

AI-Mediated Character Development to Explore Identity as an Intervention for Loneliness

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Abstract

Loneliness affects approximately one-third of individuals in industrialized countries, with existing interventions showing mixed effectiveness due to diverse needs and practical limitations. This paper proposes investigating AI-mediated character development as a novel intervention for loneliness that focuses on strengthening internal identity rather than external social experiences. Research shows that stronger identity commitment correlates with reduced loneliness over time, while identity exploration facilitates such commitment. Character development – the creation and exploration of fictional personas – allows individuals to explore identity in a "safe space" while potentially alleviating loneliness through narrative identity construction and meaning-making. We present a three-part research plan: (1) exploring how existing practitioners use character development and AI role-playing through surveys and interviews with quantitative psychosocial measures; (2) conducting an experimental study on an AI-guided character development tool that draws on drama therapy frameworks; and (3) developing and evaluating a sophisticated intervention through an 8-week longitudinal study with 30-40 participants. The proposed system introduces novel interaction patterns for therapeutic applications of generative AI, guiding users through progressive character development activities while facilitating identity exploration. This work advances both the theoretical understanding of AI-mediated identity work and practical applications of generative AI for psychological well-being.

CCS Concepts

• **Human-centered computing** → **User studies; User centered design**; *HCI theory, concepts and models; Empirical studies in HCI.*

Keywords

Character development, loneliness, identity exploration, generative AI, virtual personas, psychological wellbeing, narrative identity, role-play

ACM Reference Format:

Anonymous Author(s). 2018. AI-Mediated Character Development to Explore Identity as an Intervention for Loneliness. In *Proceedings of Make sure to enter the correct conference title from your rights confirmation email (CHI '25)*. ACM, New York, NY, USA, 5 pages. <https://doi.org/XXXXXXX.XXXXXXX>

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CHI '25, Woodstock, NY

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ACM ISBN 978-1-4503-XXXX-X/2018/06
<https://doi.org/XXXXXXX.XXXXXXX>

1 Introduction

Loneliness and social isolation are growing in an increasingly digital and remote world. Despite unprecedented technological means to connect, loneliness remains pervasive, affecting approximately **a third of individuals in industrialized countries** [29]. This phenomenon has led to what the U.S. Surgeon General declared an "epidemic of loneliness" [37]. The gravity of this issue is underscored by research indicating that chronic loneliness can increase mortality risk by 26-29%, comparable to smoking 15 cigarettes a day [12].

Research increasingly shows that a strong sense of identity and committed self-concept is crucial for psychological well-being. Identity exploration is an iterative, dynamic process of multiple factors – commitment, in-depth exploration, and reconsideration of one's sense of identity [13, 14, 36]. Identity commitment – making firm choices about one's identity and engaging in activities that align with those choices – has been linked to reduced loneliness, improved mental health outcomes, greater resilience, and stronger interpersonal relationships. However, developing such commitment requires opportunities for safe and meaningful identity exploration. In-depth identity exploration – which involves reflecting on current identity commitments, searching for additional information, and talking to others about their choices – has been shown to strengthen identity commitment over time [23]. Other work has shown that participation in online communities focused on identity exploration, such as LGBTQ+ forums, could reduce loneliness and provide social support and a sense of belonging [35]. This highlights the potential of identity exploration as an avenue for improving psychological well-being in the long term.

One promising avenue for facilitating identity exploration is through character development, the creation and exploration of fictional personas. McAdams and McLean's work on "narrative identity" shows that those who construct stories that find meaning in adversity and feature themes of self-determination tend to experience better mental health and well-being [33]. While their work focused on life stories, research shows that creative and fictional storytelling can offer similar benefits [10, 39, 46], with works demonstrating their potential as cost- and time-effective therapeutic interventions [4, 25, 46]. Character development allows individuals to explore aspects of identity in a "safe space" while potentially strengthening their sense of self through narrative construction and meaning-making.

