

Dialogue-based Engagement During 78-rpm Gramophone Sessions in a 90-year-old Woman With Dementia

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INTRODUCTIONMETHODRESULTS 1CONCLUSIONSREFERENCES

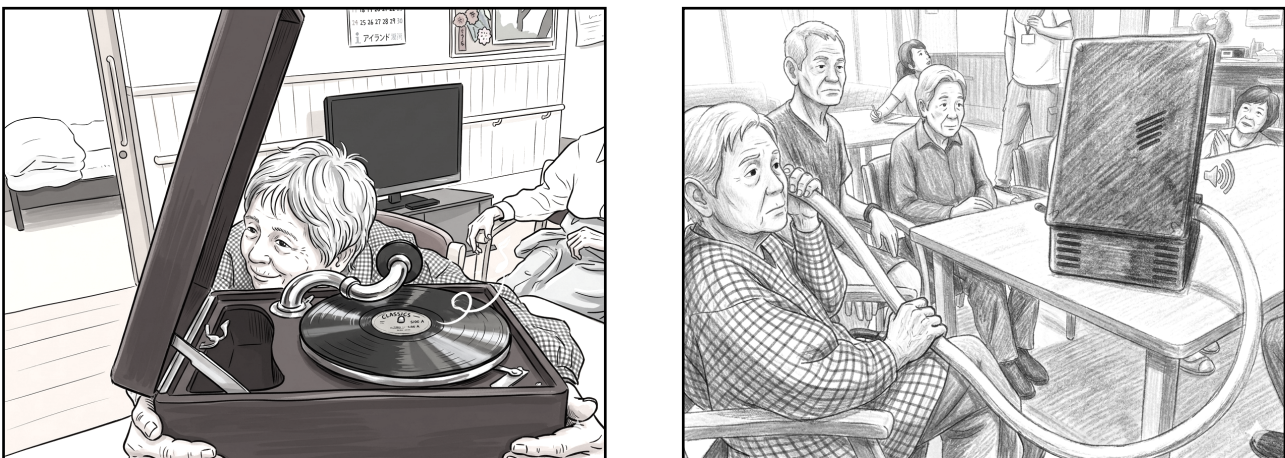
While standard dementia frameworks emphasise the vital link between music, selfhood and preserved agency (Kitwood, 1997; Baird & Thompson, 2018), contemporary music interventions rely almost exclusively on digital audio delivery. Unfortunately, modern digital tools such as headphones, smartphones and touchscreens, might impose severe cognitive barriers, causing user frustration and deep social isolation.

To resolve this limitation, this study shifts the paradigm away from screen-based media by introducing an analog, acoustic gramophone interface. By replacing non-tactile digital signals with an open-room acoustic presence and visible handling rituals, this project directly bridges the gap between the emotional power of music and active, physical choices.

This acoustic approach invites us to rethink the profound historical purpose of recorded sound. When Sir James Alfred Ewing, a Scottish physicist and engineer, first brought Edison's phonograph to Japan in 1878, the scholar Fukuchi Genichiro translated the device as the "voice-resurrecting machine" (蘇音器). Ten years later, Emile Berliner (1888) echoed this exact sentiment, noting that listening to records felt like "holding communion with immortality." By reintroducing these analog rituals into modern dementia care, I have intended to transform passive listening into an active, embodied experience that honours and awakens someone's inner self.

Operating the HMV 102 gramophone provides a visible, multi-sensory ritual that acts as a meaningful bridge for memory retrieval. For example, Masuda (2016) reported that when 2,436 words from 10 sessions were compiled into 100 short stories from a 92-year-old man with dementia and presented to 5 primary carers, only an average of 20.4% were recognised. This low acknowledgement rate proves that while music can help us dig up a vast amount of an individual's identity, it unfortunately remains entirely hidden during routine daily care.

This research was inspired by a bed-bound, distressed resident who frequently lashed out due to severe hearing loss. Seeking to bridge this silence, I designed a listening device by connecting a vacuum tube directly to an HMV 102 gramophone. Within two weeks, a profound awakening occurred: the screaming ceased, and she sat up to actively embrace the melody of 'Kōjō no Tsuki' (荒城の月). Watching her cradle the gramophone like a beloved instrument made it clear that the organic resonance of the 78-rpm acoustic sound did not just vibrate her eardrums, it reached her soul. This profound moment of her gentle peace provides the emotional and clinical foundation for this entire investigation into gramophone-based dementia care.



