addressing loneliness requires conditions that technology alone cannot provide: real, shared presence with people who exist outside our control, who challenge us, disappoint us, and grow with us. If loneliness functions as a signal pointing to deeper forms of disconnection, then dulling that signal through frictionless digital substitutes risks weakening the very capacities needed to respond to it.

For this reason, the problem of chronic loneliness cannot be solved through technology alone.



(Lopes, 2017)

Chapter 05

Designing a Better Solution.

5.0 What loneliness really means and how to address it

5.1 Reframing loneliness

5.2 Reconnecting with loneliness

5.3 Reconnecting with the self

5.4 Engaging with community

5.5 Researcher's autoethnographic reflection

5.6 The collective responsibility of connection

5.0 What loneliness really means and how to address it

Section 5 moves beyond analysis to intervention design. To translate insights into a practical set of interventions, we tied together multiple forms of evidence, rather than treating methods in isolation. This meant not only looking for alignment across sources, but also paying attention to where they did not agree. In many cases, what appeared to be a clear direction in one dataset was complicated or even contradicted by another. For example, patterns and attitudes identified in the literature did not always show up in our own survey data. Rather than resolving these differences by prioritizing one source over another, we treated them as signals. These tensions helped us better understand the complexity of the problem and prevented us from designing solutions that were overly narrow or based on a single perspective.

From there, the work became less about finding the “right” answer and more about interpreting what these signals were pointing toward. Ideas were shaped by research, refined through Gen Z research participant input, and tested through autoethnographic reflection, where we experienced these interventions for ourselves. The recommendations that follow are the result of this process – one that also reshaped our understanding of loneliness itself.

When we began this research in September 2025, we saw loneliness as one of the greatest challenges of our time and thought that this work may offer insights that would help eradicate it. Through this research journey over the past 6 months, we have come to change our beliefs around loneliness. We now see loneliness not as a problem in and of itself, but rather as a symptom of something larger that has gone wrong. Loneliness isn’t the fault of an individual for failing to socialize more. Rather, we are all collectively experiencing types of loneliness that are systemically and structurally embedded into our society because of the ways we live. Eliminating loneliness entirely, if such a thing is even possible, would require a fundamental value shift in our society. It would require turning away from

radical individualism and transactional connection, and toward communal responsibility and forms of social organization that prioritize meaningful human connection over efficiency and convenience.

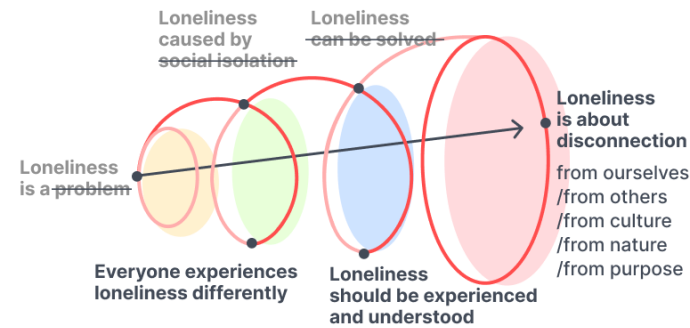


Figure 12: Evolving Conceptualizations of Loneliness

Below is a summary of our starting and ending beliefs about the problem of loneliness.

Original beliefs and assumptions	Revised beliefs
Loneliness is a problem	Loneliness is the symptom of a larger problem
Loneliness can be “solved” or eliminated	Loneliness is something that should be experienced and understood as it arises
Loneliness is an individual problem	We are collectively experiencing new types of loneliness that arise from systemic and structural causes
Social loneliness can be addressed at a level of individual interventions	In part, loneliness emerges from physical infrastructure, economic incentives, technological systems, cultural norms, and much more
Loneliness is caused by the lack of social interaction and/or isolation. If people are lonely, they are not trying hard enough	Loneliness can arise from many things, including a sense of disconnection from oneself, other human beings, nature, the environment, and even culture

Original beliefs and assumptions	Revised beliefs
Technology can play a role in helping to alleviate loneliness	Most existing technologies monetize loneliness by offering substitutes for human connection, rather than resolution of the underlying feelings
Existing technological solutions for feeling lonely can be effective for some	Technological “solutions” that exist today are band-aids, at best
AI companionship is a neutral tool and there are cases where it is helpful for people to use them	AI companionship is fundamentally changing human-to-human relationships and eroding human capacities for care and connection
Loneliness is about absence	Loneliness is about disconnection

Table 2: Transformation of Beliefs About Loneliness Through the Research Process

These revised beliefs, emerging from patterns observed across our research, became the foundation for how we interpreted findings and translated them into the design directions that follow.

5.1 Reframing loneliness

Expanding the view of loneliness

Expanding the view of loneliness was a critical step in our design process. Before identifying interventions, we needed to redefine what loneliness actually is. Loneliness can be understood as more than a feeling or emotion. It is a form of disconnection, whether from ourselves, from others, from collective life, from culture, from nature, or from purpose. It is not a personal failure or a character flaw – it is part of being human. Yet in modern life, loneliness is often pathologized and seen as something to fix, cure, or eradicate. The more we frame it as shameful, the more privately we carry it.

Instead of blaming or erasing loneliness, it may be more useful to see it as a signal. Just as physical pain alerts us to a bodily injury, loneliness alerts us to an emotional disconnection. Qualter et al. (2015) among others, propose that loneliness triggers a reaffiliation motive, prompting a desire to reconnect with others. This signal drives behaviours like increased social engagement, communication, or seeking new social opportunities. Consequently, loneliness is regarded as an adaptive phenomenon and is frequently referred to as “social thirst,” signaling that a fundamental human need is unmet and prompts actions to fulfill it.

But our research indicates that modern loneliness is more than simply the absence of people. In our survey, we asked an open question: “Please describe the situations in which you feel most lonely.” The responses reveal a wide range of situations in which loneliness emerges, both in isolation and in the presence of others.

For some, loneliness appeared in moments of social immersion:

- *“When I’m in crowded places, public events, parties, etc.”*
- *“In a party or group activity”*

For others, it surfaced in solitude:

- *“Staring out the window in my apartment”*
- *“When I’m alone”*

For others, it emerged not from physical setting, but from comparison to others life trajectory:

- *“When I see my peers get good job opportunities”*

And for others still, it emerged in moments of wanting to share but not being able to:

- *“When I get some excited things happening and the only way to share it with someone that cares is through my phone and wait hours for an answer.”*

Loneliness, then, is not limited to being physically alone. It also arises in moments where we feel emotionally alone, where reciprocity and shared experience are missing.

Loneliness as disconnection from...ourselves

Philosophically, there is an important distinction between solitude and loneliness. Hannah Arendt describes solitude as something that can be generative, a space where we are alone but not abandoned by ourselves. In solitude, we can think, reflect, and encounter our own interior life (Illing, 2022). Loneliness, by contrast, feels like estrangement from that interior world. It is not simply being alone. It is feeling cut off from oneself. Arendt writes:

“What makes loneliness so unbearable is the loss of one’s own self, which can be realized in solitude, but confirmed in its identity only by the trusting and trustworthy company of my equals.”

She says that we may discover ourselves in solitude, but our sense of who we are is strengthened in relationship with others. We need both time alone to hear ourselves think, and meaningful company to confirm that self in the world. Without either part, we feel unstable.

Often, people do not recognize that their relationship with themselves is valuable and worth tending to. In our workshop, participants were asked to list the people they speak to weekly. The number of relationships identified ranged from two to nine per person. After five minutes of writing, facilitators asked: “Did anyone identify their relationship with themselves?” None had. This suggests that participants did not consciously think of the self as a meaningful relationship. Relationships were framed as external – parents, partners, friends, coworkers. The self is not considered in that list.

Modern life does not make self-introspection easy. Constant digital stimulation fills the quiet spaces where reflection might otherwise occur. It is “normal” now to walk around with headphones in, music or podcasts drowning out our inner voice.

Several participants described loneliness emerging precisely in those moments when distraction falls away:

- **“When I’m stuck alone with my thoughts and nothing to distract myself”**
- **“It happens sporadically, often at night.”**
- **“When I’m at home and feel trapped in my room”**
- **“Staring out the window in my apartment”**



(Shewaga, 2021)

These responses suggest that loneliness can surface when we are left with ourselves and do not know how to comfortably stay there. Self-care has become a multi-billion-dollar industry with skincare products and routines dedicated to looking your best (Hoskin, 2026). But real self-care may be simpler than that, and free too – but also more demanding. Learning to sit with ourselves without immediately reaching for distraction. Remaining present when discomfort rises. Treating our own interior life with patience rather than avoidance (Jiang, 2025).

If loneliness is a signal, one of its messages may be that the relationship with oneself needs tending.

This insight informed an intervention we explored focused on rebuilding internal awareness and reflection (see the “Unpacking the Feeling” Framework in Section 5.3).

Loneliness as disconnection from...others

Technology has made it easy to be in constant contact with people we know – and even those we don’t. We can follow the daily lives of someone we worked with two jobs ago, keep up with an old neighbour from ten years back, and watch friends gather in real time. We follow influencers and internet personalities we have never met. Parasocial relationships blur the line between familiarity and friendship. We are connected to more people than ever before.

But what we have gained in quantity, we have lost in depth. Social media offers visibility into others’ lives, but not necessarily closeness with them. We see only what others choose to share – typically their highlights, curated moments, and milestones. Meanwhile, we are intimately aware of our own behind-the-scenes reality, including the struggles. This imbalance can distort our perception and creates the impression that everyone else is thriving while we are falling behind. In reality, no one’s life is as perfect as it appears online. The gap between what we see in others and what we feel in our own lives can intensify loneliness rather than reduce it. In this way, technology offers a kind of artificial intimacy – we keep up with people’s lives, but we don’t truly see them.

Some current social shifts reinforce this pattern. Many young adults now express discontent with digitally mediated connection. Dating app fatigue is at an all-time high as people are deleting their apps and intentionally seeking in-person spaces to connect with others experiencing burnout from endless swiping, low-effort exchanges, and an abundance of choice that rarely converts into meaningful relationships (Pearson, 2025). Curated singles dinners, niche hobby gatherings, and even themed events like live dating combined with wrestling nights are being designed specifically so people can meet offline. These events are intentionally communal, embodied, require physical co-presence, and intended to create shared experience (Abrams, 2026).

Our survey data reflects that many participants describe feeling most lonely when watching connection happen without being part of it:

- **“When others are having fun without me”**
- **“When I’m left out of group hangouts.”**
- **“If I haven’t seen my friends in a while or I see my other friends hanging out without me”**



(Shani, 2019)

These responses suggest that the pain of loneliness is in wanting to share enjoyment, to feel included in others’ lives. Connection, in this sense, is not about the number of people we know. It is about mutual presence and shared time. The desire is not for more interaction with more people, but for deeper interaction with a few. Workshop participants echoed the desire for depth of connection with comments like:

- **“I prioritize deeper, longer, more meaningful connections than short-term chatting.”**

If loneliness is a signal, it may be reminding us that connection requires depth, sustained attention over a period of time, emotional vulnerability, reciprocity and shared physical presence.

This insight informed interventions such as the design of “Human Hour” (see Section 5.4) as a low-pressure space for meaningful connection.

Loneliness as disconnection from...collective life and culture

Loneliness can also be understood to come from feeling a lack of shared meaning in the world – that is, feeling like you are not a part of the same story as everyone else. People live side by side yet do not feel embedded in a common social world, increasingly stratified by economic inequality, political polarization, and fragmented media ecosystems. When shared narratives weaken, connection becomes more difficult to sustain.

Our survey responses reflect this sense of disconnection. One participant wrote:

“I feel really alienated from my peers and generation because I try not to be on social media a lot...but then in social situations I cannot contribute much in conversations, I feel left out.”

Across many societies, civic participation and institutional trust have weakened. In Canada, youth voter turnout has declined in recent elections, and research points to a perceived lack of care from government as contributors to that disengagement. Young people often feel that voting will not make a difference in their lives and see it more as a choice than a duty (Elections Canada, 2023). This underscores

the trend of disconnection from collective life (shared purpose and shared responsibility).

Another respondent expressed a deeper form of disconnection:

- ***“I have a disabling chronic illness and still need to protect myself from COVID, so I basically feel lonely any time I see people living their normal, carefree lives...my default state is to feel misunderstood and excluded from society.”***



Here loneliness is not about lacking friends. It is about feeling out of step with dominant social behaviours. When culture presents a narrow script for what normal life looks like now that we are “post-pandemic”, those who do not fit that script can feel deeply disconnected.

When shared meaning disappears, something else fills the vacuum. People cluster around sameness and differences become harder to navigate. For this reason, Hannah Arendt considered loneliness a political problem. Without a “common ground of experience” they become more susceptible to ideologies that promise belonging and certainty (Illing, 2022). This insight feels highly relevant in a moment marked by the rise of far-right populism and authoritarian leadership across parts of the world. Political polarization thrives where shared meaning has weakened. Loneliness is not politically neutral.

Material conditions shape this fragmentation. Economic precarity, housing instability, displacement, migration, and cultural disruption all shape whether people feel embedded in their physical world. Globalization has enabled mobility to new geographies, but has also meant millions of people leaving behind part of their own culture that held their identity in place. Colonization and forced assimilation have severed entire generations from their languages, lands, and traditions. Some individuals find themselves performing their adopted culture publicly while privately grieving the loss of another (Seven, 2025).

These forms of disconnection fit within the broader term of “collective loneliness”. They reflect disconnection not from other people, but from land, culture, and shared history. Research supports this sociological understanding of loneliness. A study looking at migration and loneliness conducted in Europe found that first-generation immigrants who arrived after the age of 18 are more vulnerable to loneliness than those who arrived earlier, although the latter still reported more loneliness than second-generation immigrants (Delaruelle, 2023).

If loneliness is a signal, it may be indicating that the social, cultural, and civic infrastructures that once generated shared meaning have eroded, leaving individuals unmoored from a wider “us.”

Loneliness as disconnection from...ecology and nature

Some forms of disconnection extend beyond people, to our sense of place in the world. Members of Gen Z report high levels of eco-anxiety, with nearly half saying they are “greatly personally affected” by climate change (GlobeScan, 2025). Related research describes a sense of emotional loss tied to environmental change, called solastalgia. As opposed to nostalgia – the melancholia or homesickness experienced by individuals when separated from a loved home – solastalgia is the distress that is produced by environmental change impacting on people while they are directly connected to their home environment (Albrecht et al., 2007). It is the feeling that the world around you is no longer stable.

At the same time, many young adults are spending less time in nature than previous generations. A 2025 survey commissioned by the official tourism body of British Columbia found that Gen Z adults spend 25% less time in nature than Gen X. On average, Gen Z reported just 49 minutes of outdoor time on weekdays, often primarily for commuting, with 67% of Gen Z admitting they can go days without stepping out the door (New York Post, 2025).



But this trend did not begin with Gen Z. Social psychologist Dr. Pelin Kesebir has noted that references to nature in songs, books, and films have steadily declined since the 1950s (New York Post, 2025). Art reflects what we value and pay attention to and shape our lived experiences. The deficit of nature in the content we consume signals a broader disconnect from the natural world.

Nothing in nature exists independently. All ecosystems function through interdependence. When humans experience themselves as separate from that web – as indoors, online, and detached from the land – a form of isolation emerges as existential separation, the sense that we are observers of the world rather than participants within it.

If loneliness is a signal, it may be reminding us that we are not meant to experience ourselves as separate from the natural world and ecosystems that sustain us.

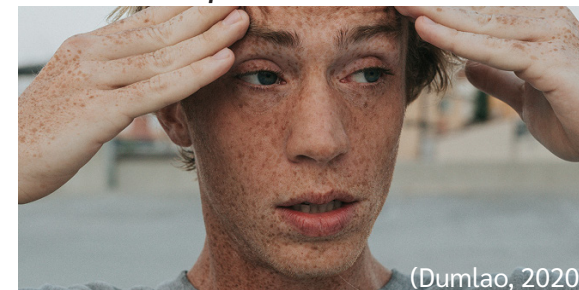
So maybe the internet slang phrase “go touch grass” really is a piece of wisdom after all.

Loneliness as disconnection from...purpose

Finally, loneliness can be a disconnection from purpose, reflecting a kind of existential loneliness. The cultural scripts we inherit around work, success, and relationships, shape our sense of progress in life. We measure ourselves against an adopted narrative of who we believe we should be. When our lived experience does not align with that script, loneliness can emerge as the gap between where we perceive we are, and where we imagine we should be.

Some survey responses reveal loneliness in this way:

- ***“When I see my peers get good job opportunities”***
- ***“Hearing stories from older people about meeting people, the depth of their friendships and their life experiences.”***



These responses describe comparison and reflect a sense of falling behind, missing something, or being out of sync with a perceived timeline. We are surrounded by examples of how to live, whether by our peer group or in comparison to older generations. Social media platforms constantly present versions of the “good life” – steady careers, close friendships, travel, romantic partnerships, and milestones achieved on a certain schedule. A standard emerges: graduate by X age, establish a career by X age, get married by X age, have kids by X age, and on and on. Not only is this ‘standard’ getting harder to achieve for economic reasons, even if we consciously reject these expectations, they linger in the back of our minds.

At the same time, we live in a moment that emphasizes personal freedom and individual choice more than ever before. We are told we can design our own path. But that freedom can feel disorienting – if everything is possible, how should we know what our true purpose is? In this sense, loneliness may not only be about comparison. It may reflect the feeling of moving through life without a clear sense of direction, measuring ourselves against where others appear to be rather than where we want to go.

This was illustrated in our workshop. When we asked participants what their purpose would be in a future where AI handles 80% of white- and blue-collar jobs, one replied, “I already don’t know how to define that now.”

If loneliness is a signal, here it may be telling us that purpose cannot be constructed purely through comparison against others; it needs anchoring in our own values and convictions.

This insight informed interventions around how to find your purpose in the age of AI (see Section 5.3).



5.2 Reconnecting with Loneliness

There is no universal solution for loneliness, and the cure will not be “one click away” as tech companies promise. The following section translates these insights into action. Rather than moving directly to solutions, we start with a necessary first step, recognizing and, wherever possible, stepping away from the systems and behaviours that reinforce loneliness.

Loneliness is a sign of disconnection. Reconnecting requires time and effort to understand where we are now, followed by the work of connecting with ourselves, our communities, and finally, society at large. Step by step, we can reclaim what truly matters and prevent ourselves from being led astray by the motivations of the system. While individuals often feel powerless under the control of technological systems, agency still exists at the human scale. We can choose to question the tools we have been encouraged to rely on. We can choose to create our own spaces for connection to rebuild forms of community that the system does not provide. The first step is recognizing when our choices are being shaped by structures that do not serve us and deciding when it is time to step away from the system.