Many individuals explore their identity through fiction and fantasy – the Media Practice Model posits that adolescents select and interact with media, such as books and movies, that align with their developing identities, integrating observed traits and behaviors into their self-concept [45]. This identity exploration extends into digital spaces, where individuals can construct online avatars with different appearances and behaviors than their physical selves [17, 31]. Early research on digital identity highlighted how text-based virtual environments could serve as "identity workshops" [8], where participants explored different aspects of themselves through

created personas. While virtual avatars require platforms to maintain their existence, character development through creative work offers a unique opportunity for lasting identity exploration [5, 50]. Studies of fantasy role-playing games like Dungeons & Dragons show that players construct separate personas for their characters, yet the distinctions between self and character erode during play [50]. Furthermore, previous work has established that the ability to empathize is inversely correlated with loneliness over a lifetime [2], and role-play has been shown to increase empathy [3, 16]. This suggests that character development activities could address loneliness both through identity exploration and by strengthening empathetic capabilities.

The characters an individual develops can become integrated parts of their cognition, influencing how they experience and understand themselves in their daily lives. These characters are not intended to become independent agents or chatbots. Rather, they serve as lenses through which individuals can examine different aspects of themselves and their experiences. Some users may simply develop their characters conceptually, while others might write stories or engage in role-play. The key insight is that these characters become part of users' cognitive frameworks, subtly influencing how they process experiences and understand themselves even after active character development ends.

The liminal space that fictional characters can occupy, existing as both self and other in an individual's cognition, makes them an interesting target for designing a loneliness intervention. Character development allows individuals to explore a specific persona in depth, expanding experiences and narratives from an understanding of the character's identity [5, 50]. While character-building communities (focusing on the development and exploration of individual personas, such as TTRPG groups, original character-focused groups, and closed species communities) are growing in popularity [5], they remain specialized hobbies that may be intimidating or inaccessible to newcomers. Those who are not already familiar with character development may not even consider such an activity as a potential hobby or method of improving mental health. Some individuals may turn to more traditional methods to address loneliness and other aspects of psychological well-being, such as cognitive behavioral therapy, support through healthcare professionals, social interaction through interest groups, and enhancing personal skills through courses [18, 21, 40]. While such interventions can be effective, they may not be accessible or affordable to everyone and there is considerable heterogeneity in outcomes due to the diverse needs of individuals [9, 21].

Character development could offer a combination of privacy, personalization, guidance, and creative engagement not present in existing loneliness interventions. However, implementing such an intervention poses its own challenges, such as scalability and the fact that a large portion of the target audience – lonely individuals – may have difficulty engaging in an unfamiliar, niche creative activity. Generative artificial intelligence (GenAI) offers promising solutions to these challenges. Existing research demonstrates how GenAI can make creative processes more accessible to newcomers through guided interaction and iterative feedback [28]. The widespread adoption of services like Character.ai, which enables users to chat and role-play with fictional character chatbots, suggests strong public receptivity to AI-mediated character interaction [43].

Recent work has also shown how AI systems can create safe spaces for exploring sensitive topics—for instance, an AI-powered system helping individuals practice LGBTQIA+ advocacy through simulated conversations successfully built empathy and confidence [38]. Building on these advances, AI-mediated character development could offer several unique benefits: 24/7 availability for consistent support, personalized guidance that adapts to individual comfort levels, reduced stigma compared to traditional interventions, and scalability to reach a broader audience. Through thoughtful system design, we have the opportunity to intentionally facilitate exploration and reflection on identity [19].

Based on this potential, we propose a research plan to design and evaluate a system that introduces and guides character development activities for lonely individuals with little to no prior experience. Our investigation will examine how AI-mediated character development can facilitate identity exploration and potentially reduce feelings of loneliness. Specifically, we aim to research the following questions

- (1) How can AI-mediated character development support identity exploration and commitment?
- (2) What are the psychological and social outcomes (including but not limited to loneliness) of improved identity commitment through this intervention?
- (3) What design principles should guide such systems?

This work advances the field of generative AI and HCI in several ways. While existing work has shown how GenAI can make creative processes more accessible through guided interaction [28], we extend this to the deeply personal domain of identity exploration. Additionally, many GenAI systems focus on producing content or facilitating direct interaction; our approach positions GenAI as a scaffold for self-reflection and personal growth. We introduce novel interaction patterns for GenAI systems that must balance creative guidance with psychological support, with the aim of informing design principles for future therapeutic applications of GenAI.

