

MemoriGems: A Voice-First Digital Model for Emotional Connection in Early Dementia

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Background & Objectives

People living with early dementia experience progressive disruptions in emotional connection, yet most digital tools prioritize cognitive performance over relational continuity.

These observations informed the development of the **VOCES Framework (Voz Orientada a la Continudad, Emocion y Sosten)**, a conceptual model that positions relational voice as a cognitive anchor for identity continuity. MemoriGems represents one applied implementation of this framework.

- Describe a voice-first framework for emotional connection in dementia
- Identify gaps in relational engagement tools for early-stage dementia
- Explain accessible, evidence-informed design principles for dementia care technology

Evidence Based

What the research shows about preserved emotional and auditory processing in dementia:

Emotional experiences are prioritized in memory consolidation
McGaugh, 2004; Saito et al., 2025

Familiar voices are processed more robustly than unfamiliar voices
Kanber et al., 2025

Auditory cues trigger memory pathways that remain accessible
Janata, 2009; Cuddy et al., 2017

Voice recognition is often disrupted in dementia, underscoring the need for voice-based supports
Hailstone et al., 2011

Neuroscience-Informed Design

From evidence to design decisions:

Emotional memory is prioritized → **voice anchors emotional recall**
Familiar voices are recognizable → **family voices strengthen identity**
Auditory cues trigger memory → **sound-based pathways stay accessible**
Emotion enhances retention → **memories held through emotional association**

Note: Design is informed by — not validated by — the cited research. MemoriGems has not yet been studied in clinical trials.

Conceptual Foundation

VOCES Framework



Voz- Relational voice

Familiar relational voice serves as the primary emotional cue.



Continued- Identity Continuity

Reinforces identity, relationships, roles, and personal narrative.



Emocion- Emotional Pathways

Engages emotionally preserved memory pathways to support recognition and connection.