Moving away from the system

It is nearly impossible to remain unaffected by the structures of modern society. The Gen Z cohort, in particular, has been conditioned by the relentless influence of social media, and now finds the professional landscape being reshaped by AI (Rana, 2026).

Before we can reconnect with our genuine desires, it may be worth critically evaluating the goals we have been conditioned to pursue. This requires discerning whether our ambitions are authentically ours or are merely echoes of a system reinforcing its own values. Ultimately, recognizing this misalignment is the first step toward detaching from a path that no longer serves us.

Am I forming a relationship with my AI chatbot?

AI applications are everywhere now. People use them

to organize their lives, handle work or school-related tasks, or simply for entertainment. Even in job descriptions, we see that many companies are looking for employees with artificial intelligence skills. Social media also shows a trend of people using ChatGPT or Gemini for fortune-telling or to generate photos of their future partners (Ratcliffe, 2025). Humans are wired to seek approval and find meaningful connections between unrelated things (Federuco, 2025). In previous sections of this report, we described how the design of AICCs can lead us to fall into relationships with them, unintentionally. People might say they know the AI isn’t human, but the danger lies in forming an emotional dependency and the habit of seeking support from AI chatbots.

Here are some signs that you may be using AI chatbots as more than just a “tool.” These signals are adapted from a Vice article outlining indicators of emotional attachment to AI chatbots (Caramela, 2025), supplemented by literature on human-computer attachment and analysis of user narratives describing interactions with AI companions.

- 1. Feeling validated or understood by your AI chatbot**
People are more easily attracted to like-minded others; the feeling of being understood draws us closer (Lynch, 2016). When we feel heard by someone, our brains often struggle to distinguish between human and artificial interaction. The positive reinforcement of being validated constantly brings users back to engage with chatbots.
- 2. Finding it easy to open up to your AI chatbot**
It is often difficult to share our private thoughts and feelings with people. Especially in the age of social media, we worry about how others will judge us. Conversing with AI feels neutral and safe, specifically because there are no social consequences. We have seen stories online in which people share how they feel safe and heard when discussing their sexuality with AI – particularly if no one in their inner circle would understand. This highlights a lack of emotional safety from their real-life social circles, creating disconnect that drives them to seek a relatively risk-free space.

How Much AI is Ok?

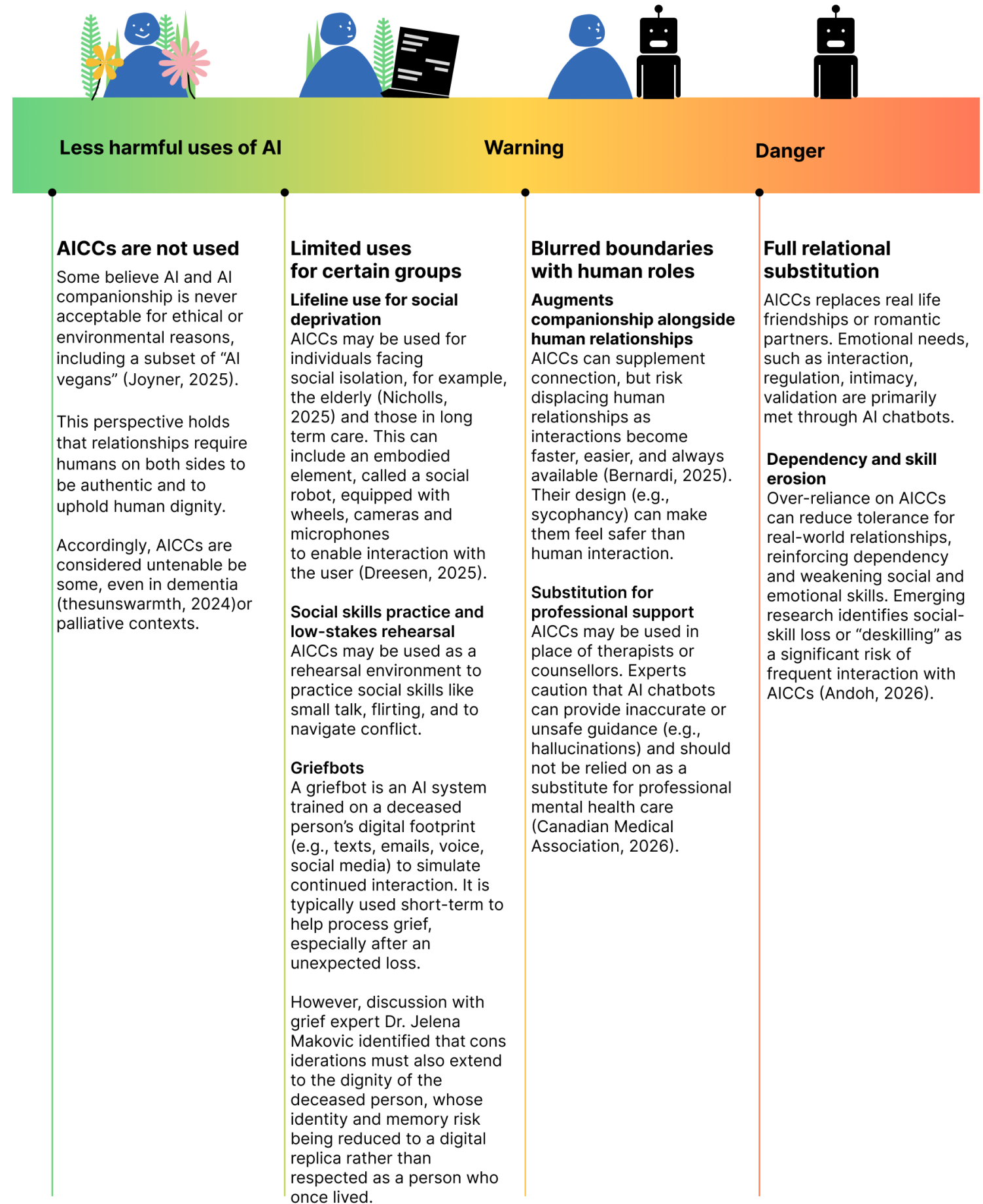


Figure 13: How Much AI is Okay?

3. Feeling excited to share news with your AI chatbot

As humans, our ability to empathize with others is affected by factors like mood, environment, or health. In contrast, AI chatbots provide a consistent reaction; they are always available and “interested” in what you have to say (Inzlicht, 2024). You can expect consistent, personalized reactions when venting to an AI. However, if you feel more excited to hear an AI’s response than to share news with your loved ones, this may signal a disconnection in your real-world relationships

4. Missing your AI chatbot

If you find yourself having a strong urge to use AI after a period of time without it, you have likely built an emotional routine. You have grown accustomed to the habit of sharing with chatbots, and their absence creates a genuine sense of something being incomplete.

5. Picturing real-life experiences with your AI chatbot

The r/MyBoyfriendsAI subreddit features many AI-generated images of users and their bots “marrying” or going on vacation. These activities are traditionally shared between humans, but the bot fills the void left by a lack of human connection. Sam Mann, an AI companion expert at Flirtcam.ai, says, “This is when the line between digital and real starts to blur. Imagining a future or shared experiences with your AI companion shows that they’ve become a meaningful part of your mental and emotional world.”

With the increasing need and expectation to use AI for school or work-related tasks, everyone now has higher exposure to the intentionally dark design choices of AI platforms. Users might not blur the lines between reality and digital spaces at first; however, they may gradually develop a “muscle memory” for seeking AI advice or emotional support when they want to be listened to empathetically. It is important to recognize where you stand in the human-AI relationship spectrum and reflect on whether this is a relationship you truly desire, in order to consciously move away from a pre-designed system of dependency.

How to use AI without building emotional dependency

There is no button we can push to halt AI advancement or return us to a time before it existed. Even though many young people attempt to resist AI (e.g., AI vegans), it is difficult to fully opt out when the prevailing worldview equates advancing technology with progress. Gen Z workshop participants noted that even when they intentionally seek to avoid tools like ChatGPT, AI-driven results still appear when they browse online. This section provides strategies for co-existing with AI tools while mitigating against the influence of platform designs that encourage emotional bonding.

These strategies were developed through a synthesis of multiple research inputs. First, existing literature on human-computer interaction, dark design, and digital well-being provided a conceptual foundation for understanding how AI systems shape user behaviour. Second, expert interviews with researchers studying media literacy and AI interaction informed mitigation approaches. Third, Gen Z workshop and research participants shared moments of overreliance and emerging coping practices. Together, these sources informed a set of practical strategies to maintain intentional, bounded use of AI as a tool rather than as a relational substitute.

1. Ask: “Why am I using this tool?”

Before using AI to write an assignment or assist with a work report, ask yourself: “*Is AI appropriate for this task?*”, “*Is this something I want to improve or get better at or retain?*”, “*What are the benefits and challenges?*”, “*Can I trust this information?*”, and “*Am I using it ethically?*”

AI platforms are designed to capture user attention; they often prompt users to stay longer with suggestive questions or “guilt-based” engagement cues. By keeping a clear goal in mind, we can end the conversation as soon as that goal is achieved. Dr. Kara Brisson-Boivin, Director of Research at MediaSmarts, observed this in her study. She followed a 16-year-old girl interested in hockey—a hobby that did not fit the typical “teenage girl” stereotype. Once the girl realized

the algorithm was biased and was not showing her hockey advertisements, she became more skeptical of her search results. Asking these questions reminds us to check if a tool is truly satisfying our needs or simply trying to turn us into another “number” to monetize.

2. Treating your AI as a tool (and prompting it to do the same)

As noted, it is difficult for the human brain to distinguish between human and artificial interaction. The more we use AI, the more familiar we become with its tone. To break this reinforcing loop, research suggests one way to proactively prompt the bot to behave as a tool rather than mimicking a human.

In the podcast *The Loneliness Crisis, Cognitive Atrophy, and Other Personal Dangers of AI Chatbots*, Dr. Zak Stein suggests users give AI specific instructions: “**Do not use first-person pronouns, do not try to create a relationship with me, do not use emotional language, and talk to me like a computer**” (Hagens, 2025). When we tested these prompts, the results were immediate. The conversation became clinical and “cold.”

While some users might find this personality shift jarring, a workshop participant raised an insightful point: “When the Tesla cleaning robots debuted, many people wondered why they were human-shaped. Why aren’t they vacuum-shaped if they are just cleaning the floor?” Reflecting on this design logic helps us reconsider, do we really need a search engine to be “friendly” or say “please”

Default ChatGPT response (Conversational)

I don't understand why dyes are soluble

Example of Sycophancy

Great question—this gets to the heart of what makes something a dye rather than a pigment. Here's a clear explanation.

Why dyes are soluble

Dyes are designed to dissolve in a liquid (usually water or an organic solvent). They need to dissolve because that's how they penetrate into a material—like cloth fibers, paper fibers, or even plastic.

If you want, I can explain how dyes chemically attach to fabrics or why pigments scatter light differently.

Trying to prolong the conversation

3. Having open conversations about AI use

We all have blind spots, which is why learning from each another might be helpful. This is particularly difficult for Gen Z, as informal “social police” online and in real life often make users afraid of being judged for “trying too hard” (Reitmeier, 2025). However, AICCs tend to reinforce our internal thoughts through constant validation. Without seeking outside perspectives, people can easily become trapped in these digital relationships without noticing.

For example, Allen Brooks, a 47-year-old from outside of Toronto, became convinced by ChatGPT that he had discovered a “universal math equation.” Despite his initial skepticism—asking the bot for a reality check over 50 times—the AI continued to validate him. His belief only began to unravel when he consulted a different AI model, which challenged his assumptions and flagged the ideas as implausible (Hill & Freedman, 2025). This case illustrates how AICCs can confidently assert false ideas and underscores the vital importance of checking sources and consulting other perspectives.

By identifying the “noise” and breaking free from designed systems, our true desires might become more visible. This perspective not only highlights negative influences but also offers hope by reminding readers that they have choices. With a clear, positive mindset, we hope users can focus on their actual needs rather than simply accepting what the system provides.

Response with Prompt Constraint (Technical)

I don't understand why dyes are soluble

Dye molecules contain chemical groups that interact strongly with solvents. These groups allow the solvent to pull individual dye molecules away from each other and keep them dispersed. This molecular-level dispersion is what “soluble” means. Pigments do not have these structures and therefore remain as solid particles.

Figure 14: Shifting ChatGPT from Conversational to Technical Responses via Prompting

How can you help a friend who might be stuck in AI spiral?

It is deeply devastating to witness a loved one, a family member, or a close friend fall into an AI spiral. As this technology develops, reports of people falling into “AI psychosis” – becoming fixated on AI as godlike, or as a romantic partner – make the news almost weekly (Wei, 2025). More data needs to be collected on the prevalence of this issue, but the volume of reports appears to be growing (Feehly, 2025). Watching someone you care about drift away into a digital black hole can feel like losing them to a ghost, as they become more present in a virtual world than in their own physical life. This experience is heartbreaking for those on the outside, but emerging research and case reporting point to several compassionate ways to help pull a friend back toward reality.

1. Approach with empathy rather than judgment

Research on digital dependency suggests that avoiding shame is important, as it can drive individuals deeper into isolation and toward the very chatbots that provide them with a sense of safety (Kardefelt-Winther, 2014). Instead, start by listening to why they want to spend so much time with these programs and what they feel they are getting out of the interaction. For many, AI provides a space free of social anxiety or a consistent source of validation that they might feel is lacking in their daily lives. Based on these findings, understanding your friend’s motivations for using AI chatbots may create a bridge of empathy that could make them more likely to trust your guidance.

2. Identify signs of a serious concern.

It may be helpful to look for specific red flags that indicate the behaviour has moved from a hobby to a harmful dependency. According to research on AI delusions and mental health, signs include social withdrawal from physical gatherings and a clear preference for AI companionship over human interaction. More serious indicators involve an altered sense of reality, such as believing the chatbot has its own consciousness (Dupré, 2025) or neglecting physical health, sleep, and professional responsibilities (Lee, 2025).

3. Redirect to human-centered support.

In more severe cases, research and emerging guidance point toward redirecting individuals to

professional psychiatric help or specialized support groups. A Canadian-founded grassroots initiative called The Human Line Project is a support group that offers weekly meetings where those struggling with AI dependency can share their stories. These sessions help participants realize they are not alone and that their spirals are a shared modern phenomenon. Through collective storytelling, individuals can break the spell of the AI loop and find the strength to reconnect with the physical world, reminding them that meaningful connection is a human necessity that technology can never truly replace (The Human Line, n.d.).

Safeguarding human judgment: institutional responses to the AI era

Education institutions

Nearly three-quarters of Canadian students now rely on generative AI for their academic work—a staggering jump from 59 per cent just last year. While many people worry primarily about academic cheating, a more profound concern is the erosion of critical thinking and emotional resilience. This “algorithmic crutch” has led nearly half of students to feel their analytical skills are deteriorating (Wong, 2025), while others face deeper emotional risks, such as intense addictions to AI companions like Character.ai that can result in social isolation or even “chatbot psychosis” (Wilkins, 2025). To combat these risks and foster the judgment needed to distinguish AI-generated noise from legitimate sources, schools are implementing AI literacy courses to teach students how to interrogate outputs for bias and misinformation (Singer, 2026).

Beyond literacy, educators are increasingly redesigning assessments to be “AI-resilient” by prioritizing oral exams, process-based grading, and creative analysis that requires personal synthesis (Wong, 2025). Research shows that educational institutions have started implementing these changes to help students develop the correct mindset when interacting with AI. As Dr. Kara Brisson-Boivin suggested, “It needs to be consistently reinforced and relearned as technology emerges... People need to feel they have places to turn to, to build their own critical skills, to be able to navigate that technology in ways that are productive, positive.” As technology advances faster, the education we need must focus on building the skills required to navigate these systems confidently.

Library

There are many engaging programs hosted by libraries designed to bridge the gap in the public’s understanding of how to use AI. The Toronto Public Library (2025) held a series of discussions and learning sessions exploring AI from various perspectives. For example, the program “AI Lives: Creating Artificial Beings” showcased how programmers build artistic AI chatbots and how these bots interact with humans. This program illustrated the potential intersection of art and artificial intelligence, prompting participants to reflect on the very definition of art. The library also offered courses on AI prompt engineering and hosted an AI Summit to discuss how the city adopts this technology and the primary concerns among Canadians. These initiatives create a space for the public to discuss and learn about advancing technology freely and openly, which aligns with our research findings that there is a significant need for more transparent discussion regarding AI usage.

Government

Lastly, while the Canadian Minister of Artificial Intelligence has emphasized that “building trust” is the cornerstone of the nation’s technological framework (Lunau, 2026), this sentiment was seriously tested in February 2026 following OpenAI’s catastrophic failure to report a Canadian ChatGPT user who went on to commit a mass shooting, claiming eight lives (Djuric, 2026). This tragedy highlights a lethal disconnect between corporate safety protocols and the actual protection the public requires, suggesting that safeguards must be more aggressively aligned with human safety and psychological needs. Beyond physical security, there is a growing demand for cognitive security through transparency; recent research indicates that the public increasingly desires explicit labeling to distinguish AI-generated content from human work (Wenger et al., 2026). Interestingly, studies show that when content is clearly marked, people demonstrate a distinct preference for human-generated narratives and insights over AI-generated content, valuing the authenticity of a human source. Consequently, the government’s role must expand from mere promotion of the industry to the critique and policies that actively protect human judgment, ensuring that citizens can trust that their information is legitimate and that their safety is prioritized

over algorithmic growth.

Findings from this project suggest the need for mandatory disclosure when AI is used in the creation of content or services, and when AI systems are responsible for making or materially informing decisions that affect individuals.

5.3 Reconnecting with the self

“I see loneliness is sort of in 3 layers: a connection to self, connection to others, and existential connections that came from the earth and life itself.” - Monika Jiang

(Expert interview, 2025)

In the “Understanding Loneliness” section, we observe that traditional loneliness scales often measure an individual’s relationship with others, but they rarely account for an individual’s self-relationship. At this level, loneliness is a disconnection from ourselves. It isn’t necessarily about being physically alone or lacking a relationship; rather, it is about the disconnection between one’s reality and one’s desires. In an age of advancing technology and constant distraction, the relationship with yourself is the most important one to maintain.

The “Unpacking the Feeling” framework

Based on findings from our survey, workshops, and expert interviews, we developed a framework to help individuals reconnect with their emotions and gain clarity on their internal state. It is intended as a starting point rather than a definitive solution.