This exploratory qualitative case study examined five weekly analog gramophone sessions with a 90-year-old female resident (MMSE 10) in an aged-care facility. The intervention design is clinically grounded in Butler's (1963) "life review" framework, which positions Reminiscence Therapy (RT) as a vital cognitive tool. To optimise RT outcomes for the participant, sessions relied strictly on 78-rpm records rather than digital streams.

HMV 102 portable gramophone was utilised as a powerful multi-sensory and tactile cue. The physical ritual of cleaning the disc, winding the motor, changing needles, and placing the soundbox onto the spinning shellac consistently triggered deep-seated memories, stimulating immediate biographical recall and rich social engagement.

Each of the five sessions followed a structured three-step pattern. First, an initial introductory dialogue. Second, the playback of three selected 78 rpm records (see the 78 rpm playlist). And finally interactive dialogue intervals following each record.

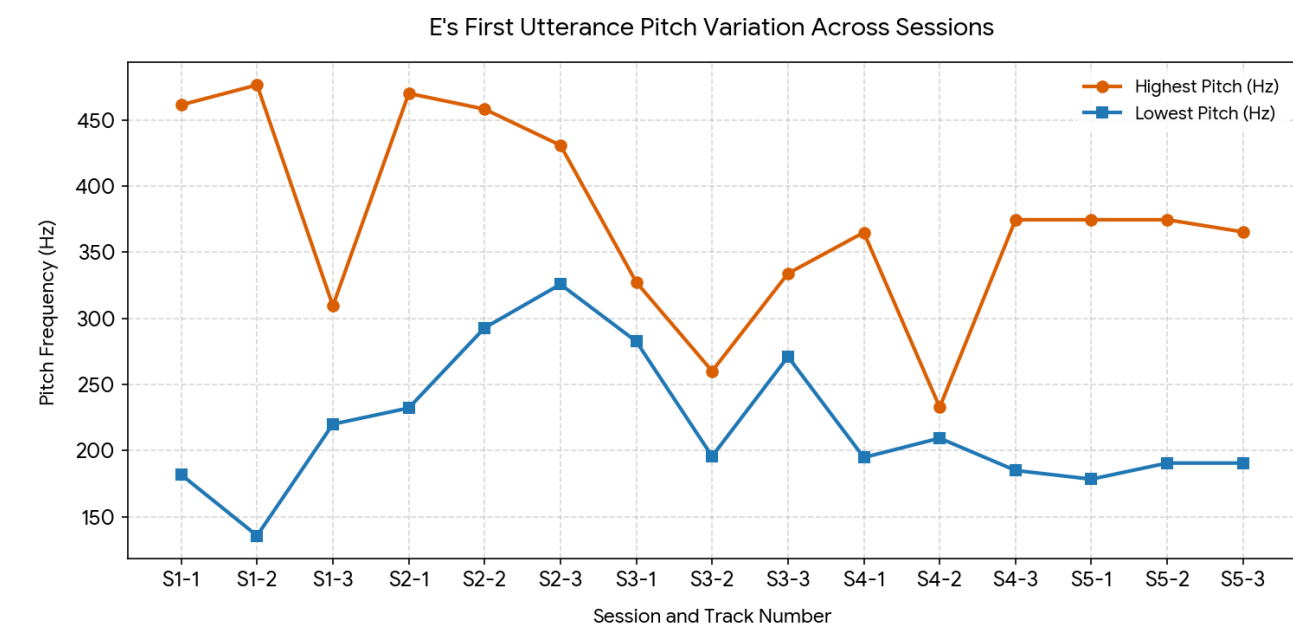
Data Recording and Transcription

All sessions were audio-recorded using a Sony PCM-D10 and videotaped using a Canon EOS M10. Recording was done 1.5m away and the camera was placed diagonally 2.5m away from E. This is purely to avoid any psychological negative effect on E. The recordings were transcribed to analyse individual conversational turns.

Data Analysis

- The data was evaluated using two primary methods:
- Lexical Analysis:** Transcripts were coded to examine patterns of affirmation, positive affect, negation/repair, and the frequency of memory-linked terms.
 - Acoustic Analysis:** The very first utterance immediately following each record was examined. E's state of mind was observed by measuring fundamental pitch variations (Hz).