2 Proposed Research

Our proposed research involves three steps: (1) an initial **exploration** of individuals familiar with character development, including surveys and interviews; (2) a **user study** with a simple GenAI tool for guiding character development; and (3) synthesizing insights from the initial survey and study to **develop and evaluate a sophisticated intervention**.

2.1 Part 1: Exploration

To understand the relationship between character development practices, identity exploration, and loneliness, we aim to conduct surveys and interviews with two target populations: character developers and AI role-players. We define **character developers** as individuals who regularly engage in character development activities, such as creating characters, writing out their personality and backstory, and exploring scenarios with their characters such as through role-play, character relationship development, or story writing. We define **AI role-players** as individuals who regularly engage in role-play with character chatbots such as Character.ai, ChatFai, HeyReal, and Candy.ai.

Surveys may be distributed on online research platforms such as CloudResearch or shared in character development communities; online research platforms have the benefit of a larger participant pool, while character development communities have a smaller but much more specific and relevant participant pool. We intend to include quantitative measures to measure identity processes and psychosocial wellbeing, such as the Utrecht-Management of Identity Commitments Scale (U-MICS) [14], the UCLA Loneliness Scale (ULS-8) [20], Lubben Social Network Scale (LSNS-6) [30], and Rosenberg Self-Esteem Scale (RSES) [41]. We will also collect measures to understand how individuals relate to characters they develop and role-play with, employing measures of interpersonal attraction scale [34], empathy towards the character [42], and adaptations of the Inclusion of Other in the Self Scale (IOS) or Audience-Persona Interaction Scale (API) [1] to understand the degree to which an individual identifies with and experiences their characters or roles as extensions of themselves.

In our interviews, we intend to explore more qualitative aspects of character development and role-play, exploring questions such as:

- How do people use character and role-playing-centric chatbots like Character.ai to explore their identity?
- What kind of relationships do people have with their characters / their chatbots?
- How do their interactions with character chatbots affect their psychological states (loneliness, self-esteem, confidence, etc.) and socialization with others?
- Why do people engage in character development and role-play? Do they seek certain positive experiences or alleviation of certain kinds of distress?

We intend to analyze the interviews with a mix of thematic analysis [6] and a method similar to Clio to extract hierarchical clusters to understand patterns that may emerge [47].

2.2 Part 2: Study with Simple GenAI Tool

To investigate the feasibility and user experience design of an AI-mediated character development tool, we propose to build a simple web interface using existing platforms such as the OpenAI API or Claude API. We aim to recruit participants from our target population – lonely individuals unfamiliar with character development – as well as experienced character developers and the general population, so that we can gain insights on how to improve both the functionality and the usability of the tool.

The tool is intended to be a chatbot that prompts the user to tell it about a new or existing fictional character of the user's creation, guiding them through expanding development on the character's personality and backstory, followed by exploring different scenarios with that character. Drawing from established therapeutic practices, our tool design incorporates key elements of drama therapy and psychodrama. Similar to how drama therapists use structured progression from warm-up and trust building, to exploration and scene setting, to sharing and reflection [27], our system would guide users through a progression of activities:

- familiarization of character development activities and simple character basics,
- gradual exploration of the character and scenarios,

- and provision of reflection prompts to guide the user's introspection on their experience.

The tool is intended to propose ways for the user to explore their characters in ways that encourage identity exploration. For instance, it might ask the user to describe how a character would respond to a situation, explain how two of their characters would interact or how their character might interact with someone the user knows in real life, provide prompts for the user to write stories with their characters, or role-play with the user. Like drama therapy's use of metaphor to create psychological safety [22, 27], our character development approach provides a protected space for identity exploration.

The study will proceed through the following steps:

- (1) Participants will take pre-intervention assessments on identity, loneliness, socialization, self-esteem, and empathy with other people and characters.
- (2) Participants will be split into three groups:
 - (a) an experimental group tasked with using the AI-mediated character development tool.
 - (b) a control group tasked with reading or writing to compare the tool with leisure and creative activities.
 - (c) a control group tasked with interacting with a chatbot to compare the tool with a general conversational agent that is not designed for character development.
- (3) Participants will take post-intervention assessments, consisting of the same set as before the study. They will also be asked to provide feedback on the tool.