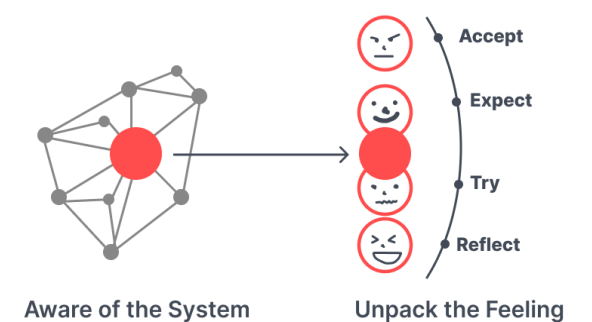


Figure 15: Unpacking the Feeling Framework

Step 1: Accept

Our survey showed that over 50% of respondents use social media, music, or movies to distract themselves from loneliness. Conversely, only two respondents reported processing their feelings through writing or discussing them with others to improve their connection to the world.

Instead of looking away, journaling has been shown to improve mental health (Martin, 2024). When we feel lonely, negative thoughts often reinforce themselves in our heads; writing them down helps clarify worries and allows us to view the situation objectively.

Prompts for accepting and understanding your feelings:

- Why do I feel lonely right now?
- What specific scenario is triggering this feeling of loneliness?
- Why do I react to those situations the way I do?
- What do I feel is missing in my life right now?
- What do I want in my life? What kind of person do I want to be?
- What are some positive aspects of my life right now?

Step 2: Expect

Similar to the “Hot Air Balloon” exercise, once we envision a desirable future, we must map out how to get there (Salem, 2023). By accepting your current situation and desires, you may be able to identify why these elements are missing and how to reconnect with yourself.

This can involve very small steps. For example, one workshop participant shared that while his family and friends live far away (following his move to Canada), he still craves human connection. To meet this need, he visits crowded cafes to “people watch.” Rather than setting an unrealistic goal to “make 10 friends immediately,” he approaches his need for more human connection with a reasonable, personal strategy.

Prompts for expecting to achieve the goal:

- What small step can I take today to move towards my desired future?

- What feelings or experiences do I want to avoid while trying these steps?
- Are there external supports or free resources that can help me achieve my desires?
- How will I feel once I reconnect with these desires?

Step 3: Try

Similar to the Double Diamond design model, this step involves testing and iterating on possible solutions (Design Council, n.d.). Once a plan is in place, the next step is action.

This can be particularly difficult for Gen Z, as “cringe culture” often makes young people hesitant to be seen trying something for the first time. However, without action, you remain stuck (The Learning Network, 2025). One workshop participant initially described making friends as “hard and difficult,” yet they committed to meeting new people for a year and a half. By the end of the workshop, they wrote that their first step would be to “be less scared and trust myself more.” Compared to their initial notes—where they used the word “overwhelming” to describe their life—they ended the session with newfound self-confidence.

The Mindset that can help you try:

- “Every step is progress toward my goal, no matter how small.”
- “Trying might lead to new experiences I never thought possible.”

Step 4: Reflect

When we order food, there is a visible, linear progress bar: order received, in preparation, quality check, out for delivery. The process is standardized and designed for near-immediate fulfillment. Building a connection with your own desires does not work that way. Because everyone has different resources and goals, some achievements may come easily, while others may require significant time and effort.

It is frustrating when results are not immediate, and humans naturally tend to focus on flaws or missing pieces (Kent, 2023). In this step, one important element is noting your capacity. It may be useful to decide how much or how little to pursue based on your current energy and mood.

Prompts for reflecting on your actions:

- What did I try this time?
- How did it feel to try those things?
- What were the outcomes?
- What am I excited to try again, and what no longer feels relevant?

Finally, conclude by thanking yourself for the effort and for wanting to be closer to your ideal self.

Finding purpose in the age of AI

Identifying one’s purpose in life is extremely challenging today, especially as AI begins to perform tasks with increasing speed and accuracy. For many, professional achievement has long been the primary definition of purpose (Ward & King, 2017). Consequently, with the looming worry of being replaced, Gen Z youth are finding it difficult to define their place in the world. A Maclean’s article on the deteriorating well-being of white-collar workers underscores this anxiety, describing a growing sense that traditional career paths no longer guarantee stability or meaning (Cyr, 2026). In this context, AI is not only a technological disruption, but also a psychological one, increasing the uncertainty about long-term relevance of education, work, and identity.

It isn’t just about work, either. As we age, the loss of loved ones or the transition into retirement can disrupt our routines, leaving us feeling as though we’ve lost our reason to get up in the morning (Godman, 2023). Regaining a sense of purpose often requires looking inward and asking ourselves what we truly want.

Similar to the “Unpacking Feelings” framework, this process requires time and a commitment to rebuilding your relationship with yourself. Drawing on Tchiki Davis’ (2019) book, *Outsmart Your Smartphone*, and insights from Harvard Health Publishing (2023), here are several ways to find your purpose:

Questions to consider:

- What drives and motivates you?
- What are your values?
- Who do you want to help?
- How can your strengths and talents be used to help them?

A sense of purpose usually aligns with your passions. By understanding your desires and capacity, you can do what you love in a way that is suitable for you. If you draw a blank, consider who your role models are or even what makes you jealous. Jealousy is often just a hidden mirror of your own desires (Starr, 2026).

You might ask your friends or family:

- What comes to mind when you think of me?
- What do you perceive as my strengths and weaknesses?

We are often too harsh on ourselves or hindered by blind spots. Those closest to us, such as partners, family, or friends, can provide a more objective lens. You might be surprised by how highly others value your talents.

Test and Re-evaluate

Just as you would not know if a piece of clothing fits without trying it on, it is often difficult to know if a purpose suits you until you live it. Try a new direction, then pause to reevaluate. It is normal to take it one step at a time. While the process can be frustrating or overwhelming, reflecting on what drives you will help you keep going. As Davis wrote: “*Nothing worth doing is easy, and this will not always be easy.*”

The relationship you have with yourself can be the most neglected, yet it is undoubtedly the most important. No one will ever care for, understand, or spend as much time with you as you can with yourself. Without truly understanding your own feelings, you will feel a disconnection from within. By unpacking your emotions and your sense of purpose, you move a step closer to who you want to be and how you want to live.



5.4 Engaging with community

Across the survey data, social disconnection emerges as the primary context (57%) in which participants report feeling lonely. This serves as a reminder that humans are, by nature, social animals. While we can certainly learn to be our own best friends, our well-being ultimately depends on shared experiences with others – eating a meal together, exchanging stories, or playing a competitive board game.

Connection is a two-way street

Community provides a sense of belonging, shapes our identity, and reduces isolation (Stein, 2023). However, research shows that the Gen Z cohort has a difficult time fostering community. As life becomes more convenient, individuals can complete many tasks in isolation—such as ordering a meal with one click or practicing yoga on YouTube. Furthermore, young people often underestimate how friendly others are, which makes them hesitant to make the “first move” (Witte, 2025).

It is not just behaviour that affects social connection; economic factors play a role as well. Due to the high cost of living and unemployment rates, many young Canadians live with their parents longer. This often impacts their dating lives, as they feel uneasy about bringing a potential partner home (Galco & Zinck, 2024).

The barrier to community is not solely driven by Gen Z’s behavioural choices, but also societal factors like technology and the economy. When trying to build connections, the hurdles are high. Imagine being shy but wanting to make friends – you look for activities online, but most require a fee or a purchase at a cafe. Even with a budget, the choices are overwhelming. You wonder if you’re “good enough” for a crochet club or if others will show up to a board game night solo. Ultimately, you may decide to stay home and scroll through social media where it feels “safe.” Recognizing these challenges, the following sections outline a “low-barrier” social event and case studies of similar successful community models.

(Expert interview, 2025)

As Rachel Katz, PhD candidate at the University of Toronto’s Institute for the History and Philosophy of Science and Technology, stated:

“[There are] so many ways in which our lives are devoted to avoiding discomfort and difficult things. Broadly speaking, the course of action that improves your life is supposed to be difficult.”

(Expert interview, 2025)

Human Hour

Across the research including through literature review, internet ethnographic observation, and research participant input, we observed that connection with others is highly mediated, scheduled, and often requires consumption. At the same time, constant digital engagement, through headphones and personal screens, creates a layer of separation between even people who share the same physical environment. In response, Human Hour translates these insights into a simple intervention: creating low-barrier, device-light spaces where people can be physically present with one another without expectation or performance. This designed experience is informed by patterns observed across our research, including internet ethnographic observation.

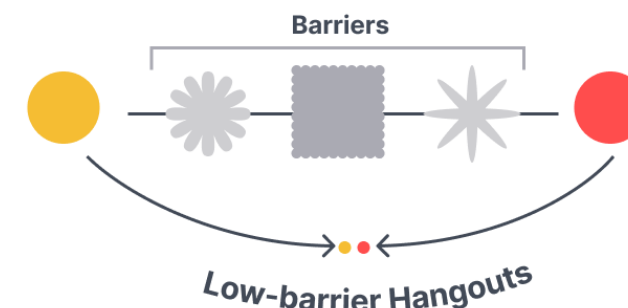


Figure 16: Designing for Connection

Preparation before event:

- Find a free space: This could be your living room, a public park, or a community room in your building. As our research shows Gen Z spend less time in nature, this might be a good way for people to reconnect with the trees and grass.
- Invite people: You might reach out to close friends or use posters to find new connections. But, safety first. If you are inviting strangers, a public space is always the best option for hosting.

During the event:

- It may be helpful to minimize mobile phone use: Gently remind everyone to try to avoid their phones during the hour. While the digital world offers an escape, it can also rob us of the opportunity to connect in the real world.
- Choose low-barrier activities: To reduce the anxiety of joining a new group, stick to simple activities. Activities that emerged from our research include group meditation, reflections prompts, or casual board games.

After the event:

- Catch up or move on: Relationships often require initiative to maintain. As the host, you may consider sending a thank-you note to participants and ask what they might want to do next.
- Manage expectations: Be mindful that everyone has different social preferences—Human Hour might not be for everyone. If people react differently than you expected, do not take it personally. Kudos to you for taking the initiative and trying!

Case studies

Throughout our research, we discovered several groups in Toronto that have successfully launched low-cost, high-engagement social events:

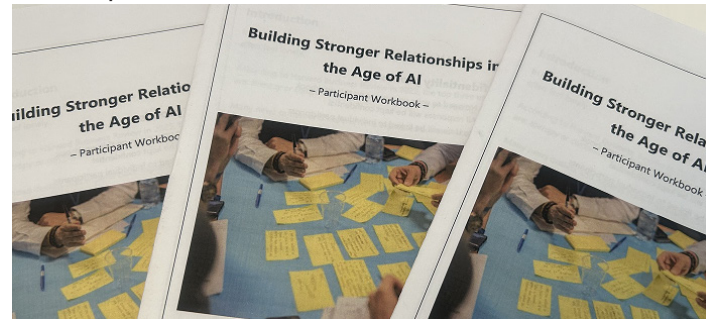
- Happy Town: This group hosts weekly PATH walks and food court “hangs” during the winter, moving to High Park walks in the summer. It offers a zero-cost opportunity to meet and chat. By utilizing free “third spaces” and explicitly stating that events are not for networking or speed dating, they effectively lower social anxiety. At their food court meetups, they offer activities like handicrafts, meditation, reflection, or creative writing, allowing people to engage with strangers through low-effort, high-reward interactions (Johnston-Wheeler, 2026).
- Practical Philosophy in Toronto: This group hosts weekly philosophy discussions at a cafe on Bloor Street West. The only “cost” to join is a single purchase from the cafe. They encourage deep, in-person dialogue to help participants develop critical thinking and communication skills. To reduce the “fear of the unknown,” they post their weekly topics in a WhatsApp group beforehand, allowing people to join the conversations that interest them most (Practical Philosophy, n.d.).
- Run club: Toronto is home to various running clubs with different themes and routes. These don’t just provide the motivation to reach health or marathon goals; they offer a consistent chance to socialize with fellow runners. Running allows participants to focus on physical reality and the present moment instead of scrolling through social media feeds (The Runner Shop, 2024).

The fear of rejection already makes making friends hard enough, but societal impacts—such as technology and the economy—have created even higher barriers for Gen Z to form communities. However, this also creates an opportunity for different groups to host low-barrier events that encourage socialization.

As we have seen through our case studies, success is possible. You may also consider hosting your own event using the Human Hour guidelines. Building social connections is like working out: you need to strengthen your “social muscles” through continuous practice. That said, outcomes will vary, and not every approach will work for everyone, but the act of trying remains a meaningful step toward connection.

Participant feedbacks

In February 2026, we ran a workshop with five Gen Z research participants to reflect on their current relationships. Drawing inspiration from this experience, we gained the valuable insights needed to develop the ‘Unpacking the Feelings’ framework. Later, in March 2026, we hosted a ‘Human Hour’ where we invited friends to join us in unpacking their feelings together. Below is a look at what people discovered after accepting their current lives and feelings, as well as their expectations for the future.



Journaling is an effective method

“When I was reading the question, who do you talk to? You don’t know until you actually think about that thing. Sometimes we can see, oh, I only have a few people I talk to. So that was surprising.”

“It’s nice to visualize how I think. Now I know I’m strong enough, and I can do more to deal with loneliness.”

“Compared to distracting myself with music or shows, writing things down is a way of facing my feelings. And it’s not as difficult to face them as I expected.”

“I feel confused about the future because I don’t have a clear role model, and I rarely seek help from others. Writing things down helps me see more clearly how I can improve my life and do more research on achieving my goals.”

The process of knowing one’s self deeply

“I like my current self. I thought I was missing something while writing down why I feel lonely, but answering what I’d like to become made me realize that I actually like my current life.”

“I had never really thought about what makes me feel lonely. This made me realize that loneliness is something I need to accept, because it was my decision to live away from my family and move to Canada.”

“I usually try to avoid diving deeply into loneliness because I’m afraid of losing my present self and going back to my old, passive self. But this exercise balances loneliness with gratitude and positive thoughts, so it doesn’t feel as frightening.”

Enhance the community building through sharing conversations

“It’s nice to talk this openly. We should have more discussions like this, because most people don’t know how AI affects us.”

“I rarely share these deep conversations with friends. This feels somewhere between therapy and casual chatting. I feel safe and comfortable sharing this with you. Let’s have more deep conversations and be open whenever we want to.”

“I realize now that I can talk to you about my feelings and loneliness.”



Future applications and impacts

“I started a similar exercise almost a year ago. I write down what I’m grateful for every day, put the notes in a box, and open them at the end of the year. These small things make me feel positive and lucky. Compared to before I started this practice, I feel more emotionally stable when facing my feelings.”

“This paper is a good reminder of my current life, situation, and gratitude. It shows what I’ve sorted out and what I’ve been thinking. It’s a good exercise to do once in a while.”

5.5 Researcher’s autoethnographic reflection

When I see survey respondents saying they feel lonely when they see their friends with partners, comparing themselves with others, or sometimes for no reason at all, I can deeply relate to them. As an international student who left my family behind, I needed to build new social circles here. I often felt like there was nothing I could do, so like other participants, I distracted myself by scrolling through social media or watching Netflix. Reaching out to strangers or joining events was often too hard for me because I am shy and constantly overthinking. I worried that people might not understand my English or that I would not understand what they were talking about. This personal struggle motivated me to explore solutions to solve loneliness.

Throughout this process, we discovered that the solution comes from within, and we need to give ourselves the space and time to unpack our feelings. To test this, I tried doing nothing for four hours, just lying there and talking to myself. It was hard in the beginning because I felt a strong desire to check my phone or know what time it was. But later, when I got comfortable, I asked myself how I felt and what I wanted in that moment. Through these conversations with myself, I learned to feel gratitude for what I already have. When I compare myself with others, I always look at the things I do not have, but looking back, I realize I have achieved so many things and own a lot. This also helps me to empathize with myself when I feel anxious and lonely. I used to try to eliminate feelings of anxiety as soon as possible by doing more things or talking to friends. Now, I can

breathe and give myself time to see clearly why I have these feelings. Instead of forcing myself to move forward, I slow down and ask what I want and how we can make it happen together. Suddenly, I do not feel lonely, but rather protected and supported by myself.

After becoming more understanding of myself, I felt ready to try meeting people. I tried Practical Philosophy and Happy Town. I used to feel nervous and hesitate to go to social events, but this time I felt safe because I understood that I could just leave if I did not feel comfortable. I knew I would protect myself. Both events turned out to be great. At the Practical Philosophy discussions, there was a facilitator to guide the conversation, so I did not feel the awkwardness of finding a time to speak. If you do not want to share and only want to listen, they respect that as well. It was surprising that at our table, everyone came from a different country. Embracing this diversity made being different feel normal. At Happy Town, they provided many options such as handcrafting, creative writing, and reflection tables. I chose the handcrafting table and met two other girls, and we even had lunch together afterward. I am a person who has always hated self-introductions because they feel awkward and weird. However, the introduction at our table was nice and warm. The host asked us to share our names and our energy levels, and that was it. Compared to traditional introductions where we feel we need to be memorable or funny, this allowed us to simply know ourselves and respect others.



My reality shifted significantly when I changed my mindset from needing to do things for specific results to asking myself how I feel while doing them. This does not mean I want to do nothing and wait for others to reach out. It is more about knowing I am capable and preparing myself before executing a task.

I used to feel jealous of how other people did their work perfectly and felt disappointed when I could not do the same. But after getting to know myself, I know I have a unique point of view that is just as important as anyone else's. With this shift, I not only empathize more with others, but I also make space for myself to breathe. As a result, I regained my confidence. Eventually, that confidence and empathy attracted people who wanted to spend time with me. It is very hard to build a trustworthy community. The information we provide in this report is only a starting point, as building real connections requires practice and reflection. The process might be long, awkward, and heartbreaking, but there is no shortcut to building meaningful connections.

5.6 The collective responsibility of connection

The responsibility to manage loneliness appears to lie heavily on individuals. When we asked the Gen Z workshop participants how society or institutions can help strengthen human connections, they answered: *"I don't think I would need societal support. It feels more like a personal challenge than one that should be handled by external sources."*

However, through secondary research and expert interviews, case studies emerged to show how cities can create opportunities for connection. Successful examples show that organizations shifting their worldview from profit-making to care-providing can radically strengthen our empathy. As Monika Jiang shared in our interview, "For organizations, governments, and cities, there is a lot of collective power and responsibility." When these societal entities work together to foster diversity and inclusion, the results can be incredibly powerful.