RESULT 4



According to **RESULT 4**, Tracking E's very first words after listening to record reveals a clear calming effect over time. Early tracks showed erratic vocal jumps spiking up to 476.4 Hz, signalling conversational tension. By Session 5, these strained highs dropped significantly, locking into a relaxed zone between 365 Hz and 374 Hz, while her lowest pitch stabilised at a steady 190.6 Hz. While the extreme low of 135.7 Hz in Session 1 may be an outlier, this steady narrowing of her vocal range shows the music helped E relax. According to the Therapeutic Music Capacities Model (Brancatisano, Baird, & Thompson, 2020), the familiar Christmas theme seemed to have served as a powerful cognitive shortcut.

Across the five encounters, the Elder (E) did not simply receive music as a passive listener, nor did the Practitioner (P) act as a traditional instructor. Instead, P naturally minimised his own verbal presence across sessions, transitioning from an active guide to a facilitator. This intentional reduction helped create a supportive social space that empowered E to actively manage the interaction by sharing her thoughts, refusing, remembering the past, and using humour. Her active responses show that she still possessed personal choices and a sharp mind.

During Session 1, the interaction was dominated by P, who provided intensive verbal assistance exceeding 450 words. E demonstrated initial curiosity with over 65 verbal expressions, explicitly linking the music to her own history by stating, *"I know about those old gramophones. I'm sure I had one when I was young."* and *"I know about Bing Crosby."* In Session 2 during Rosemary Clooney's song, her decaying acoustic voice and a long 12.37 second vocal fade completely absorbed E. 6-second speech latency followed, which served as a necessary quiet time for E.

A similar reaction happened during Mario Lanza's *"Ave Maria."* The powerful operatic finish left a strong impression in E's mind. The 5.02 second end spin allowed her to process the deep emotional and spiritual weight of the voice, requiring a further 3.31 second speech latency to actively gather her thoughts before speaking. In contrast, Doris Day's cheerful track gave E an instant burst of energy. Because the song was so familiar, it triggered a rapid 0.8 second reaction where she released pure joy by clapping 10 times and letting out a playful *"Ohhh"* tone. Later on, P and E shared a warm moment before listening to *"You Are My Sunshine"* when P joked, *"Am I your sunshine,"* and E laughed and replied, *"Yes."* E also showed how deeply involved she felt when *"Love Is a Many-Splendored Thing"* by Nat King Cole finished, immediately reacting with, *"Hmm, yes, it's nice."*

Session 5 showed a complete turnaround, giving E the confidence to lead the conversation and make her own choices. P's input dropped to a minimal baseline of 60 words, while E's language surged to approximately 300 words, quadrupling P's output. E's autonomy is vividly captured in the dialogue; when she firmly stated, *"I don't want to touch anybody's other things,"* and P asked about making a Christmas cake, E playfully replied, *"I might make you one"* (*laughing*). Furthermore, when P asked if she could tell the difference between Bing Crosby and Frank Sinatra, E confidently asserted her identity by saying, *"Oh, yes, I can. Of course. I am old enough."* She freely shared her opinions when asked about sharing a dream, commenting, *"I think everybody shares, don't you? I think we should do it."* E also used quick-witted humour during a misunderstanding about holiday gifts, stating, *"Oh, I thought that we ought to share a Christmas kiss, not the gift. I just misunderstood you. I won't give anyone a Christmas kiss,"* standing her ground even when P subtly teased, *"I thought you are giving me one."*

According to the chart in **RESULT 3**, as the sessions progressed, E's eye contact on the records showed a steady, clear decrease. Rather than showing a loss of focus, this drop directly matches her rising independence as P stepped back and gave her more conversational space. Instead of using the spinning 78rpm record as a quiet shield, E felt safe enough by Session 5 to look away from the gramophone and actively echoed the room with laughter, stories, and humour. Considering that P had only seen her for these five sessions, the gramophone clearly acted as a powerful turning point and letting E shift from a quiet listener into the witty leader of her own conversation.