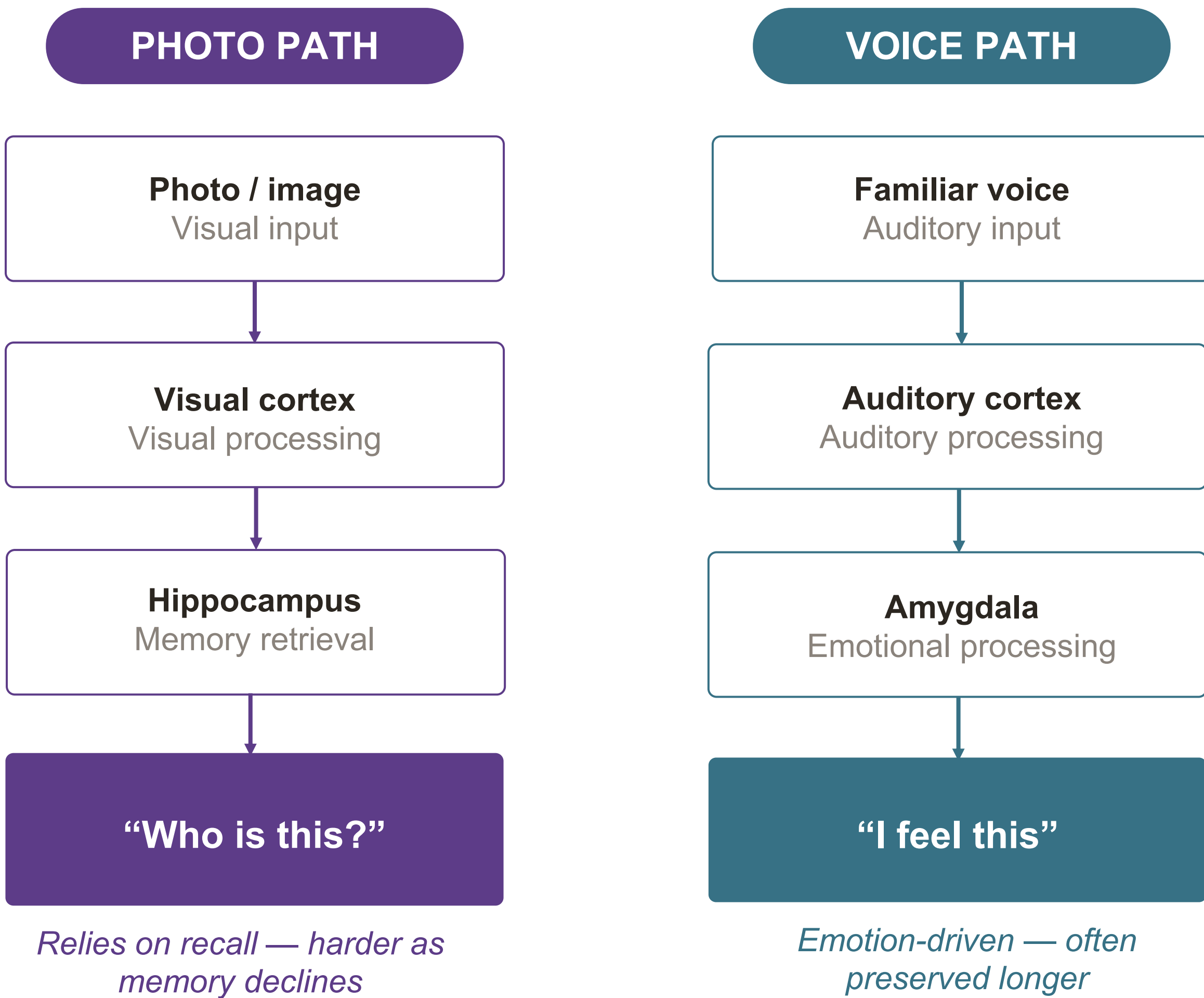


Sosten- Support Through Ritual

Creates repeatable, meaningful rituals that sustain connection over time.

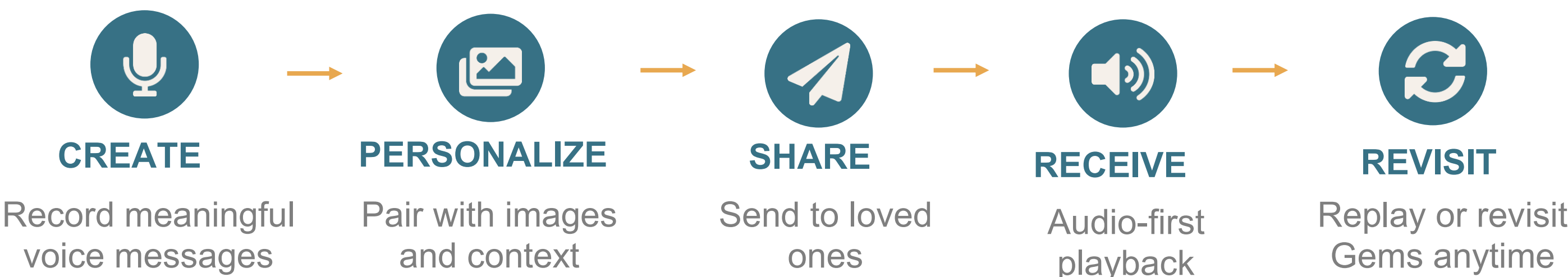
MemoriGems translates these four principles into a practical, family-centered digital experience.

How the Brain Processes Connection



Photos ask the brain to remember. **Voice helps the brain feel — even when memory fades.**

The MemoriGems Model (Guided by VOCES)



VOCES Principles	Voz	Continued	Emocion	Sosten
MemoriGems Experience	Familiar voices are captured and shared.	Identity reinforced through stories, relationship, and roles.	Emotional recognition prioritized over memory performance.	Gems become repeatable rituals that sustain connection over time.

Results & Conclusion

Results: Preliminary observations from current research and narrative feedback suggests increased emotional engagement, improved responsiveness, and reduced frustration during communication.

Conclusion: MemoriGems presents a novel, holistic framework that integrates relationship-centered and person-centered support to strengthen emotional connection throughout the dementia journey. Rather than focusing primarily on memory recall, the platform prioritizes emotional recognition through an accessible, voice-first design. By leveraging preserved auditory and emotional processing pathways, MemoriGems helps sustain identity, reinforce meaningful relationships, and complement the care provided by clinicians, caregivers, family members, and community partners.

MemoriGems Model vs Typical Care Apps

Capability	Typical apps	MemoriGems (Guided by VOCES)
Supports basic communication	✓	✓
Shares memories via media	✓	✓
Works without requiring recall	✗	✓
Designed for low cognitive load	✗	✓
Centers emotional connection	✗	✓
Familiar voice as primary cue	✗	✓
Recognition over recall	✗	✓
Caregiver communication guidance	✗	✓
Adapts with disease progression	✗	✓
Reinforces identity	✗	✓

Clinical & Care Impact

- Supports connection without relying on memory recall
- Reinforces identity through familiar voices
- Reduces caregiver burden in everyday communication
- Aligns with preserved emotional processing pathways

Who it's for



Individuals in early-stage dementia maintaining connection and identity; caregivers and family supporting shared moments.

What it's not



Not a caregiver replacement, a clinical decision-making tool, or a diagnostic instrument.

Collaborations & Next Steps

- Seeking pilot partners in care settings
- Collaborating with clinicians, researchers, care organizations
- Measuring emotional engagement & connection outcomes
- Expanding to broader cognitive conditions



Learn more

References

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