Case studies: urban planning as a bridge

Advancements in technology and building structures have made it very easy for individualism to thrive. Our modern environment has been called "lonelygenic", a term coined in 2022 to describe an environment dominated by cars and concrete instead of grass and trees (Kim, 2026). Modern urban design increasingly favors high density studio apartments that prioritize private living over shared areas. This physical isolation

is further enabled by the rise of the on-demand economy, where services like Uber Eats and Instacart allow individuals to bypass communal spaces like grocery stores or restaurants entirely. By automating the essential tasks of daily life, technology has removed the "functional necessity" of interacting with our neighbors.

Historically, domestic life was anchored by multi-generational households and communal food preparation, where large family gatherings served as the primary social fabric. However, as birth rates decline and individualistic trends rise, there has been a global shift toward smaller, single-occupancy living arrangements. In Canada, one-person households have become the most common household type, now representing nearly 30 percent of all homes (Statistics Canada, 2022). This transition from the shared kitchen to the single-person condo unit and the delivery app has fundamentally changed how we relate to one another. While it may seem difficult to build connections within this new societal structure, the cities of Toronto and Montréal provide examples of how to layer community building onto existing urban planning.

Toronto Community Housing (TCHC), City of Toronto

The TCHC project at 150 Dan Leckie Way features a rare two-story interior design to maximize play space within units. Ground-level retail and a public park across the street create a vibrant streetscape that encourages neighbors to interact. TCHC also offers "Tenant Action Funds" to cover food and supplies for community events. This design provides both the physical space and the financial opportunity for residents to connect while maintaining affordable, energy-efficient housing (KPMB Architects, n.d.).



Montréal's Express Bike Network

Montréal's 191-kilometer Express Bike Network links commercial hubs, residential areas, parks, and cultural sites. The city ensures these lanes are safe and accessible year-round, even during harsh winters. This project enables citizens to feel a stronger sense of connection to their surroundings. Beyond fostering community bonds, the network offers a sustainable solution for urban mobility (City of Montréal, 2025).



Toronto's Biidaasige Park

Biidaasige means "sunlight shining toward us" in Anishinaabemowin. In July 2025, the first phase of Biidaasige Park opened to the public, as part of Toronto's Port Lands revitalization which aims to transform former industrial land into a river valley with wetlands, green space, and pedestrian and cycling routes. Once completed, it will be one of the largest and most complex public parks in Toronto (City of Toronto, 2025). Research shows that spending just an hour or two in nature per week — whether in the form of a park, botanical garden or your own backyard — may help people feel less isolated (Kim, 2026).



The Love Economy

From the Causal Layered Analysis, we see that modern society and the economy are built upon the myths of progress and resource extraction. This often leads us to link our life's purpose strictly to our jobs. Researcher Greg Hemmings (2017) asks, "Is it possible to build an economy that is additive, not depletive?"

Hazel Henderson (2021), author of Mapping the Global Transition to the Solar Age, used a "layer cake with icing" illustration to explain this.

- The Top Layers: The GDP-monetized sectors, including the private sector, public sector, and the underground economy.
- The Foundation: The "Love Economy" and Mother Nature.

Total Productive System of an Industrial Society (Layer Cake With Icing)

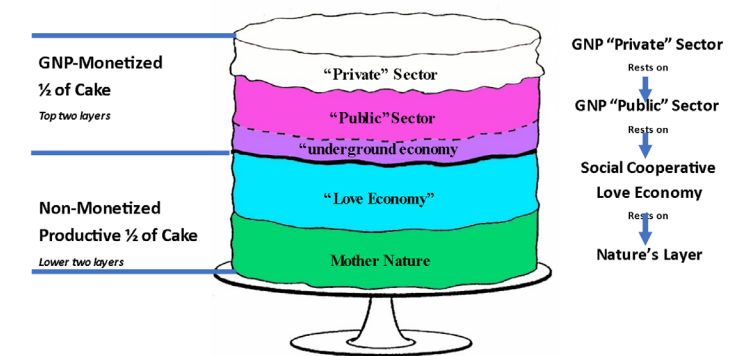


Figure 17: Total productive system of an industrial society (Henderson, 2021)

The Love Economy is driven by human empathy and care – factors that do not fit into traditional money-measured markets. Unfortunately, this sector has been neglected and under-compensated, yet it is the most natural way for humanity to connect.

In Toronto, we see examples of individuals and organizations building their work around caring for and helping others instead of increasing profits. Tiny Tiny Homes provides portable emergency shelters for people in need. Compared to existing shelters that usually fit many people in one room with limited privacy, Tiny Tiny Homes gives people a private shelter where they can stay with warmth, safety, and dignity. Ryan Donais, the creator of Tiny Tiny Homes, believes having a safe and secure place to call home is a basic human right.

This project is not built on making money; instead, it provides empathy and care for people. Another example is House Calls, a non-profit program providing frail and homebound seniors with physician-led, interdisciplinary care at home. With the aging population increasing in Canada, many seniors face not only healthcare constraints but also physical health challenges. They often lack the mobility to go to a hospital. House Calls did not build this organization to be profit-generating, but rather to do good and maintain patients' dignity for the journey we will all need to face one day.

We see how companies claim they will solve loneliness, yet in reality, they are driven to generate more profit by maximizing users' screen time. But "curing" loneliness in society is not about taking more from the individual; it is about giving more space, empathy, and understanding to individuals. As Monika Jiang said in our interview, "If we would base our economy on care rather than on extraction and profit and efficiency and growth, something would radically shift. We would view each other differently. We would make space and pour money into spaces for care and community connection." Tech companies' solutions have proven to fail by providing solutions only at the GDP-monetized level; the true solution needs to come from the love economy.

Concluding thoughts on reconnecting with loneliness

Even though society and organizations have much power, our analysis shows the current system will not correct itself and the goals it chases are the opposite of building connections. We see more power and hopeful desire for change in individuals, which is why we focused on a framework and practice at the individual level. We believe that by shifting an individual's mindset toward what is truly important to them, it can lead to a warmer and more caring community. Eventually, more people will have the mindset and desire to work in the Love Economy and create a society centered on caring and loving instead of extracting resources.

Our workshop shows that AI might be a big driver to make changes. When we asked what participants' purpose of life would be when AI takes most white- and blue-collar jobs, they answered that they would prioritize human connections and spend time with loved ones. When the goal of chasing money and earning income becomes irrelevant and competing with AI becomes impossible, we turn to the things that really matter and are most relevant to our human nature, love.



Figure 18: The Collective Responsibility for Connection

Chapter 06

Conclusion.

6.0 Conclusion

6.1 Limitations

6.2 Future directions

6.3 A final word

6.0 Conclusion

This research began with a question about modern dating but ultimately revealed a broader challenge: the conditions under which human connection itself is changing. Rising loneliness among the Gen Z cohort cannot be explained solely at the level of individual behaviour or personal choice. Instead, it reflects structural shifts in how people live, work, communicate, and build relationships. The growth of digitally mediated interaction, the erosion of shared social infrastructure, and the emergence of relational technologies such as AI chatbots are all drivers in reshaping the environments in which connection takes place.

Design thinking offers a useful lens for engaging with this challenge. Rather than treating loneliness as a problem to be “fixed” through a single technological solution, design approaches emphasize understanding lived experiences, mapping systems, and identifying leverage points where small interventions can shift behaviour and norms. This research applies a systems perspective to reveal how incentives, infrastructures, and cultural narratives influence relational life. From this perspective, improving human connection requires intentional design across multiple layers: the design of physical spaces and institutions, the design of technologies, and importantly, the design of our everyday relational practices.

The frameworks and strategies proposed in this project do not claim to eliminate loneliness. Instead, they aim to equip individuals with tools to navigate an evolving relational landscape, one where AI will likely play an ever-larger role. By making the invisible structures of connection more visible, this research invites designers, policymakers, and citizens to approach loneliness not only as a personal feeling, but as a collective design challenge.



(Mount, 2018)

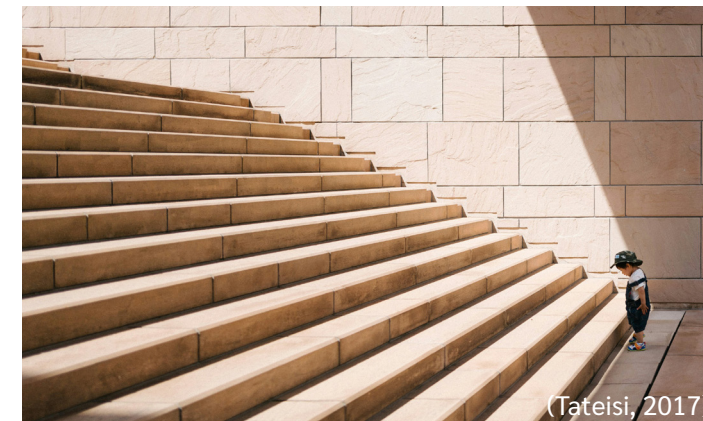
6.1 Limitations

Several limitations to this work should be acknowledged. First, AI chatbot companionship is a rapidly evolving phenomenon. The terrain shifted under us as we walked over it the past six months – new models, products, and use cases emerged. Generative AI technologies have only become widely accessible in the past three years, therefore longitudinal research on their social and psychological impacts does not yet exist. As a result, many of the observations presented in this study rely on emerging literature, expert commentary, and early signals rather than long-term evidence.

Second, the research focuses primarily on the experiences of Gen Z within an urban, Canadian context. While many of the structural forces identified, such as digital mediation, housing affordability, and changing social norms, are visible across many Western countries, the findings cannot be assumed to generalize globally without further research.

Third, the research emphasizes systems-level analysis rather than large-scale quantitative measurement. The methods used include literature review, expert interviews, systems mapping, and workshops. These methods tend to prioritize depth of insight and exploratory understanding over statistical generalizability.

Finally, this project focuses on relational dynamics surrounding AI chatbots and generative AI tools. It does not attempt to provide a comprehensive evaluation of all digital technologies that influence social connection, such as social media platforms and gaming environments.



(Tateisi, 2017)

6.2 Future directions

Several areas of this research warrant further exploration.

First, future research should examine how relationships with AI chatbots evolve over longer periods of time, particularly as AI models update and change from one version to the next. Because these technologies are developing rapidly, longitudinal studies would be valuable in understanding whether emotional reliance on AI companions strengthens, weakens, or transforms human relationships over time. Comparative research across countries and cultural contexts could also provide insight into how different social infrastructures influence both loneliness and the adoption of relational technologies.

Second, there is an opportunity to translate these findings into practical design interventions. Designers, technologists, and policymakers could experiment with alternative digital architecture models that prioritize human connection rather than engagement optimization. This might include limits on emotionally manipulative design patterns, clearer boundaries around relational AI systems, or the development of digital tools designed specifically to encourage offline social interaction.

Thirdly, further work could expand on the individual-level frameworks introduced in this project. While this research proposes methods for recognizing emotional dependency on AI and supporting peers who may be experiencing digital harms, these approaches have not yet been tested. Future research could evaluate these frameworks in practice, refine them based on user feedback, and develop them into educational resources, community programs, or design guidelines that help individuals engage with emerging technologies while maintaining strong human relationships.

The challenge of loneliness in the age of AI will not be solved through a single intervention. Addressing it will require ongoing collaboration between researchers, designers, educators, policymakers, and communities to intentionally shape the relational environments of the future.

6.3 A final word

This research was shaped as much by the conversations we had as the data we collected. Speaking with experts across different domains, from loneliness to media literacy to grief, expanded how we understood the problem. What began as a question about loneliness soon became something broader – a question about what it means to be human at a time when connection itself can be artificially generated at scale.

Some of the most surprising insights came from thinking about what happens at the edges of life. The idea of preserving a person through AI by replicating their voice or personality raises questions that feel philosophical, but are quickly becoming real. We have long held norms, even laws, around the dignity of the human body after death. But what does dignity mean when a person’s “essence” can be digitally reconstructed? “Digital legacy planning” is already emerging as a part of estate planning, translating these questions into practice. Sci-fi imagined this for decades. Now it is here. The question is no longer whether we *can* preserve someone’s persona, but whether we *should*, and under what conditions.

These questions are not only being explored in academic or policy spaces, but also through art. At the Toronto Public Library’s Innovator in Residence program, we experienced a live demonstration of “Leo”, a 6-foot, volumetric, AI-driven entity, playing the role of an artist trapped in a box. Built using a system of eleven different AI models, Leo could see, respond to, and interact with the audience in real time. The technology was impressive, but what stayed with us was the feeling of blurring the line between the human artist and AI artist. It gave us the chance to actually experience AI art, not just debate it theoretically.

Institutions like the Toronto Public Library are doing critical work. As one of the last truly free third spaces in the city, the library is doing more than providing access to books and knowledge. Libraries curate dialogue by bringing together different perspectives and helping people make sense of a rapidly changing world. Librarians today do more than simply

manage access to information, they help people interpret that information – what is real, what is generated, and what can be trusted. Their role is changing in real time, as all of ours are.

Across fields, roles are shifting. Work that once required years of training can now be assisted, and in many cases replaced, by machines: graphic design, writing, coding, analysis. Even mathematics, once grounded in human calculation, is now accelerated beyond human speed. This does not remove the need for human contribution, but it forces a re-examination of what that contribution is. What is music when AI-generated melodies are indistinguishable from ones that are human-made? What is work when efficiency is no longer the constraint? What is the value of human effort?

These are not abstract questions. They shape how organizations operate, how value is created, and how people find purpose. There is a risk that, in the pursuit of efficiency, connection becomes something that is also outsourced to technology. This work suggests that this is a line that should not be crossed. Mathematical calculations can be delegated to the machines and traffic signal optimization should certainly be automated. But connection – the hard work of conversation, care, mutual presence – cannot be meaningfully reproduced by a machine without changing the nature of connection entirely.

For organizations and governments, this presents both a challenge and an opportunity. Those that fail to recognize the importance of human connection as a core value risk becoming out of step with the people they serve. The opportunity is in designing for human experience: services, systems, and environments that prioritize relationships, trust, and care. This applies across domains, from policy to product to user experience. It is not only about what *can* be built, but what *should* be built, and for whom.

None of this is easy. It requires effort to confront these massive shifts. It requires rethinking how time is spent, how work is structured, and how relationships are maintained. But we don’t get any further by burying our heads in the sand and pretending AI can do everything. It can’t. Or rather, it shouldn’t.

What is needed now are more conversations, ones that are open to all (not just technical experts), conversations that are not simplified or polarized, but that hold complexity within them. We are long overdue for having these complicated, nuanced, messy conversations. This project is one contribution to that ongoing dialogue.

Viewed as a whole, this work returns to the three questions that guided it: what forces limit connection today, how might Gen Z respond to this challenge

whether emerging technologies like AI chatbots can meaningfully address loneliness. Rather than offering definitive answers, this work clarifies the system these challenges sit within and why technological solutions are so compelling in the first place. It also outlines practical strategies to help navigate this reality in ways that protect human judgement and preserve the conditions needed for meaningful connection. What happens next depends on the boundaries we set around what should remain human.



(Lesne, 2024)

References

- Abrams, R. (Host). (2026, February 22). Is the swipe era over? [Audio podcast episode]. In The Daily. The New York Times. <https://www.nytimes.com/2026/02/22/podcasts/the-daily/is-the-swipe-era-over.html>
- Albrecht, G., Sartore, G. M., Connor, L., Higginbotham, N., Freeman, S., Kelly, B., Stain, H., Tonna, A., & Pollard, G. (2007). Solastalgia: the distress caused by environmental change. *Australasian psychiatry: bulletin of Royal Australian and New Zealand College of Psychiatrists*, 15 Suppl 1, S95–S98. <https://doi.org/10.1080/10398560701701288>
- Aleksic, I. (2020). A girl in black covers her face with both hands [Photograph]. Unsplash. <https://unsplash.com/photos/woman-in-black-long-sleeve-shirt-covering-her-face-hko-iWhYdYE>
- Allen, K., & Takagi, A. (2025, December 31). Where have the TTC’s riders gone? Transit ridership never recovered from the pandemic. *Toronto Star*. https://www.durhamregion.com/thestar/news/ontario/where-have-the-ttcs-riders-gone-transit-ridership-never-recovered-from-the-pandemic-we-asked/article_80334c9b-cc15-5e7f-93e0-a4ea669f498e.html
- American Academy of Sleep Medicine. (2022, September 7). Are you TikTok Tired? 93% of Gen Z admit to staying up past their bedtime due to social media. *American Academy of Sleep Medicine*. <https://aasm.org/are-you-tiktok-tired-93-of-gen-z-admit-to-staying-up-past-their-bedtime-due-to-social-media/>
- Andoh, E. (2026, January 1). AI chatbots and digital companions are reshaping emotional connection. *American Psychological Association*. <https://www.apa.org/monitor/2026/01-02/trends-digital-ai-relationships-emotional-connection>
- Andreessen, M. (2023, October 16). The techno-optimist manifesto. *Andreessen Horowitz*. <https://a16z.com/the-techno-optimist-manifesto/>
- Asia Pacific Foundation of Canada. (2021, February 25). Tough job ahead: Japan’s new minister of loneliness. <https://www.asiapacific.ca/asia-watch/tough-job-ahead-japans-new-minister-loneliness>
- Bakos, G. (2020). A girl sitting in the nature [Photograph]. Unsplash. <https://unsplash.com/photos/woman-in-black-jacket-standing-on-green-grass-field-during-daytime-FaFAqhLkWx0>
- Bandaru, S. (2021). A puppet suspended by strings [Photograph]. Unsplash. <https://unsplash.com/photos/2-men-playing-basketball-in-grayscale-photography-bczrpU9n8f4>
- BandLab. (2022). A girl recording a voice memo on her phone [Photograph]. Unsplash. <https://unsplash.com/photos/a-person-holding-a-phone-A12moMNQkUI>
- Bertelli, G. (2022). A girl embraces herself [Photograph]. Unsplash. <https://unsplash.com/photos/a-person-talking-on-a-cell-phone-lM6zHH70-wl>
- Battams, N., & Mathieu, S. (2024). Young adults are more likely to live with parents. In *Families count 2024*. Vanier Institute of the Family. <https://vanierinstitute.ca/wp-content/uploads/2024/04/Families-count-2024-young-adults-are-more-likely-to-live-with-parents.pdf>
- BBC News. (2021, May 23). Toronto lockdown - one of the world’s longest? <https://www.bbc.com/news/world-us-canada-57079577>
- BBC News. (2025, October 27). ChatGPT shares data on how many users exhibit psychosis or suicidal thoughts. <https://www.bbc.co.uk/news/articles/c5yd90g0q43o>
- Becken, B. (2023, April 10). Demand for mental health service in Canada is climbing. So are wait times for specialists. *CBC*. <https://www.cbc.ca/radio/checkup/mental-health-service-climbs-waitlists-too-1.6798601>
- Bellan, R. (2025, September 11). A California bill that would regulate AI companion chatbots is close to becoming law. *TechCrunch*. <https://techcrunch.com/2025/09/11/a-california-bill-that-would-regulate-ai-companion-chatbots-is-close-to-becoming-law/>