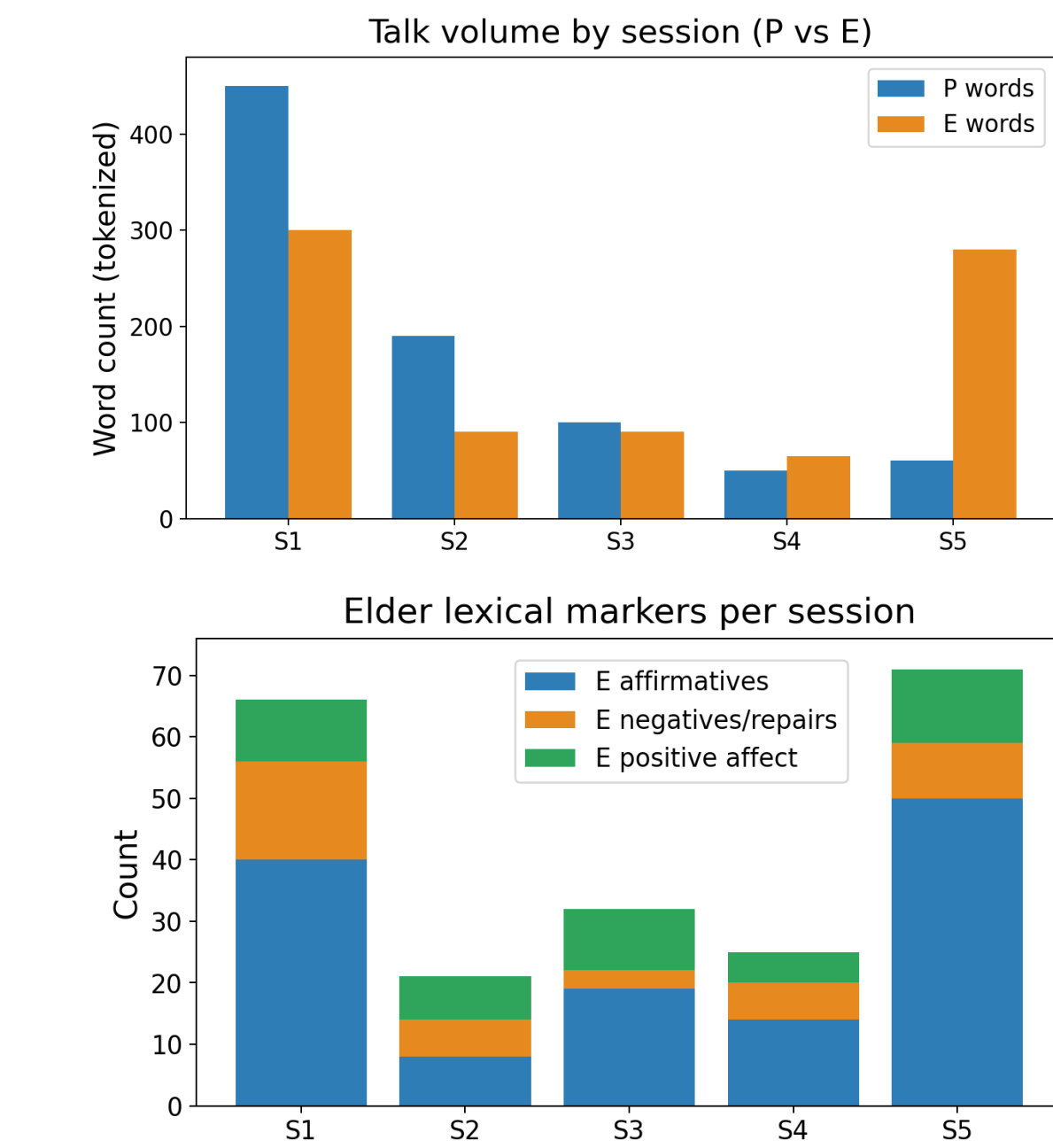
This single-case study demonstrates that individuals with advanced dementia are not merely passive recipients of music care; rather, the gramophone functioned as a powerful sensory anchor for active connection and expressed autonomy.

Each 78 rpm record plays music only for just two to three minutes. This helped E maintain high concentration, keeping her eyes on the spinning record (see the end of the song list for data and a chart in **RESULT 3**). At the same time, the gramophone, combined with the pure acoustic sounds and surface noise from the built-in horn, acted as a powerful visual and auditory anchor. Its continuous motion seemed to help quiet the mind and reduce environmental anxiety.

A major finding occurred immediately after each record finished, when E consistently remarked, *"That was very nice."* When cross-referenced with a primary carer, it was revealed that E seldom used this phrase during standard daily care. Grounded in Kitwood's framework of person-centred dementia care, this discovery suggests that the music session helped shift E from a passive recipient of care toward an active person of aesthetic pleasure. After tracks like *"You Are My Sunshine," "Jesu, Joy of Man's Desiring,"* and *"Jingle Bells,"* she even clapped her hands. While routine care interactions can tend to reduce her to a less responsive state, the gramophone appears to have created a comforting psychological space where she felt safe and stimulated to express her genuine feelings.

