

# Living Each Day with Intention: Social Robot for Promoting Self-Reflection in Older Adults

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## Keywords

Social robots, older-adults, self-persuasion, self-reflection

## 1. Introduction

Social robots are unique as persuasive agents due to their embodiment, which increases their capacity to promote behavioral and motivational change [3],[4]. We therefore designed an interaction between a humanoid social desktop robot — QT (Fig. 1) — and older adults aimed at promoting positive life changes through guided self-reflective exercises.

We focus on older adults as while much work has focused on using robots with this population to ameliorate loneliness and depressive symptoms through interactions with the technology (e.g., [2]), few studies have focused on using robots to increase feelings of fulfillment, value, and meaning in helping older adults thrive (and not just cope). However, research done with college students shows that robots can be used in positive psychology interventions to increase flourishing [1].

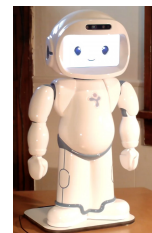


Figure1. QT

## 2. Project Summary

We created several modules, delivered by QT, which were designed to help older adults in Japan reflect on their lives. Our intent was to develop these for use in increasing their well-being and life satisfaction by highlighting positive experiences in their lives and having them contemplate possible changes to it. Each module was approximately 5 minutes. After each module and at the end of the interaction, OAs were interviewed about their experience of the interaction as well as self-reported changes in sense of happiness, sense of meaning, and desire to make positive changes.

Fifteen older adults interacted with the robot, either in single-family homes or in a conference room at a local university. One of these modules - presented here - was specifically designed to have older adults reflect on how they could make small changes in order to meet short-term (3-day and 1 month) goals.

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### 3. Iteration on Interaction Design

Inductive coding of interviews revealed that participants believed the interaction could improve their lives. Thirteen participants not only saw the exercises as useful, they also noted the atypical nature of self-reflecting on their lives. “Meaning of life and the like, it made me think about myself. I never really thought about the future like this, I was just stuck in the daily routine. It gave me time to think about myself” [P6]. Of the 15 participants, 7 noted positive changes to perceived happiness and 6 to their sense of meaning after this future oriented module. Additionally, 6 participants had an increased desire to make positive changes to their lives afterwards, indicating that the robot may have utility in spurring behavioral change. They saw QT as being advantageous over an app or computer (N=11), due to the conversational interface (N=5), facial expressiveness of QT (N=4), and their increased sense of emotion closeness to it (N=3).

Participants wanted this to be daily exercise (N=8) to help them plan their day. They felt like this would help them live more intentionally. “Rather than just living every day, I want to live more distinctly” [P5]. Older adults also wanted the robot to use simpler language and allow them more time to speak (more open-ended and follow-up questions). We present iterative changes to selected lines of the script below (v2) (Figure 2).

### 4. Conclusion

This research is an important first step in designing a social robot to affect small daily changes in the lives of older adults through self-persuasion. Our next steps include further developing and testing a second iteration of these self-reflection modules, and testing for subjective and objective changes in life satisfaction and well-being after several weeks of continuous use.

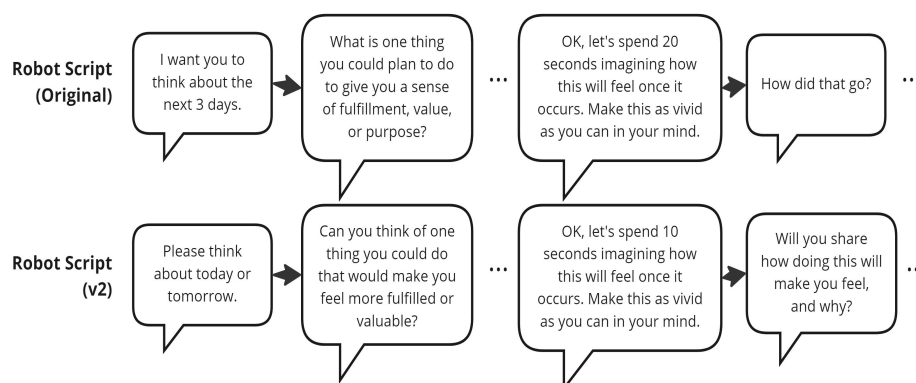


Figure 2: Iteration of Conversational Interaction

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