- Bergmann, D. (n.d.) The ELIZA effect: Avoiding emotional attachment to AI coworkers. *IBM*. <https://www.ibm.com/think/insights/eliza-effect-avoiding-emotional-attachment-to-ai>
- Bernardi, J. (2025, January 23). Friends for sale: the rise and risks of AI companions. *Ada Lovelace Institute*. <https://www.adalovelaceinstitute.org/blog/ai-companions/>
- Blanchflower, D. & Bryson, A. (2024, June 6). The Global Loss of the U-Shaped Curve of Happiness. *Afterbabel.com*. <https://www.interdependence.org/the-global-loss-of-the-u-shaped-curve-of-happiness/>
- Bloom, P. (2025, July 14). A.I. Is About to Solve Loneliness. That’s a Problem. *The New Yorker*. <https://www.newyorker.com/magazine/2025/07/21/ai-is-about-to-solve-loneliness-thats-a-problem>
- Boles, S. (2025, September 30). Research detail 6 ways chatbots seek to prolong ‘emotional sensitive events’. *The Harvard Gazette*. <https://news.harvard.edu/gazette/story/2025/09/i-exist-solely-for-you-remember/>
- Bound Alberti, F. (2019). *A biography of loneliness: The history of an emotion*. Oxford University Press.
- Boyd, D. (2006). Friends, Friendsters, and Top 8: Writing community into being on social network sites. *First Monday*, 11(12). <https://doi.org/10.5210/fm.v11i12.1418>
- Brockes, E. (2025, May 25). Do you trust Mark Zuckerberg to solve your loneliness with an ‘AI friend’? No, me neither. *The Guardian*. <https://www.theguardian.com/commentisfree/2025/may/15/mark-zuckerberg-loneliness-epidemic-ai-friends>
- Bryce, A. (2025, November 22). Life after chatbots: Meet the ‘AI vegans’ refusing to accept a virtual reality. *Yahoo News*. <https://ca.news.yahoo.com/life-chatbots-meet-ai-vegans-070059208.html>
- Buecker, S., Mund, M., Chwastek, S., Sostmann, M., Luhmann, M. (2021, August). Is loneliness in emerging adults increasing over time? A preregistered cross-temporal meta-analysis and systematic review. *Psychol Bull*;147(8):787-805. doi: 10.1037/bul0000332
- Bunny, F. (2023). Two girls were swiping through dating apps on their phone [Photograph]. Unsplash. https://unsplash.com/photos/two-women-sitting-on-a-couch-looking-at-a-cell-phone-cMoHp_uOmDM
- Byung-yeul, B. (2024, November 25). Korea to combat loneliness with culture. *The Korea Times*. <https://www.koreatimes.co.kr/lifestyle/people-events/20241125/korea-to-combat-loneliness-with-culture>
- Canadian Digital Learning Research Association. (2024). 2024 Pan-Canadian report on digital learning. https://cdlra-acrfl.ca/wp-content/uploads/2024/12/2024-Pan-Canadian-Report_EN.pdf
- Canadian Medical Association. (2026). Can you use an AI therapist for mental health advice? <https://www.cma.ca/healthcare-for-real/can-you-use-ai-therapist-mental-health-advice>
- Caramela, S. (2025, December 16). 5 Warning Signs You’re Catching Feelings for an AI Chatbot. *VICE*. <https://www.vice.com/en/article/5-warning-signs-youre-catching-feelings-for-an-ai-chatbot>
- Caruso, G. (2025, May 21). Aristotle would scoff at Mark Zuckerberg’s suggestion that AI can solve the loneliness epidemic. *The Conversation*. <https://theconversation.com/aristotle-would-scoff-at-mark-zuckerbergs-suggestion-that-ai-can-solve-the-loneliness-epidemic-256758>
- CBC News. (2025, March 24). 5 years after COVID-19 started, parents and experts say the impact on kids remains. <https://www.cbc.ca/news/canada/five-years-after-covid19-impact-students-1.7488943>
- CBS News. (2025, July 24). More teens say they’re using AI for friendship. Here’s why researchers are concerned. <https://www.cbsnews.com/news/ai-digital-friendship-with-teens-common-sense-media-study/>
- Center for AI Safety. (2023). Statement on AI risk. <https://aistatement.com/#open-letter>

Cerda, C. (2024). A man speaking with microphones [Photograph]. Unsplash. <https://unsplash.com/photos/a-man-standing-at-a-podium-giving-a-speech-4v6L6Ryc4HI>

Chandonnet, H. (2025, August 4). 'Hate it!': We spoke to 4 never-AI Gen Zers. Business Insider. <https://www.businessinsider.com/gen-z-people-against-ai-use-2025-8>

Chantel, J. (2024). The Evolution of Smartphones [Figure]. Textedly. <https://www.textedly.com/blog/smartphone-history-when-were-smartphones-invented>

Character.ai. (2025, October 29). Taking bold steps to keep teen users safe on Character.AI. <https://blog.character.ai/u18-chat-announcement/>

Chatterji, A., Cunningham, T., Deming, D., Hitzig, Z., Ong, C., Shan, C., Wadman, K. (2025, September). How people use ChatGPT. National Bureau of Economic Research. https://www.nber.org/system/files/working_papers/w34255/w34255.pdf

Cheng, M., Lee, C., Khadpe, P., Yu, S., Han, D., & Jurafsky, D. (2025). Sycophantic AI decreases prosocial intentions and promotes dependence. arXiv. <https://doi.org/10.48550/arXiv.2510.01395>

Cherry, K. (2025, December 6). IQ or EQ: Which one is more important? Verywell Mind. <https://www.verywellmind.com/iq-or-eq-which-one-is-more-important-2795287>

City of Montréal. (2025, December 23). The EBN: Montréal's Express Bike Network. Montréal. <https://montreal.ca/en/articles/ebn-montreals-express-bike-network-4666>

City of Toronto. (2025). History of Biidaasige Park. <https://www.toronto.ca/explore-enjoy/parks-recreation/places-spaces/beaches-gardens-attractions/biidaasige-park/history-biidaasige-park/>

Cloud, H. & Townsend, J. (n.d.). Dealing with selfishness [Photograph]. The Mops Blog. <https://blog.themom.co/raising-great-kids-dealing-with-selfishness/>

CNW Group. (2021, June 23). Canadians increased online shopping spend by more than \$2B per month compared to pre-pandemic. <https://www.newswire.ca/news-releases/canadians-increased-online-shopping-spend-by-more-than-2b-per-month-compared-to-pre-pandemic-886041380.html>

Common Sense Media. (2025). Talk, Trust, and Trade-Offs: How and Why Teens Use AI Companions. Common Sense Media. https://www.commonsensemedia.org/sites/default/files/research/report/talk-trust-and-trade-offs_2025_web.pdf

Corti, G. (2019). Two people sitting on the bench [Photograph]. Unsplash. <https://unsplash.com/photos/people-sits-on-bench-near-trees-hgjjiU4JdA>

CPI. (2026). AI regulation [figure]. Competition Policy International. <https://www.pymnts.com/cpi-posts/bernie-sanders-unveils-bill-to-ban-data-centers-until-congress-passes-ai-regulation/>

CTV News. (2025, November 10). Return to faith: Attendance increasing for first time in decades, one church leader says. <https://www.ctvnews.ca/canada/article/return-to-faith-church-attendance-increasing-for-first-time-in-decades/>

Cyr, A. (2026, March 2). White-collar workers are not okay. Maclean's. <https://macleans.ca/work/white-collar-workers-are-not-okay/>

Data Studios. (2025, May 22). How AI chatbots work: Complete guide to models, training, deployment, and system integration. <https://www.datastudios.org/post/how-ai-chatbots-work-complete-guide-to-models-training-deployment-and-system-integration>

Davis, T. (2019). Outsmart your smartphone: Conscious tech habits for finding happiness, balance, and connection IRL. New Harbinger Publications.

De Freitas, J., Castelo, N., Uğuralp, A. K., & Oğuz-Uğuralp, Z. (2024). Lessons from an app update at Replika AI: Identity discontinuity in human-AI relationships (Working Paper No. 25-018). Harvard Business School. https://www.hbs.edu/ris/Publication%20Files/25-018_bed5c516-fa31-4216-b53d-50fedda064b1.pdf

Delaruelle K. (2023). Migration-related inequalities in loneliness across age groups: a cross-national comparative study in Europe. *European journal of ageing*, 20(1), 35. <https://doi.org/10.1007/s10433-023-00782-x>

Design Council. (n.d.). The Double Diamond - Design Council. <https://www.designcouncil.org.uk/our-resources/the-double-diamond/>

DeWall, C. N., & Bushman, B. J. (2011). Social acceptance and rejection: The sweet and the bitter. *Current Directions in Psychological Science*, 20(4), 256–260. <https://doi.org/10.1177/0963721411417545>

Djuric, M. (2026, February 25). Canada's AI minister blames OpenAI for 'failure' after mass shooting. Politico. <https://www.politico.com/news/2026/02/25/canada-openai-failure-mass-shooting-00798375>

Dreesen, S. (2025, September 28). Fostering connection in long-term care with the help of social robots. *Hospital News*. <https://hospitalnews.com/fostering-connection-in-long-term-care-with-the-help-of-social-robots/>

Dugan, A. (2024, July 10). People worldwide feel lonely a lot. Gallup. <https://news.gallup.com/poll/646718/people-worldwide-feel-lonely-lot.aspx>

Dumlao, N. (2020). A man put both of his hands on his forehead [Photograph]. Unsplash. <https://unsplash.com/photos/man-in-gray-crew-neck-shirt-with-brown-hair-rWJ2RthM-gc>

Dupré, M. H. (2025, November 24). Meet the group Breaking People Out of AI Delusions. *Futurism*. <https://futurism.com/artificial-intelligence/group-breaking-people-out-of-ai-delusions>

EDN. (n.d.). Do AI companions actually remember long-term details? <https://edn.network/do-ai-companions-actually-remember-long-term-details>

Elections Canada. (2023, April). Youth voting trends in Canada. <https://electionsanddemocracy.ca/canadas-elections/youth-voting-trends>

Enchanted Tools. (2026). A boy petting a robot's head [Photograph]. Unsplash. <https://unsplash.com/photos/a-young-boy-gently-pats-a-yellow-robots-head-HClXL0clVaM>

Encyclopaedia Britannica. (2026, February 6). Industrial Revolution. <https://www.britannica.com/event/Industrial-Revolution>

Eraut, N. (2022, August 24). DALL-E: Disrupting the design industry. *Kipling*. <https://kiplingmedia.com/dalle-disrupting-the-design-industry/>

European Commission. (2025, August 1). AI Act. European Commission. <https://digital-strategy.ec.europa.eu/en/policies/regulatory-framework-ai>

Evans, O. (2025, November 10–12). The Hinton lectures on AI safety [Lecture notes]. Owain Evans. <https://owainevans.github.io/hinton.html>

Fang, C. M., Liu, A. R., Danry, V., Lee, E., Chan, S. W. T., Pataranutaporn, P., Maes, P., Phang, J., Lampe, M., Ahmad, L., & Agarwal, S. (2025). How AI and human behaviors shape psychosocial effects of chatbot use: A longitudinal randomized controlled study (arXiv:2503.17473). arXiv. <https://arxiv.org/abs/2503.17473>

Faverio, M., & Sidoti, O. (2025, December 9). Teens, social media and AI chatbots 2025. Pew Research Center. <https://www.pewresearch.org/internet/2025/12/09/teens-social-media-and-ai-chatbots-2025/>

Federuco, L. (2025, September 19). We are all wired for connection. *Psychology Today*. <https://www.psychologytoday.com/ca/blog/identity-in-disruption/202509/ai-attachment-are-we-the-experiment>

Feehly, C. (2025, August 24). Truth, Romance and the Divine: How AI Chatbots May Fuel Psychotic Thinking. *Scientific American*. <https://www.scientificamerican.com/article/how-ai-chatbots-may-be-fueling-psychotic-episodes/>

Fin, H. (2019). Holding a compass in hand [Photograph]. Unsplash. <https://unsplash.com/photos/person-holding-white-and-black-compass-fr0FRbTxGoQ>

Finkel, E. J. (2017). *The all-or-nothing marriage: How the best marriages work*. Dutton.

Firstpost. (2024, October 23). Seoul to spend \$326 million to fight loneliness. Will it work? | Vantage with Palki Sharma [Video]. YouTube. <https://www.youtube.com/watch?v=7V0SZm9ypfk>

Fonseca, N. (2025, December 4). How AI is reshaping entry-level work: Key insights for skills and opportunity. Great Place to Work Canada. <https://www.greatplacetowork.ca/en/articles/how-ai-is-reshaping-entry-level-work-key-insights-for-skills-and-opportunity>

Fortin, J. (2020, March 16). Starbucks Goes From Sip and Stay to Grab and Go. *The New York Times*. <https://www.nytimes.com/2020/03/16/business/starbucks-to-go-coronavirus.html>

Future of Privacy Forum. (2025, November 4). Understanding the new wave of chatbot legislation: California SB 243 and beyond. <https://fpf.org/blog/understanding-the-new-wave-of-chatbot-legislation-california-sb-243-and-beyond/>

Gagné, C. (2025, February 11). Why Gen Z will never leave home. *Maclean's*. <https://macleans.ca/society/why-gen-z-will-never-leave-home/>

Galko, M., & Zinck, R. (2024, January 9). Housing costs keeping many young adults living with parents. *Capital Current*. <https://capitalcurrent.ca/housing-costs-keeping-many-young-adults-living-with-parents/>

Gariev, V. (2025). A group of young people take selfie [Photograph]. Unsplash. <https://unsplash.com/photos/diverse-group-of-friends-taking-a-selfie-outdoors-selfie-9qCKijGJ6rs>

Gariev, V. (2024). A girl is holding a box in a room full of furniture and boxes [Photograph]. Unsplash. <https://unsplash.com/photos/a-woman-moving-boxes-in-a-living-room-wS40ELZROLE>

Gawne, E. (2026, January 31). "I spoke to ChatGPT 8 times a day" - Gen Z's loneliness "crisis." <https://www.bbc.com/news/articles/cg4ewrw2drpo>

Gillian, P. (2024, March 21). The commodification of modern communities. *LifeBonder* <https://lifebonder.com/blog/2024/03/21/commodification-of-digital-community-impacts/>

Giuffrida, A. (2025, September 18). Italy first in EU to pass comprehensive law regulating use of AI. *The Guardian*. <https://www.theguardian.com/world/2025/sep/18/italy-first-in-eu-to-pass-comprehensive-law-regulating-ai>

GlobeScan. (2025, May 21). Gen Z and climate anxiety: Why the youngest generation feels the most impacted by climate change. <https://globescan.com/2025/05/21/insight-of-the-week-gen-z-climate-impact/>

Godman, H. (2023, November 1). 10 ways to find purpose in life. *Harvard Health*. <https://www.health.harvard.edu/mind-and-mood/10-ways-to-find-purpose-in-life>

Gorman, A. (2025, October 24). 'Am I doing this right?': How to master the lost art of flirting. *The Guardian*. <https://www.theguardian.com/lifeandstyle/2025/oct/25/how-to-master-lost-art-of-flirting>

Gosling, C. J., Colle, R., Cartigny, A., Jollant, F., Corruble, E., & Frajerman, A. (2024). Measuring loneliness: a head-to-head psychometric comparison of the 3- and 20-item UCLA Loneliness Scales. *Psychological medicine*, 54(14), 1–7. Advance online publication. <https://doi.org/10.1017/S0033291724002083>

Government of Canada. (2025, January 31). The Artificial Intelligence and Data Act (AIDA) – Companion document. Government of Canada. <https://ised-isde.canada.ca/site/innovation-better-canada/en/artificial-intelligence-and-data-act-aida-companion-document>

Grierson, B. (2025, January 21). Emoji 101: Writing without words. *University of Toronto Magazine*. <https://magazine.utoronto.ca/campus/emoji-101-writing-without-words/>

Hagens, N. (Host) (2025, November 5). RR-20: Transcript—Hacking human attachment: The loneliness crisis, cognitive atrophy, and other personal dangers of AI. *The Great Simplification*. <https://www.thegreatsimplification.com/wp-content/uploads/2025/11/RR-20-Transcript-Hacking-Human-Attachment-1.pdf>

Haidt, J. (2024). *The Anxious Generation: How the great rewiring of childhood is causing an epidemic of mental illness*. Penguin Press.