In short, the gramophone does not merely play music; it is likely to act as a psychological anchor that can support individuals in moving from passive recipients of care into a whole person. Supported by Kitwood's framework of person-centred care, the physical interaction design proves how targeted musical experiences can gently bring hidden personal resources back to the surface. Ultimately, as highlighted by Baird and Thompson (2018), music serves as a profound catalyst for the self in dementia, awakening an enduring sense of identity, communication, and personal voice.

RESULT 2



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78rpm Playlist

eye contact on record in second/total playing time

First session

"The Lord's prayer" by John Charles Thomas, 1934. (165/175)

"Counting your Blessings" by Bing Crosby, 1954. (168/191)

"When the saints go marching' in" by Louis Armstrong, 1938. (146/164)

Second Session

"Counting your blessing" by Rosemary Clooney, 1954. (144/160)

"The Lord's prayer" by Mario Lanza, 1951. (179/193)

"When the saints' go marchin' in" by Graeme Bell & His Australian Jazz Band, 1947. (112/140)

Third Session

"Love is a many splendored thing" by Nat King Cole, 1955. (129/154)

"You are my sunshine" by Doris Day, 1952. (115/128)

"Jesu, the joy of Man's desiring" by choir of of the temple church, 1934. (123/138)

Fourth Session.

"You are wonderful" by Bing Crosby, 1949. (77/163)

"I'm getting sentimental over you" by Tommy Dorsey, 1936. (134/149)

"The Lord's prayer" by John Charles Thomas, 1934. (127/172)

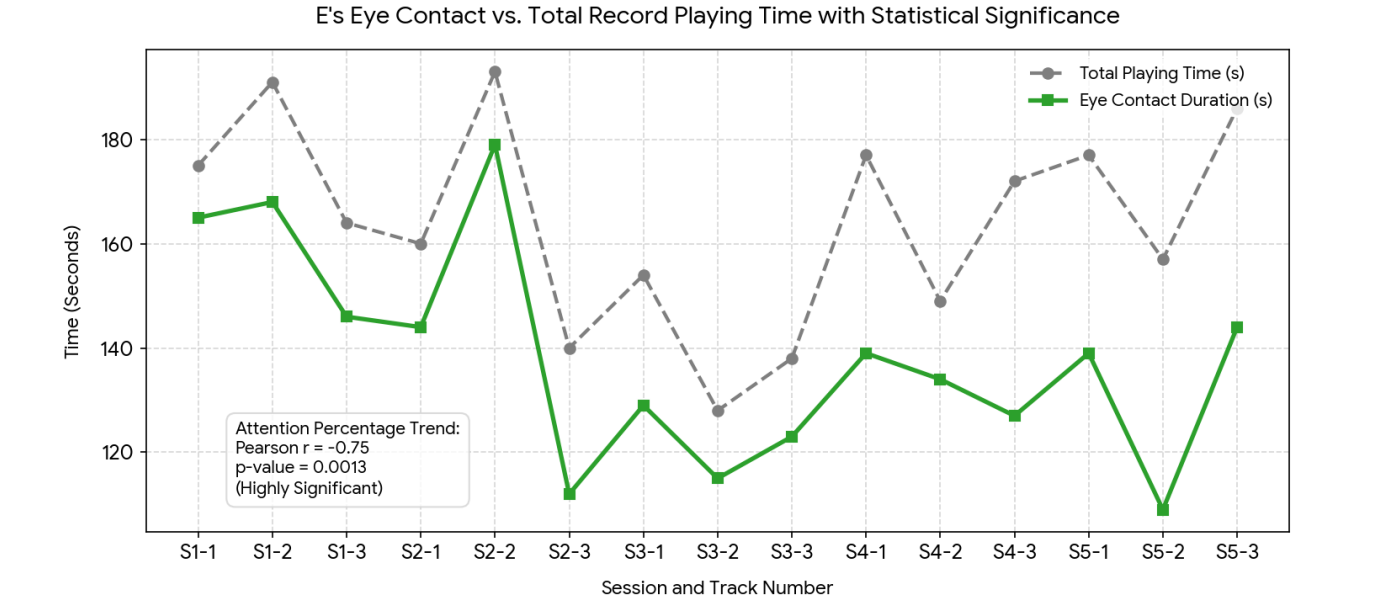
Fifth session

"White Christmas" by Bing Crosby, 1942. (139/177)

"Jingle Bells" by Frank Sinatra, 1946. (109/157)

"Poppa Santa Clause" by Bing Crosby, 1950. (144/186)

RESULT 3



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Watch: Live Double Bass & Gramophone Session (Channel 9 Feature)

Video Reference: Gramophone Music Therapy Demonstrations

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