After the study, we will analyze the results to examine relationships between loneliness and character development, exploring how identity exploration and exploratory variables such as empathy and self-esteem might explain our main findings. We expect to observe several key outcomes. Compared to the control group, we anticipate participants using the AI tool will show increased engagement in identity exploration and potentially decreased loneliness scores. We also expect to identify specific interaction patterns that either facilitate or hinder character development for newcomers. By including both experienced and novice users, we aim to uncover how AI guidance needs differ based on character development expertise. These insights will directly inform the design of our more sophisticated intervention in Part 3.

2.3 Part 3: Synthesis and Intervention Development

Combining insights from our exploration and study, we will develop and evaluate a more sophisticated intervention through multiple design iterations. Our development process will follow three main phases aligned with established HCI methodologies.

The initial design refinement phase will begin with think-aloud usability testing following the Boren & Ramey protocol [26], which allows for natural dialogue between experimenter and participant while maintaining methodological rigor. This approach is particularly suited for evaluating our system since participants may need encouragement when exploring unfamiliar character development activities. We will conduct sessions with 5-8 participants, gathering qualitative feedback on interaction patterns, points of confusion,

and desired features. The System Usability Scale (SUS) [7] will be used to establish baseline usability metrics.

In the feature development phase, we will implement identified improvements through iterative cycles. Each major feature addition will be evaluated through additional think-aloud sessions with 3–5 participants, supplemented by semi-structured interviews. We will track changes in SUS scores across iterations while using the UTAUT scale [49] to assess technology acceptance. Key areas of focus will include character information organization, scenario generation and exploration, reflection prompts, and user progress tracking.

The final phase will involve extended deployment and evaluation through a public beta release as a web application. We will conduct a longitudinal study with 30–40 participants over 8 weeks, measuring engagement metrics, identity exploration and commitment, changes in loneliness and related psychological measures, and system usability. This multi-phase approach allows us to refine both technical implementation and therapeutic aspects while ensuring the final system effectively supports identity exploration.

3 Further Research and Potential Challenges

The AI-mediated character development tool we currently propose focuses only on the user, but loneliness is a complex issue deeply intertwined with an individual's relationships with other people. In the future, we hope to expand the tool's functions to allow users to connect and form relationships through character-building activities. We also hope that the tool can be a way to ease individuals into existing character development communities – however, generative AI is often scorned in creative communities as a violation of human creativity. It would be necessary, then, to design the tool in a way that does not alienate the user from such communities, such as by ensuring that they are familiar with the culture and norms of character development communities and that the tool does not overstep in its assistance.

Unhealthy attachment is a notable risk. While some research suggests that AI chatbots, even when used over the short term, decrease feelings of loneliness [15, 18, 29], concerns have been raised about how they might lower the bar for what people think relationships can be and result in social withdrawal [48]. Existing work demonstrates the risks of internet addiction and internet gaming disorder; the tool, as a potentially engrossing technology used for an enjoyable hobby, may have a risk of problematic use as well [11, 24, 32]. However, there is also evidence that more devoted gamers can experience greater psychosocial benefits than casual gamers [44], suggesting that extensive use cannot be written off as entirely harmful. Careful assessment of user risks during the development and evaluation of the tool are critical.

Beyond attachment risks, several ethical considerations warrant attention. There are privacy concerns around storing and processing potentially sensitive personal information revealed through character development. Additionally, there are questions of algorithmic bias – the system must be carefully designed to avoid reinforcing harmful stereotypes or limiting the diversity of character expressions.

4 Conclusion

We propose a novel use case of GenAI in AI-mediated character development as an intervention for loneliness. While loneliness is deeply connected to socialization – something external to an individual – it is at its core a subjective experience. There is a growing body of research on the impact of AI companions affect loneliness, where the AI directly provides social engagement – that is, the AI acts on the external side of the equation of loneliness. The work we propose investigates the potential of GenAI in refining an individual's internal sense of self, acting on the internal side of the equation of loneliness.

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Received 20 February 2007; revised 12 March 2009; accepted 5 June 2009