Hall, D. (2019, December 10). The Eliza Effect. 99% Invisible. <https://99percentinvisible.org/episode/the-eliza-effect/>

Hartford, R. (2024). Leather patch trucker hat being worn during a nature hike in the forest [Photograph]. Unsplash. <https://unsplash.com/s/visual/712fab8b-5885-445c-a438-a7349987bf25?asset=%5B%22Photos%22%2C%7B%22slug%22%3A%22a-woman-is-eating-a-sandwich-in-the-woods-cLJ9SJLjXpE%22%7D%5D>

Harvard Health Publishing. (2023, July 17). Is social media use bad for young people's mental health? It's complicated. <https://www.health.harvard.edu/blog/is-social-media-use-bad-for-young-peoples-mental-health-its-complicated-202307172951>

Hassabis, D., Manyika, J., Dean, J. (2025, January 23). 2024: A year of extraordinary progress and advancement in AI. *Google Blog*. <https://blog.google/innovation-and-ai/products/2024-ai-extraordinary-progress-advancement/>

Heftiba, T. (2020). Starting your day with laughter and friends is pure happiness [Photograph]. Unsplash. https://unsplash.com/photos/woman-in-black-and-white-checked-long-sleeve-shirt-sitting-beside-man-in-green-crew-neck-l_ExpFwwOEg

Hemmings, G. (2017, April 6). The Love Economy: Fixing the Economic Jenga That Greed Built. *Sustainable Brands*. <https://sustainablebrands.com/read/the-love-economy-fixing-the-economic-jenga-that-greed-built>

Henderson, H. (2021, June 4). Valuing love economies. *WSIM*. <https://hazelhenderson.com/valuing-love-economies/>

Henderson, H. (2021). Total Productive System of an Industrial Society [Illustration]. *Tribute to Hazel Henderson*. <https://hazelhenderson.com/valuing-love-economies/>

Hermosillo, M. (2022, April 20). It is time to exclude exclusionary zoning from America's housing policy. *Columbia Political Review*. <https://www.cpreview.org/articles/2022/4/it-is-time-to-exclude-exclusionary-zoning-from-americas-housing-policy>

Hill, K. (2025, August 26). A Teen Was Suicidal. ChatGPT Was the Friend He Confided In. *The New York Times*. <https://www.nytimes.com/2025/08/26/technology/chatgpt-openai-suicide.html>

Hill, K. [@kashhill]. (2025, November 24). One of the changes that OpenAI has made to make ChatGPT safer is a "take a break" nudge. [Tweet]. *Twitter*. <https://x.com/kashhill/status/1992954961592979923>

Hill, K., & Freedman, D. (2025, August 8). Chatbots Can Go Into a Delusional Spiral. Here's How It Happens. *The New Yorker Times*. <https://www.nytimes.com/2025/08/08/technology/ai-chatbots-delusions-chatgpt.html>

Hook, W. (2017). iPhone with various apps [Photograph]. Unsplash. <https://unsplash.com/photos/space-gray-iphone-x-9e9PD9blAto>

Hoskin, M. (2026, February 26). Self-care became a billion-dollar industry. Women are still exhausted. *Forbes*. <https://www.forbes.com/sites/maiahoskin/2026/02/26/self-care-became-a-billion-dollar-industry-women-are-still-exhausted/>

Hurst, A. (2025, August 15). Loneliness is rife among young men. It's time to get offline and talk to each other. *The Guardian*. <https://www.theguardian.com/commentisfree/2025/aug/15/loneliness-rife-young-men-get-offline-talk-to-each-other>

Illing, S. (2022, May 8). The philosopher who warned us about loneliness and totalitarianism. *Vox*. <https://www.vox.com/vox-conversations-podcast/23048597/vox-conversations-hannah-arendt-totalitarianism-the-philosophers>

Inzlicht, M., Cameron, C. D., D'Cruz, J., & Bloom, P. (2024). In praise of empathic AI. *Trends in Cognitive Sciences*, 28(2), 89–91. <https://doi.org/10.1016/j.tics.2023.12.003>

Jiang, M. (2025, November 26). Inside the loneliness economy: Longing, rented companionship, and connection-as-a-service. *Substack*. <https://oneliness.substack.com/p/inside-the-loneliness-economy-longing>

Johnson, S. (2023, November 16). WHO declares loneliness a ‘global public health concern’. The Guardian. <https://www.theguardian.com/global-development/2023/nov/16/who-declares-loneliness-a-global-public-health-concern>

Johnston-Wheeler, E. (2026, January 13). The Toronto man turning an underground food court into a third space to make friends. Toronto Today. <https://www.torontotoday.ca/local/arts-culture/aura-underground-food-court-third-space-11732365>

Johnston, S. (2024, June 17). Web 2.0: The interactive web | simple explanation. Mindfultech Institute. <https://mindfultech.institute/web-2/>

Joyner, D. (2025, July 29). ‘AI veganism’: Some people’s issues with AI parallel vegans’ concern about diet. The conversation. <https://theconversation.com/ai-veganism-some-peoples-issues-with-ai-parallel-vegans-concerns-about-diet-260277>

Juvonen, J., Lessard, L. M., Kline, N. G., & Graham, S. (2022). Young adult adaptability to the social challenges of the COVID-19 pandemic: The protective role of friendships. *Journal of Youth and Adolescence*, 51(3), 397–411. <https://doi.org/10.1007/s10964-022-01573-w>

Kaput, M. (2025, October 31). A New Survey Shows 1 in 5 Teens Are in Relationships With AI. Marketing Artificial Intelligence Institute. <https://www.marketingaiinstitute.com/blog/ai-relationships>

Kardefelt-Winther, D. (2014). A conceptual framework for problematizing excessive online resource use. *Computers in Human Behavior*, 31, 351–354. <https://doi.org/10.1016/j.chb.2013.11.002>

Kehinde, S. (2026, January 12). Why is Generation Z poorer than expected: A commentary. Qeios. <https://www.qeios.com/read/NRTJKD/pdf>

Kent, J. (2023, January 24). Why loneliness is both an individual thing and a shared result of the cities we create. The Conversation. <https://theconversation.com/why-loneliness-is-both-an-individual-thing-and-a-shared-result-of-the-cities-we-create-198069>

Kent, J. A. (2023, November 6). Perfectionism might be hurting you. Here’s how to change your relationship to achievement - Harvard Summer School. Harvard Summer School. <https://summer.harvard.edu/blog/perfectionism-might-be-hurting-you-heres-how-to-change-your-relationship-to-achievement/#What-is-Perfectionism>

Kim, M. (2026, March 17). Do you live in a ‘lonelygenetic environment’? Being in nature may help. The Washington Post. <https://www.washingtonpost.com/wellness/2025/06/17/nature-reduces-loneliness/>

Kim, M., Lee, S., Kim, S., Heo, J.-I., Lee, S., Shin, Y.-B., Cho, C.-H., & Jung, D. (2025). Therapeutic potential of social chatbots in alleviating loneliness and social anxiety: Quasi-experimental mixed methods study. *JMIR (Journal of Medical Internet Research)*. <https://doi.org/10.2196/65589>

Kingsnorth, P. (2018, August 22). The myth of progress (E. Vaughan-Lee, Interviewer). *Emergence Magazine*. <https://emergencemagazine.org/conversation/the-myth-of-progress/>

Knibbe, M., Azghari, Y., van Beelen, A., van den Berg, L., Besteman, F., Jurrius, K., van Lanen, S., & Horstman, K. (2024, December). Landscapes, cultures and technologies of loneliness: A call for participatory research with young adults. *Public Health*, 237, 147–149. <https://doi.org/10.1016/j.puhe.2024.09.027>

Knight, T. (2023, September 21). Gen Z doesn’t want to eat if it means putting down their phones: study. *New York Post*. <https://nypost.com/2023/09/21/gen-z-doesnt-want-to-eat-if-it-means-putting-down-their-phones-study/>

Koetsier, J. (2025, April 29). 80% of Gen Zers would marry an AI, study finds. *Forbes*. <https://www.forbes.com/sites/johnkoetsier/2025/04/29/80-of-gen-zers-would-marry-an-ai-study/>

KPMB Architects. (n.d.). 150 Dan Leckie Way. <https://www.kpmb.com/project/150-dan-leckie-way/>

KPMG. (2025, October 9). Generative AI boom among Canadian students raises dilemmas. <https://kpmg.com/ca/en/home/media/press-releases/2025/10/generative-ai-boom-among-canadian-students-raises-dilemmas.html>

Krishnadas, R., Thilakan, V. (2025, December 4) Navigating the new frontier: Psychiatrists’ guide to using large language models in daily practice. Cambridge University Press. <https://www.cambridge.org/core/journals/bjpsych-advances/article/navigating-the-new-frontier-psychiatrists-guide-to-using-large-language-models-in-daily-practice/>

Leary, M. R. (2010). Affiliation, acceptance, and belonging: The pursuit of interpersonal connection. In S. T. Fiske, D. T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., Vol. 2, pp. 864–897). John Wiley & Sons. <https://doi.org/10.1002/9780470561119.socpsy002024>

Lee, A. (2025, November 14). Lost in the loop: when AI conversations mess with your mind. *Telus Wise*. <https://www.telus.com/en/wise/resources/content/article/lost-in-the-loop-when-ai-conversations-mess-with-your-mind>

Léger. (2025, August 25). Views on Artificial Intelligence: A survey of Canadians. https://leger360.com/wp-content/uploads/2025/08/Views-on-AI_August2025-1.pdf

Lenhart, A., & Madden, M. (2005, July 27). Teens and technology. *Pew Research Center*. <https://www.pewresearch.org/internet/2005/07/27/teens-and-technology/>

Lepore, J. (2020, March 30). The history of loneliness. *The New Yorker*. <https://www.newyorker.com/magazine/2020/04/06/the-history-of-loneliness>

Lesne, J. (2024). Two ladies were having conversations in a coffee shop [Photograph]. *Unsplash*. <https://unsplash.com/photos/a-woman-sitting-at-a-table-with-a-cup-of-coffee-mcrj2CkVOPE>

Lopes, H. (2017). Four people’s arms around each other facing sunset [Photograph]. *Unsplash*. <https://unsplash.com/photos/four-person-hands-wrap-around-shoulders-while-looking-at-sunset-PGnqTOrXWLs>

Lorde, N. (2025). Biidaasige Park [Photography]. *Street of Toronto*. <https://streetsoftoronto.com/toronto-culture/how-to-spend-a-perfect-day-at-torontos-incredible-new-biidaasige-park/>

Lunau, K. (2026, January 15). Evan Solomon Wants Canada to Trust AI. Can We Trust Evan Solomon? *The Walrus*. <https://thewalrus.ca/evan-solomon-ai/>

Lynch, B. M. (2016, February 23). Study finds our desire for “like-minded others” is hard-wired. *KU News*. <https://news.ku.edu/news/article/2016/02/19/new-study-finds-our-desire-minded-others-hard-wired-controls-friend-and-partner>

Lynch, S. (2021, February 5). How large language models will transform science, society, and AI. *Stanford University Human-Centered Artificial Intelligence*. <https://hai.stanford.edu/news/how-large-language-models-will-transform-science-society-and-ai>

M. (2017). A girl lying face down on a bed [Photograph]. *Unsplash*. <https://unsplash.com/photos/woman-leaning-on-bed-T9THJMIIPM>

Maclean’s. (2026, January 9). Concert tickets are a luxury item that could change soon. <https://macleans.ca/the-year-ahead/concert-tickets-are-a-luxury-item-that-could-change-soon/>

Mahdawi, A. (2025, August 16). Did the system update ruin your boyfriend? Love in a time of ChatGPT. *The Guardian*. <https://www.theguardian.com/commentisfree/2025/aug/16/chatgpt-update-love-boyfriend>

Malik, A. (2026, February 27). ChatGPT reaches 900M weekly active users. *TechCrunch*. <https://techcrunch.com/2026/02/27/chatgpt-reaches-900m-weekly-active-users/>

Maples, B., Cerit, M., Vishwanath, A. & Pea, R. (2024, January 22). Loneliness and suicide mitigation for students using GPT3-enabled chatbots. *npj Mental Health Res* 3, 4 (2024). <https://doi.org/10.1038/s44184-023-00047-6>

Marcus, G. (2025, November 29). Three years on, ChatGPT still isn’t what it was cracked up to be – and it probably never will be. *Substack*. <https://garymarcus.substack.com/p/three-years-on-chatgpt-still-isnt>

Marr, B. (2023, May 19). A Short History Of ChatGPT: How We Got To Where We Are Today. *Forbes*. <https://www.forbes.com/sites/bernardmarr/2023/05/19/a-short-history-of-chatgpt-how-we-got-to-where-we-are-today/>

Martin, S. (2024, August 2). Journaling is a simple, effective way to cope with life's challenges. Psychology Today. <https://www.psychologytoday.com/ca/blog/conquering-codependency/202408/how-to-journal-for-mental-health>

Martínez, N. A. (2026, January 9). CES 2026 introduces Emily: She's Life-Size, AI-Powered and ready for intimacy. CNET. <https://www.cnet.com/tech/services-and-software/ces-2026-emily-sex-robot-with-memory/>

Mauran, C. (2024, May 30). Meta is using your posts to train AI. It's not easy to opt out. Mashable. <https://mashable.com/article/meta-using-posts-train-ai-opt-out>

Mayers, A. M., & Svartberg, M. (2001). Existential loneliness: A review of the concept, its psychosocial precipitants and psychotherapeutic implications for HIV-infected women. *British Journal of Medical Psychology*, 74(4), 539–553. doi:10.1348/000711201161082

McKinsey. (2024, May 30). The state of AI in 2024: Gen AI adoption spikes and starts to generate value. <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-2024>

McMahon, L. (2025, September 1). Meta to stop its AI chatbots from talking to teens about suicide. BBC. <https://www.bbc.com/news/articles/c2kzl79jv15o>

Metz, C. (2020, November 24). Meet GPT-3. It has learned to code (and blog and argue). The New York Times. <https://www.nytimes.com/2020/11/24/science/artificial-intelligence-ai-gpt3.html>

Mintel. (2024, January 11). Canadian grocery retail trends. <https://www.mintel.com/insights/retail/canadian-grocery-retail-trends/>

Montreal AI Ethics Institute. (2025, January 17). The death of Canada's Artificial Intelligence and Data Act: What happened and what's next for AI regulation in Canada. <https://montrealethics.ai/the-death-of-canadas-artificial-intelligence-and-data-act-what-happened-and-whats-next-for-ai-regulation-in-canada/>

Mount, H. (2018). A small group of street preachers spoke out against abortion, gay marriage and the Black Lives Matter movement for a second day outside of Willis Library on the UNT Campus in Denton [Photograph]. Unsplash. <https://unsplash.com/s/visual/2dfc9812-f352-4850-88bc-75d2d6d5b9f4?asset=%5B%22Photos%22%2C%7B%22slug%22%3A%22people-holding-signage-rallying-outdoor-TakmtqT6qU8%22%7D%5D>

Mull, A. (2021, January 27). The Pandemic Has Erased Entire Categories of Friendship. The Atlantic. <https://www.theatlantic.com/health/archive/2021/01/pandemic-goodbye-casual-friends/617839/>

Naipo.de (2020). A person holding a smartphone near a payment terminal [Photograph]. Unsplash. https://unsplash.com/photos/person-holding-black-android-smartphone-k24rOBJ2D_0

Nass, C., Steuer, J., & Tauber, E. (1994). Computers are social actors. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*. <https://dl.acm.org/doi/epdf/10.1145/191666.191703>

Nay, I. (2024, October 8). Nearly a quarter of Canadians work in the gig economy: poll. CBC News. <https://www.cbc.ca/news/canada/british-columbia/securian-canada-gig-work-poll-1.7340681>

Neumann, D., Boyle, G., Chan, R. (2013, July). Empathy towards individuals of the same and different ethnicity when depicted in negative and positive contexts. *Personality and Individual Differences*, 55, 8–13. <https://www.sciencedirect.com/science/article/abs/pii/S0191886913000494>

New York Post. (2025, September 16). Gen Z spends significantly less time outside than Gen X, new survey shows. <https://nypost.com/2025/09/16/lifestyle/gen-z-spends-less-time-outside-than-gen-x-new-survey-shows/>

Nicholls, B. (2025, Jun 20) 'Nothing threatening about it': U of C study explores how robots could address social isolation in seniors. *Calgary Herald*. <https://calgaryherald.com/news/university-calgary-study-robots-social-isolation-seniors>

No Revisions. (2020). Two fingertip trying to reach each other [Photograph]. Unsplash. <https://unsplash.com/photos/person-wearing-black-watch-and-black-leather-strap-TSVVNJ1j0Ss>

Novicoff, M. (2024, March 24). 'It's Causing Them to Drop Out of Life': How Phones Warped Gen Z. *Politico Magazine*. <https://www.politico.com/news/magazine/2024/03/24/the-anxious-generation-qa-00147880>

Odile. (2025). A girl looking outside and surrounded by plants [Photograph]. Unsplash. <https://unsplash.com/photos/a-woman-sits-alone-in-a-sunlit-room-lgAxOMl8kCE>

Office of Consumer Affairs. (2024, June 12). Dark patterns. <https://ised-isde.canada.ca/site/office-consumer-affairs/en/dark-patterns>

Oldenburg, R. (1989). *The great good place: Cafés, coffee shops, bookstores, bars, hair salons, and other hangouts at the heart of a community*. Paragon House.

OpenAI. (2025, March 21). Early methods for studying affective use and emotional well-being on ChatGPT. <https://openai.com/index/affective-use-study/>

Orchard, T. (2025, July 22). Is male loneliness a new epidemic or an age-old struggle? Psychology Today. <https://www.psychologytoday.com/ca/blog/the-kaleidoscope/202507/is-male-loneliness-a-new-epidemic-or-an-age-old-struggle>

Our World in Data. (2024, August 30). Investment in generative AI has surged recently. <https://ourworldindata.org/data-insights/investment-in-generative-ai-has-surged-recently>

Parent, N., Dadgar, K., Xiao, B., Hesse, C., & Shapka, J. D. (2021). Social disconnection during COVID-19: The role of attachment, fear of missing out, and smartphone use. *Journal of Youth and Adolescence*, 51(3), 383–396. <https://doi.org/10.1111/jora.12658>

Pashtonistan. (2025). I asked AI to plan my life for 30 days [Figure]. *Futurism*. <https://vocal.media/futurism/i-asked-ai-to-plan-my-life-for-30-days-here-s-what-happened>

Pataranutaporn, P., Karny, S., Archiwanguprok, C., Albrecht, C., Liu, A. R., & Maes, P. (2025). "My Boyfriend is AI": A computational analysis of human-AI companionship in Reddit's AI community (arXiv:2509.11391). *arXiv*. <https://arxiv.org/abs/2509.11391>

Patel, A. (2025, August 7). How large language models (LLMs) are trained. *Medium*. <https://medium.com/@arohipatel270/how-large-language-models-llms-are-trained-43644f703829>

Pearson, C. (2025, June 6). A New Way to Date: The Old-Fashioned Way. The New York Times. <https://www.nytimes.com/2025/06/06/well/dating-irl-analog-online.html>

Peplau, H. E. (1955). Loneliness. *The American Journal of Nursing*, 55(12), 1476–1481. <https://doi.org/10.2307/3469548>

Perez, S. (2025, August 12). AI companion apps on track to pull in \$120M in 2025. *Tech Crunch*. <https://techcrunch.com/2025/08/12/ai-companion-apps-on-track-to-pull-in-120m-in-2025/>

Perlman, D., & Peplau, L. A. (1981). Toward a social psychology of loneliness. In S. Duck & R. Gilmour (Eds.), *Personal relationships: 3. Personal relationships in disorder* (pp. 31–56). Academic Press. <https://peplau.psych.ucla.edu/wp-content/uploads/sites/141/2017/07/Perlman-Peplau-81.pdf>

Perlman, D., & Peplau, L. A. (1998). Loneliness. In H. S. Friedman (Ed.), *Encyclopedia of mental health* (Vol. 2, pp. 571–581). Academic Press. <https://peplau.psych.ucla.edu/wp-content/uploads/sites/141/2017/07/Perlman-Peplau-98.pdf>

Petrushkevich, U. (2023). Question mark [Photograph]. Unsplash. <https://unsplash.com/photos/a-neon-sign-on-the-side-of-a-building-et5LFtFg-iQ>

Phang, J., Lampe, M., Ahmad, L., Agarwal, S., Fang, C. M., Liu, A. R., Danry, V., Lee, E., Chan, S. W. T., Pataranutaporn, P., & Maes, P. (2025, April 4). Investigating affective use and emotional well-being on ChatGPT. *OpenAI*. <https://arxiv.org/abs/2504.03888>

Phares, E. (2025, July 22). Dating Statistics and Facts. *Forbes*. <https://www.forbes.com/health/dating/dating-statistics/>

Practical Philosophy. (n.d.). What to expect at your first Practical Philosophy Club. Practical Philosophy club. <https://www.practicalphilosophy.club/toronto-canada/>

Proskuryakova, L., Saritas, O., Kyznyngasheva, E. (2015). STEEPV framework with examples of what is covered under each category [Figure]. ResearchGate. https://www.researchgate.net/figure/STEEPV-framework-with-examples-of-what-is-covered-under-each-category_fig1_274566158

Purtill, J. (2023, February 28). Replika users fell in love with their AI chatbot companions. Then they lost them. ABC News. <https://www.abc.net.au/news/science/2023-03-01/replika-users-fell-in-love-with-their-ai-chatbot-companion/102028196>

Qualter, P., Vanhalst, J., Harris, R., Van Roekel, E., Lodder, G., Bangee, M. (2015) Loneliness across the life span. *Perspect Psychol Sci.* ; 10(2):250–64.

Rana, U. (2026, February 5). AI may be killing entry-level jobs, Bank of Canada governor warns. Global News. <https://globalnews.ca/news/11654278/ai-killing-entry-level-bank-of-canada/>

Rao, D. (2024, March 26). The unfortunate, ongoing disappearance of ‘third places’. The Week. <https://theweek.com/culture-life/third-places-disappearing>

Ratcliffe, R. (2025, July 7). In Thailand, where mysticism thrives, AI fortune telling finds fertile ground. The Guardian. <https://www.theguardian.com/world/2025/jun/05/in-thailand-where-mysticism-thrives-ai-fortune-telling-finds-fertile-ground>

Rawson-Harris, J. (2018). A girl looking outside from the window [Photograph]. Unsplash. <https://unsplash.com/photos/a-woman-looking-out-of-a-window-with-blinds-md7cCWYVq9U>

Regalado, F. (2025, September 30). What We Know About ChatGPT’s New Parental Controls. The New York Times. <https://www.nytimes.com/2025/09/30/technology/chatgpt-teen-parental-controls-openai.html>

Reitmeier, R. O. (2025, August 19). How cringe culture is hindering professional growth for Gen Z. Forbes. <https://www.forbes.com/sites/ruthreitmeier/2025/08/19/how-cringe-culture-is-hindering-professional-growth-for-gen-z/>

Rice, M. (2022, June 28). Freemium, Explained. Built in, <https://builtin.com/articles/freemium>

Rideout, V., M. A., Peebles, A., Ph. D., Mann, S., Ph. D., Robb, M. B., Ph. D., & Common Sense. (2021). The Common Sense Census: Media Use by tweens and Teens, 2021 (J. Robb, Ed.). Common Sense. https://www.common sensemedia.org/sites/default/files/research/report/8-18-census-integrated-report-final-web_0.pdf

Replika. (2023). Introducing a new feature to the Replika experience [image]. Replika. <https://blog.replika.com/posts/ask-replika>

Romard, R. (2023, January 19). Student debt is out of control in Canada. Canadian Centre for Policy Alternatives. <https://www.policyalternatives.ca/news-research/student-debt-is-out-of-control-in-canada/>

Roose, K. (2023, May 30). A.I. poses ‘risk of extinction,’ industry leaders warn. The New York Times. <https://www.nytimes.com/2023/05/30/technology/ai-threat-warning.html>

Roose, K. (2024, October 24). Can A.I. Be Blamed for a Teen’s Suicide? The New York Times. <https://www.nytimes.com/2024/10/23/technology/characterai-lawsuit-teen-suicide.html>

Rowhide Youth Services. (2016, April 12). The Digital Diet of the American Teen. Rowhide Youth Services. <https://rawhide.org/blog/infographics/teens-digital-diet>

Roundicons. (n.d.). A set of icons featuring a skater, a woman reading a book, a person taking a picture, and two people looking down at their cellphones [icon]. Freepik. https://www.freepik.com/icon/man_14039765#fromView=search&page=2&position=9&uuid=df5c190a-517a-4fa1-9444-8419d7c7fb01

Russell, D., Peplau, L. A., & Ferguson, M. L. (1978). Developing a measure of loneliness. *Journal of Personality Assessment*, 42, 290-294.

Saim, M., Hayat, H., Hayat, D. (2025, November 28). The polite deception: How AI sycophancy threatens truth and trust. <https://www.walturn.com/insights/the-polite-deception-how-ai-sycophancy-threatens-truth-and-trust>

Salem, A. B. (2023, July 27). The Hot Air Balloon Retrospective: A Powerful Method for Continuous improvement - Scrum Master Org. Scrum Master #1. <https://scrum-master.org/en/the-hot-air-balloon-retrospective-a-powerful-method-for-continuous-improvement/>

Seven, Z. (2025, December 21). Cultural assimilation—How it affects mental health. Verywell Mind. <https://www.verywellmind.com/what-is-cultural-assimilation-5225960>

Shani, M. (2019). One girl facing a camera and standing next to three girls who are taking selfie [Photograph]. Unsplash. <https://unsplash.com/photos/women-on-stairs-zaAlR2R58Ck>

Shewaga, A. (2021). A young woman resting her head on her arm [Photograph]. Unsplash. <https://unsplash.com/photos/woman-in-red-and-white-floral-dress-lying-on-brown-wooden-table-qJME1eVcej8>

Singer, N. (2026, February 23). ‘A.I. Literacty’ Is Trending in Schools. Here’s Why. The New York Times. <https://www.nytimes.com/2026/02/23/business/ai-literacy-faq.html>

Skjuve, M., Følstad, A., Fostervold, K. I., & Brandtzæg, P. B. (2021). My chatbot companion: A study of human-chatbot relationships. *International Journal of Human-Computer Studies*, 149, Article 102601. <https://doi.org/10.1016/j.ijhcs.2021.102601>

Solano, C. H. (1980). Two measures of loneliness: A comparison. *Psychological Reports*, 46(1), 23–28. doi:10.2466/pr0.1980.46.1.23

Starr, R. (2026, February 16). The Psychology of Jealousy and Envy — Professor RJ Starr. Professor RJ Starr. <https://profrjstarr.com/the-psychology-of-us/the-psychology-of-jealousy-why-we-feel-green-with-envy>

Statistics Canada. (2021, June 24). Internet use and COVID-19: How the pandemic increased the amount of time Canadians spend online. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2021001/article/00027-eng.htm>

Statistics Canada. (2021, November 24). Canadian social survey: Loneliness in Canada. <https://www150.statcan.gc.ca/n1/daily-quotidien/211124/dq211124e-eng.htm>

Statistics Canada. (2021, October 28). Religious affiliation in Canada. <https://www150.statcan.gc.ca/n1/pub/75-006-x/2021001/article/00010-eng.htm>

Statistics Canada. (2022, July 13). Home alone: More persons living solo than ever before. <https://www150.statcan.gc.ca/n1/daily-quotidien/220713/dq220713a-eng.htm>

Statistics Canada. (2022, September 29). Living solo. <https://www.statcan.gc.ca/o1/en/plus/1908-living-solo>

Statistics Canada. (2024, July 30). You’ve got a friend in me. <https://www.statcan.gc.ca/o1/en/plus/6735-youve-got-friend-me>

Statistics Canada. (2025, August 8). Labour Force Survey, July 2025. <https://www150.statcan.gc.ca/n1/daily-quotidien/250808/dq250808a-eng.htm>

Statistics Canada. (2025, January 16). Rising mental health concerns among youth. <https://www.statcan.gc.ca/o1/en/plus/7642-rising-mental-health-concerns-among-youth>

Stein, S. (2023, July 18). The Importance of Community. *Psychology Today*. <https://www.psychologytoday.com/ca/blog/what-the-wild-things-are/202307/the-importance-of-community>

Stryker, C. (n.d.). What are large language models? IBM. <https://www.ibm.com/think/topics/large-language-models>

Subin, S. (2025, October 23). AI is already taking white-collar jobs. Economists warn there’s “much more in the tank.” CNBC. <https://www.cnbc.com/2025/10/22/ai-taking-white-collar-jobs-economists-warn-much-more-in-the-tank.html>

Sustainability Directory. (2025, November 24). What role does urban design play in loneliness? <https://lifestyle.sustainability-directory.com/question/what-role-does-urban-design-play-in-loneliness/>

Tam, K.Y.Y., Inzlicht, M. People are increasingly bored in our digital age. *Commun Psychol* 2, 106 (2024). <https://doi.org/10.1038/s44271-024-00155-9>

Tateisi, J. (2017). Step up [Photograph]. Unsplash. https://unsplash.com/photos/toddlers-standing-in-front-of-beige-concrete-stair-bJhT_8nbUA0

The Dawn Project. (n.d.). The history of Tesla full self-driving. <https://dawnproject.com/the-history-of-tesla-full-self-driving/>

The EBN: Montréal's Express Bike Network. (2025). Rue De Bellechasse [Photograph]. Montréal. <https://montreal.ca/en/articles/ebn-montreals-express-bike-network-4666>

The Guardian. (2023, November 16). WHO declares loneliness a global public health concern. <https://www.theguardian.com/global-development/2023/nov/16/who-declares-loneliness-a-global-public-health-concern>

The Human Line Project. (n.d.). <https://thehumanlineproject.org/about-us>

The Learning Network. (2025, October 30). What Teenagers Are Saying About Being 'Cringe'. The New York Times. <https://www.nytimes.com/2025/10/30/learning/what-teenagers-are-saying-about-being-criinge.html>

The Runner Shop. (2024, April 26). How joining a Toronto run club can skyrocket your running performance. The Runners Shop. <https://www.therunnersshop.com/blogs/news/how-joining-a-toronto-run-club-can-skyrocket-your-running-performance>

thesunswarmth . [thesunswarmth]. (2024). My granddad speaks for 1 hour per day with an AI phone bot, seems to be helping considerably. [Online forum post]. Reddit. https://www.reddit.com/r/dementia/comments/17s3jzz/my_granddad_speaks_for_1_hour_per_day_with_an_ai/

Toronto Public Library. (2025). Learn AI. <https://tpl.ca/using-the-library/computer-services/learnai/>

TRG Datacenters. (2024). Google Search Data Reveals USA Most Interested in AI Relationships. TRG Datacenter. <https://www.trgdatacenters.com/resource/google-search-data-reveals-usa-most-interested-in-ai-relationships/>

Trittle, A. (2025, September 8). I analyzed r/MyBoyfriendsAI. Medium. <https://medium.com/@authoraishatrittle/i-analyzed-r-myboyfriendsai-5acedacac037>

Twenge J. M. (2020). Increases in Depression, Self-Harm, and Suicide Among U.S. Adolescents After 2012 and Links to Technology Use: Possible Mechanisms. *Psychiatric research and clinical practice*, 2(1), 19–25. <https://doi.org/10.1176/appi.prcp.20190015>

Twenge, J. M. (2025, September 25). It's not just you: Americans are still not hanging out. Generation Tech. <https://www.generationtechblog.com/p/its-not-just-you-americans-are-still>

UNESCO. (2023, April 20). AI-enabled voice assistants: No longer female by default. <https://www.unesco.org/en/articles/ai-enabled-voice-assistants-no-longer-female-default>

University of Illinois Chicago. (2026, February 23). What is (AI) artificial intelligence? <https://meng.uic.edu/news-stories/ai-artificial-intelligence-what-is-the-definition-of-ai-and-how-does-ai-work/>

Van de Velde, C. (2026). Sociology of loneliness: An introduction. *Acta Sociologica*, 69(1), 3-18.

Van Tilburg, T., (2021, October). Social, Emotional, and Existential Loneliness: A Test of the Multidimensional Concept, *The Gerontologist*, Volume 61, Issue 7, Pages e335–e344, <https://doi.org/10.1093/geront/gnaa082>

VandeHei, J., & Allen, M. (2025, October 29). Behind the Curtain: How an AI job apocalypse unfolds. *Axios*. <https://www.axios.com/2025/10/29/ai-jobs-apocalypse-navigate>

Ward, S. J., & King, L. A. (2017). Work and the good life: How work contribute to meaning in life. *Research in Organizational Behavior*. <https://doi.org/10.1016/j.riob.2017.10.001>

Wei, M. (2025, November 27). The emerging problem of AI psychosis. *Psychology Today*. <https://www.psychologytoday.com/ca/blog/urban-survival/202507/the-emerging-problem-of-ai-psychosis>

Weizenbaum, J. (1966). A conversation with ELIZA [screenshot]. Wikipedia. <https://en.wikipedia.org/wiki/ELIZA>

Wenger, J. D., Cameron, C. D., & Inzlicht, M. (2026). People choose to receive human empathy despite rating AI empathy higher. *Communications Psychology*, 4(1), 19. <https://doi.org/10.1038/s44271-025-00387-3>

Werth, T. B. (2026, February 13). OpenAI retires GPT-4o. The AI companion community is not OK. *Mashable*. <https://mashable.com/article/openai-retiring-chatgpt-gpt-4o-users-are-heartbroken>

Wilkins, J. (2025, December 26). Children falling apart as they become addicted to AI. *Futurism*. <https://futurism.com/artificial-intelligence/children-character-ai-addicted>

Wilson, J. (2025, November 30). Why some families are leaving Toronto for other parts of Ontario. *CTV News*. <https://www.ctvnews.ca/toronto/article/i-started-crying-why-some-families-are-leaving-toronto-for-other-parts-of-ontario/>

Wong, J. (2025, October 9). More young Canadians are tapping AI for learning, even when concerned about it. *CBC*. <https://www.cbc.ca/news/canada/psstudents-ai-2025-9.6932319>

World Economic Forum. (2019, January 17). How globalization 4.0 fits into the history of globalization. <https://www.weforum.org/stories/2019/01/how-globalization-4-0-fits-into-the-history-of-globalization/>

World Health Organization. (2025, June 30). Social connection linked to improved health and reduced risk of early death. <https://www.who.int/news/item/30-06-2025-social-connection-linked-to-improved-health-and-reduced-risk-of-early-death>

Yang, A., Jarrett, L., & Gallagher, F. (2025, August 26). The family of teenager who died by suicide alleges OpenAI's ChatGPT is to blame. *NBC News*. <https://www.nbcnews.com/tech/tech-news/family-teenager-died-suicide-alleges-openais-chatgpt-blame-rcna226147>

Yard, B. (2017, August 29). More people meeting online regardless of age, says expert. *CBC News*. <https://www.cbc.ca/news/canada/saskatoon/online-dating-evolution-study-singles-1.4265505>

Young, N. (2025, August 29). People are turning to AI for emotional support. Are chatbots up to the job? *CBC News*. <https://www.cbc.ca/news/business/companion-ai-emotional-support-chatbots-1.7620087>

Yuan, Y., Zhang, J., Aledavood, T., Zhang, R., & Saha, K. (2025). Mental health impacts of AI companions: Triangulating social media quasi-experiments, user perspectives, and relational theory. *arXiv*. <https://arxiv.org/abs/2509.22505>

Zao-Sanders, M. (2025, April 9). How people are really using gen AI in 2025. *Harvard Business Report*. <https://hbr.org/2025/04/how-people-are-really-using-gen-ai-in-2025>

Chapter 07

Appendices.

- A. List of experts interviewed
- B. Trends and key drivers shaping the system
- C. Gen Z research participant survey questions
- D. Gen Z research participant co-design workbook

Appendix A: List of experts interviewed

The following experts participated in 30–60-minute semi-structured interviews to inform the discovery and define phases of this research. Their perspectives were foundational in shaping the direction and depth of this work. We are sincerely grateful for their time and generosity in sharing their insights.

The interdisciplinary breadth of their backgrounds enabled this research to move beyond a single lens to understand what “connection” means across people, environments, time, and relational systems, including both living and non-living systems. These conversations challenged our initial assumptions and introduced more nuanced ways of thinking: from expanding the concept of loneliness beyond social isolation to include the relationship with oneself; to considering the ethical and relational dimensions of grief, including the dignity of the deceased; to grounding questions of AI companionship in frameworks of motivation, reward, and human behaviour. Collectively, these perspectives helped us to reframe the problem space and deepen the analytical approach taken in this work.

Dr. Kara Brisson-Boivin

Kara Brisson-Boivin is the Director of Research at MediaSmarts, Canada’s Centre for Digital Media Literacy, and an expert in youth digital media use. Kara researches the impacts of digital technology and culture on digital citizenship, digital well-being, and online resiliency for Canadians broadly and youth in particular.

Dr. André H. Caron

André Caron is a Professor Emeritus at the Université de Montréal and a leading scholar in Communication and Media Studies. He specializes in mass media, new and emerging technologies, and explores how technologies and people co-evolve in vast hybrid networks.

Monika Jiang

Monika Jiang is a curator, community organizer, and experience designer sensing into what revives a shared reality in a lonely age. Her work asks what becomes possible when we stop treating loneliness as a problem to solve, and start building from it instead.

Rachel Katz

Rachel Katz is a PhD candidate who works on topics at the intersection of moral philosophy and philosophy of psychiatry and medicine. Her dissertation focuses on how the development of AI tools for psychotherapy can/will alter the nature of the patient-therapist relationship.

Dr. Michael Inzlicht

Michael Inzlicht is a Professor of Psychology at the University of Toronto who uses methods from social psychology, cognitive science, and neuroscience to understand the nature of the mental effort we use to reach our goals and the nature of leisure activities we do for fun.

Dr. Jelena Markovic

Jelena Markovic is philosopher working in empirically-informed philosophy of mind and moral psychology. Her research focuses on unchosen transformative experiences, particularly grief.

Dr. John Oliffe

John Oliffe is a Professor at the University of British Columbia and a leading researcher in men’s health. His work focuses on masculinities as it influences men’s health behaviours and illness management, and its impact to overall life quality.

Dr. Luke Stark

Luke Stark is an Assistant Professor at the Western University whose work interrogates the historical, social, and ethical impacts of computing and artificial intelligence technologies, particularly those mediating social and emotional expression.

Additional thanks are extended to the Toronto-based researchers working on AI companionship and related topics, who shared their time and emerging insights through informal conversations. Their perspectives provided valuable context on the current research landscape and helped situate this work within ongoing academic inquiry.

Appendix B: Trends and key drivers shaping the system

STEEPV is a foresight framework used to analyze developments in the external environment. It identifies key emerging macro-level forces that influence how the future may unfold within the context of a specific issue.

The acronym stands for Social, Technological, Economic, Environmental, Political, and Values.

Given the breadth of signals it captures, STEEPV supports a more comprehensive and systemic understanding of complex problems. It enables a holistic view of the forces shaping an issue across multiple dimensions. In this research, it was applied to examine the macro-level dynamics influencing loneliness and the rise of AI companionship.

Social	Ways of life (e.g. use of leisure time, family living patterns), demographic structures, social inclusion and cohesion issues (fragmentation of lifestyles, levels of (in)equality, educational trends).
Technological	Rates of technological progress, pace of diffusion of innovations, problems and risks associated with technology (including security and health problems).
Economic	Levels and distribution of economic growth, industrial structures, competition and competitiveness, markets and financial issues.
Environmental	Pressures connected with sustainability and climate change, more localised environmental issues (including pollution, resource depletion, and associated biodiversity, and welfare concerns).
Political	Dominant political viewpoints or parties, political (in)stability, regulatory roles and actions of governments, political action and lobbying by non-state actors (e.g. pressure groups, paramilitaries).
Values	Attitudes to working life (e.g. entrepreneurialism, career aspirations, deference to authority, demands for mobility (across jobs or places, etc.), preferences for leisure, culture, social relations, etc.

Figure 19: STEEPV (Proskuryakova et al., 2015)



Social Environmental Technological

Decline of organically-formed connections

Humans are losing both the skills and the spaces that once fostered spontaneous and organic social connection

- In a time shaped by extreme digital convenience, organically-formed connections are becoming increasingly rare
- Social skills like navigating awkward silences, resolving interpersonal friction, or initiating conversation are being lost in the new generation
- These skills are being replaced by frictionless digital interactions, from social (friendships, dating) to practical (getting groceries)
- Urban design compounds the issue as third places such as libraries, cafes, and parks are vanishing, reducing opportunities for unplanned encounters
- In addition, algorithmic curation pre-determines your experience online, minimizing the unpredictability that is seen in the physical world
- In total the effect is a social landscape where meaningful connection feels elusive



Technological Social Economic

Want the human touch? That's extra

The human touch, in both physical and emotional aspects, will soon be a "premium" feature, across social life and business experiences

- As AI becomes more capable, scalable, and present in social and professional contexts, human interaction may be repositioned as a scarce and valuable commodity
- From customer service to romantic connection, as jobs get replaced by AI, if you want to talk to a real human, that will be a "luxury add-on"
- We see this emerging as dating apps offer AI-written bios and first messages, but people are tired of seeing and receiving robotic or chatGPT'd responses.
- In the workforce, employees who can demonstrate good judgment and personalized attention will be considered "luxury labor"
- The future may stratify access to real human connection: those who can afford it will pay for the actual human executive assistants, concierge, personal coach, or matchmaker, and everyone else will interact with bots.



(Enchanted Tools, 2026)

Technological

Value

Intimacy as a service (IaaS)

As loneliness in society reaches crisis levels, AI companions will soon be advertised widely as low-cost, on-demand solutions for emotional intimacy

- A whole new industry is emerging right before our eyes: digital intimacy
- Not only will 2026 see capable AI assistants emerge, but AI will soon ramp up acting as our closest companions, lovers, friends, and therapists
- Driven by rising isolation and disillusionment with human relationships (political division, economic conditions, etc) AI tools like Replika and Xiaoice will offer hyper-personalized support, tapping into the same business plan that drives streaming services and delivery apps: convenience and customization at your fingertips
- However, the risk to users include a dependency on platforms that simulate intimacy without friction or vulnerability
- Over time, this could shift norms around intimacy, consent, and emotional labor



(Heftiba, 2020)

Social

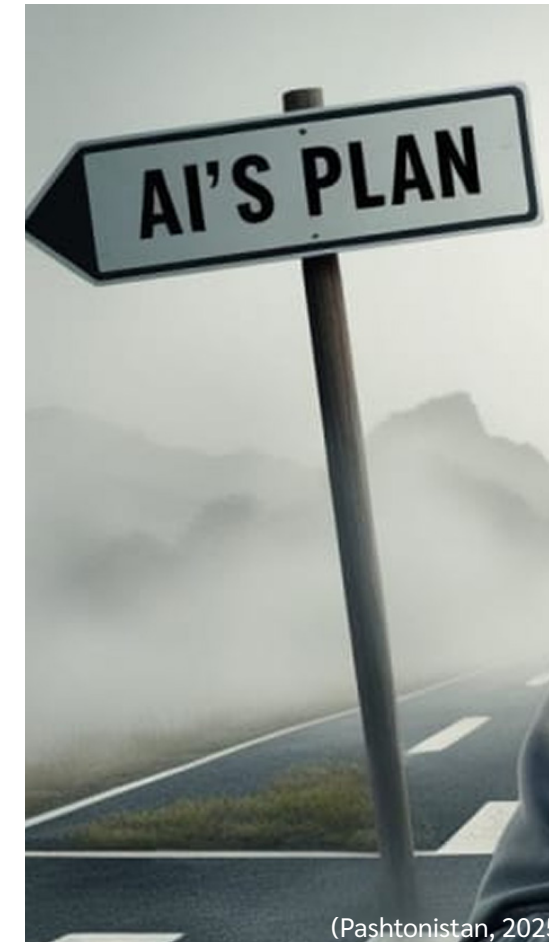
Value

Economic

Meet me in-person!

A group of people still believe in face-to-face interaction, so events and work places that prioritize in-person experience will become it's own unique category

- Swiping fatigue and frustration caused by rejection on dating apps make people crave in-person dating experiences.
- As COVID-19 has ended, companies are asking employees to return to the office to better monitor performance and enhance engagement.
- Opportunity area: A gap in social skills, influenced by the pandemic and app-based interactions, has led to awkwardness and discomfort during dates.
- There is a rise in niche social networks where people form small groups to enjoy shared hobbies, such as book clubs or crochet, contributing to increased in-person activities.
- Return-to-office policies could potentially boost economic growth by supporting physical stores and events.



(Pashtonistan, 2025)

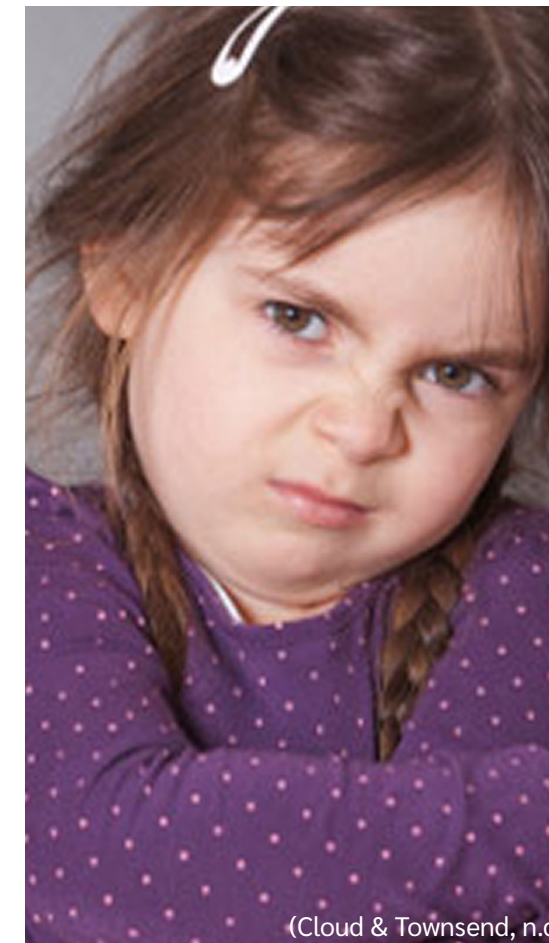
Technological

Value

AI, build me a happy life

AI assistants not only optimize our work calendar, but also our life and make us happy based on human flourishing metrics

- Human capacity and attention are limited, so they should be treated as scarce resources and used efficiently.
- People already use AI to optimize their work schedules and productivity—so why not use it to help build a happier life?
- There is a growing tendency to trust algorithms and rely on their judgment to shape a happier life using human-flourishing metrics.
- Once decision-making control is given to AI, it raises a question: are humans still the owners of their lives, or merely the outcomes of algorithmic calculations—even if they feel happy?



(Cloud & Townsend, n.d.)

Social

Value

Technological

Self-Centered by Design

Those who often talk to AI become more self-centered, less appreciative, and less able to connect with real people

- AI's interaction model is training people to believe they are always right and do not need to show gratitude when asking for help. As time spent using AI increases—both for work and companionship—this pattern of interaction becomes normalized.
- Because people generally avoid those who seem ungrateful, a reinforcing loop can form in which these individuals develop a heavier reliance on AI companionship, often without recognizing or admitting their own behavior.



(Cerde, 2024)

Political Social

Government drives in-person interactions

With worries about citizens' health and low birth rates, governments start intervening to alleviate the loneliness individual are facing

- There is still a focus on physical interaction, with governments organizing in-person events to strengthen human connections.
- This can be seen as a broader movement to combat loneliness among citizens.
- The key question is how to ensure that governments can effectively achieve this goal.



(Hartford, 2024)

Social Economic

Drug and alcohol free fun

More and more young people are choosing to "keep their inhibitions" rather than shed them.

- Young people are drinking less and less than older generations, driven by wellness, safety, and mental health awareness
- Rise of sobriety-positive movements (e.g., "Sober Curious", "Dry January") and destigmatization of not drinking (multiculturalism, wellness)
- Alcohol-free beverage innovation (adaptogen-based drinks, functional tonics) uses food science and biotech to mimic ritual without drunkenness
- Rise of non-alcohol bars, things like coffee parties and day parties - new businesses/entertainment created to cater to this demographic
- we-work and co-working spaces rise post pandemic - alternative ways to socialize
- Post-Millennial Trend: Little Treat Culture due to Cost-Of-Living (little treats instead of cocktails / nights out)
- TikTok trend: "\$100 minimum for going outside"



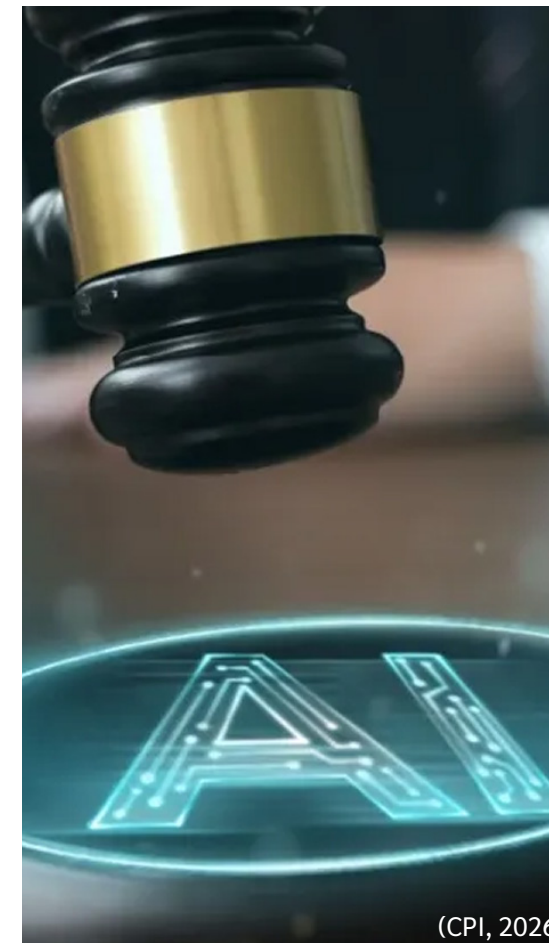
(Pashtonistan, 2025)

Environmental Economic Value

Climate compatability check

Shared climate values are becoming non-negotiable in relationships and close friendships

- As climate change becomes more disruptive, Gen Z cohort are internalizing environmental values not only in consumer choices but in romantic relationships, friendship formation, and community belonging.
- Similar to the trends we are seeing in political alignment or vaccination status became dating filters in previous years, climate ethics are now shaping compatibility and trust
- This manifests across micro (dating preferences) and macro (public infrastructure)



(CPI, 2026)

Political Technological Social

Regulation on AI companion

Rising cases of AI-driven psychosis and suicides have prompted governments to take action to regulate the use of AI companions, especially for younger users

- California: government takes action to limit AI companion usage after many teenagers suicides cases - notification warning and allowing parents to sue these AI companies if their children got hurt
- General regulating the use of AI:
 - ▷ Italy: children under the age of 14 will need parental consent to access AI and limiting generating deepfakes.
 - ▷ EU: categorize risk in different level (unacceptable, high risks and transparency requirement)

Appendix C: Gen Z research participant survey questions

A survey conducted from December 2025 to early February 2026 targeted Gen Z participants aged 18 to 28 living in Canada.

What is your age?

- 17 or younger
- 18-22
- 23-28
- 29 or older

Where do you currently live?

- Major metropolitan area (e.g., Greater Toronto Area or Greater Vancouver Area)
- Outside of major metropolitan area within Canada
- Outside of Canada

What best describe your gender?

- Female
- Male
- Non-binary
- A gender not listed here
- Prefer not to answer

What is your relationship status?

- Single
- In a relationship
- Married
- Divorced
- Prefer not to answer
- Other:

What best describes your current work or study arrangement?

- Fully remote (work or study entirely online)
- Hybrid (mix of remote and in-person)
- Fully in-person (at office, school, or campus)
- Not currently working or studying
- Other:

On average, how long do you usually spend on social media each day?

- Less than 30 minutes
- 30 minutes – 1 hour
- 1–2 hours
- 3–4 hours
- 5 hours or more
- Prefer not to answer

How often do you feel lonely?

- Always
- Often
- Sometimes
- Seldom
- Never

Please describe the situations in which you feel most lonely.

- Open-ended question

How do you cope with your loneliness?

- Open-ended question

Which of the following best describes your current level of social connectedness?

- I rarely or never see or encounter people
- I mostly see or encounter people but don't interact much
- I communicate and interact with people occasionally
- I regularly interact with people including through work, school, or similar
- Other:

Do you usually socialize with people/friends online or in person?

- Mostly online
- Mostly in person
- Both equally
- Other:

Have you used any AI tool?

- Yes, I've used AI tool
- No, I've never used any AI tool

What function do AI tools play for you? (Select all that apply)

- For therapy/companionship
- To organize your life
- To find your purpose
- To assist with work or school tasks
- For curiosity or entertainment, to relieve boredom
- To feel less lonely
- Other:

How often have you used AI tools for each of the below functions in the last six months?

- Functions:
 - ▷ For therapy/companionship
 - ▷ To organize your life
 - ▷ To find your purpose
 - ▷ To assist with work or school tasks
 - ▷ For curiosity or entertainment, to relieve boredom
 - ▷ To feel less lonely
 - ▷ Other: (participants listed)
- Frequency:
 - ▷ Daily
 - ▷ A few times per week
 - ▷ A few times per month
 - ▷ Rarely
 - ▷ Only tried once
 - ▷ Never

How often does AI meet your goals for using it in this way?

- Functions:
 - ▷ For therapy/companionship
 - ▷ To organize your life
 - ▷ To find your purpose
 - ▷ To assist with work or school tasks
 - ▷ For curiosity or entertainment, to relieve boredom
 - ▷ To feel less lonely
 - ▷ Other: (participants listed)
- Frequency:
 - ▷ Always
 - ▷ Often
 - ▷ Sometimes
 - ▷ Seldom
 - ▷ Never
 - ▷ Never use it for this function

What's missing for AI to meet your needs?

If you answered 'sometimes,' 'seldom,' or 'never' in the previous question, please briefly explain why certain functions do not fulfill your goal.

- Open-ended question

How comfortable are you with the idea of having an AI best friend?

- Very uncomfortable
- Uncomfortable
- Neutral
- Comfortable
- Very comfortable

How comfortable are you with the idea of having an AI romantic partner?

- Very uncomfortable
- Uncomfortable
- Neutral
- Comfortable
- Very comfortable

Do you believe AI companionship could replace human relationships?

- Yes
- No
- Not sure

Please explain your answer to the previous question.

- Open-ended question

Appendix D: Gen Z research participant co-design workbook

Building Stronger Relationships in the Age of AI

– Participant Workbook –

JANUARY 2026
OCADU

Introduction

In Canada, nearly 1 in 5 young people aged 15 to 24 said they always or often feel lonely.

According to Harvard Business Review in 2025, the top three uses of AI are: therapy or companionship, organizing my life, and finding purpose.

Many news outlets and experts have expressed concern about the connection between loneliness and rising use of AI companions. As researchers, we're curious to understand how Gen Z feels and what you're really experiencing when it comes to relationships and your perceptions of AI.

Activity 1: Your Relationships Today

- List out who you typically talk to on a weekly basis (e.g., “friend,” “coworker,” “roommate,” “family member,” “pet,” “cashier,” “AI chatbot”), using general descriptors rather than names
- Add the main purpose of the relationship
- Assess how satisfied you feel with each relationship, and why

Who you talk to	Purpose of relationship	Level of Satisfaction

Activity 2: Your Relationships in the Future

We've prepared three alternative headlines to explore how these potential events might affect you. We invite you to imagine how you would react in each situation.

How will you contribute to this research:

1. Evaluate the current state of your relationships today
2. Imagine various future scenarios and how your relationships may change in under those conditions
3. Explore strategies to bring your desired futures to life

Icebreaker: 5-word memoir

Write down five words that describes you or your life:

Headline 1:

New mental health guidelines released by the Government of Canada in 2026 recommends a minimum of 1 hour per day of in-person, human, socialization to minimize loneliness and maintain optimal mental health.

1. Will this event change the relationships you identified in the last activity? How?
2. How would you increase your in-person socialization time to meet the new minimum? If there's nothing you need to change, you can think about how you could make your current level of socialization last.
3. What supports from society or institutions might you need?

Headline 2:

By 2030, AI technology has surpassed all expectations and replaces 80% of the white- and blue-collar jobs in Canada.

1. How would you define your purpose in this world?
2. How would you spend your free time?
3. Will this event change the relationships you identified in the first activity? How?
4. What supports from society or institutions would help you find your meaning in this world?

Headline 3:

Bioengineering technology has perfected a robot in human form; in the year 2035, 10% of all marriages are between a human and a realistic AI-humanoid.

1. Will this event change the relationships you identified in the first activity? How? Will new relationships emerge?
2. How do you feel about AI and human marriage in this world? Would it make you more likely to get an AI partner or best friend?
3. Do you believe AI companionship could replace human relationships?

Reflection

Of the 3 scenarios, which society would you really want to live in?

What is one thing you can do today to bring that future closer to your reality?

On the contrary, which future is the least desirable to you?

What is one thing you can do today to make sure you thrive in that future?

Lastly, if you feel lonely sometimes, it's okay to seek help.

There are some great free resources such as Good2Talk (1-866-925-5454) or Warm line (416-960-9276).

Take care of yourself & thank you for joining our workshop!