# VIRTUAL PUPPETRY ASSISTING THE ELDER'S LIFE REVIEW

Semi Ryu, Department of Kinetic Imaging, Virginia Commonwealth University, Richmond, VA, 23284, U.S.A.
E-mail: sryu2@vcu.edu
David Burton, Department of Art Education, Virginia Commonwealth University, Richmond, VA, 23284, U.S.A.
E-mail: dburton@vcu.edu

**Abstract**

This paper will describe "VoicingElder", an expressive storytelling platform for the senior population, using virtual puppets. VoicingElder combines reminiscent oral storytelling with virtual puppetry to develop a deeper understanding of self-worth. This form of storytelling through puppets is inspired by traditional Korean shamanistic ritual and the philosophy of han. VoicingElder aims to fuse Korean shamanistic ritual and twenty-first century virtual interactive technology to examine the current state of elder hood in Western culture, and to contribute in positive ways to the new elder hood that we face today.

**Keywords:** aging, mixed reality, virtual puppetry, reminiscence, life review, therapy, multimedia performance, interactive media.

In the United States and elsewhere, we are being challenged to develop a whole new phase of life called "elder hood." Today, millions of people can expect to live 25 or more years in relatively good health after retirement. This change in life expectancy inevitably coincides with great cultural change, and it is critical for our society to think about how to shape elder hood in ways beneficial to both the individual and community [1].

The stories told by seniors are rich material, full of memory, feelings, life lessons and wisdom. Many elders are skilled storytellers, recounting cultural knowledge gained from a lifetime of experiences. The written text of their stories would lack the kind of emotional connection and interpersonal interaction that oral storytelling can generate [2].

VoicingElder supports oral storytelling by using voice-activated virtual puppets that lip-sync with the user's spoken words in real-time, drawing the user into a transformative state of telling their own stories. The virtual puppets take the form of digital avatars that can be manipulated as projected images on a screen to help seniors recall their distant memories, feelings, and hidden emotions in their storytelling. VoicingElder follows the spirit of the Korean shamanistic ritual that sometimes use puppets as virtual mediators in the same way that VoicingElder creates digital virtual mediators. By using virtual puppets, VoicingElder enables seniors to give new voice to their own stories, exploring a rich state of mixed reality in their consciousness. It seeks to restore oral storytelling traditions in the digital age, adding the seniors' lifetimes of wisdom to a contemporary society. VoicingElder employs a methodology previously developed in other virtual puppetry projects, expanding the scope of the project to therapeutic interventions and community engagement. The project shifts the focus of virtual puppetry. Instead of a performance undertaken by professional storytellers, VoicingElder is a resource that is available to diverse audiences as a form of entertainment, self-expression and healing. In future versions, the system may become available as an open source product.

The conceptual background of the project draws from many fields, including the psychology of aging and Korean culture. The project explores the transformation of emotional states and identity in the context of ritual. Adaptations of Korean shamanistic rituals prompt certain emotional and reflective states in the user, as happens to the shaman's consciousness in a traditional ritual setting. The integration of ritual elements with virtual interactive technology creates a participatory, multimedia form of reminiscent storytelling, intended to promote therapeutic effects. Through its exploration of seniors' psychology through new interdisciplinary applications, Voicing Elder has the potential to connect with fields such as psychology, gerontology, education, and social work.

## Virtual Interactive Puppet

In the previous version of our Virtual Interactive Puppet, the user controlled the puppet through their voice and by shifting their weight balance. When the puppeteer spoke into the microphone, their voice changed the mouth, body and facial expression of the 3D virtual puppet in real time. The live sound data was applied to the puppet's mouth, body and texture with different types of sensitivity and controls. These expressions continuously helped the puppeteer to improvise in his or her oral storytelling.

As the puppeteer controlled the virtual puppet in real time, the puppet seemed to come alive. The illusion of language adds significantly to the life-like aspects of the puppet. The sign system of speech is vitally important to allow people to imagine that the puppet possesses life [3].

During the performance, the puppeteer carefully watched the puppet's interactive response on screen. The performer "faces" the puppet, as the puppet's response gradually motivated the performer's storytelling inspiration. The audience should be located between the performer and the puppet, thus placed physically, and

Fig. 1. Example of Virtual Puppet Installation. (© Semi Ryu. Photo ©Rosemary Jesionowski.)

spiritually, between this spiraling inner dialogue of the puppet and the puppeteer.

In VoicingElder, the current iteration of this project, we add a new kind of facial recognition to the puppet. Facial recognition allows the puppeteer (the senior) to be immersed more fully into an emotional connection with the puppet. The virtual puppet may look like the puppeteer's younger self, a member of his or her family or an imaginative character. The puppet's face can take on any appearance the senior wishes, thereby allowing the user to play different roles. This stimulates his or her memory in the life review process of reminiscence therapy.

In future versions, the software could generate a generic idea of the dialogue topic through a combination of speech recognition and simple text classification. This opens the possibilities for appropriate graphic and acoustic feedback for perceptual developments in the human psyche.

While exploring variation in virtual interactive space and computer techniques supporting oral storytelling, VoicingElder actively incorporates objects or props from actual space (such as photos, candle light, or a chair) that create mixed reality performances to assist the elder's oral storytelling process.

VoicingElder is currently being implemented at A Grace Place Adult Care Center in Richmond, Virginia. We plan to start working there in Fall 2013, with the seniors acting as storytellers. The seniors may also be given opportunities to perform in various public locations beyond the senior center, such as public libraries, elementary schools, auditoriums, and theatre and gallery spaces.

## The Aging Psyche and Mode of han

In Korean culture, han is the most important characteristic of the mind and emotions [4]. Han is a paradoxical state of consciousness that combines an extreme state of grief caused by physical or mental constraints with a great hope and strong desire for overcoming the situation [5]. Korean shamanistic ritual begins by recognizing inevitable constraints. In the moment of recognizing this irremediable distance, we confirm our own tragedy in the mode of han, with extreme grief but with a strong will to overcome. Han thus drives the process of ritualistic transformation. Han initiates the process of ritual where polar opposites begin to interact and interpenetrate, eventually transforming into each other.

VoicingElder considers the experience of seniors as being at least akin to han, and seeks to mediate the distance between the true self and the socially constructed image, between the lived body and the biological body, between the ageless body and the aging body, and so forth [6] [7]. VoicingElder facilitates transformation of seniors by using a contemporary ritual object: the virtual puppet. In the case of traditional rituals and of VoicingElder, the process does not lead to a resolution of the issues being explored. Rather, it returns seniors back to the starting point: the reality in which it seems nothing has been changed at the material level. However, a crucial change has occurred in human awareness. In VoicingElder, the hope is that seniors and their audience (their family and others) will be left with a greater awareness of the value of lived experience.

Han informs the human dilemma of living in a society of controls, confronting the separation and distance of everyday life [8]. We can find han in the consciousness of elders when they begin to feel a discrepancy between their perceived identity and social identity suggested by society [9]. Seniors live in mixed reality between phenomenological and social layers of their body and identity. The unavoidable limitation the elder experiences as he or she perceives daily life activates important realizations and potentialities. The emotions that arise in such a limbo state might be confusing and paradoxical: a chaotic mixture with rich tensions. The mixed emotions found in old age are similar to the emotional character of han. The mixed emotions of seniors may actually bring them more stability and a stronger sense of well-being if they have the opportunity to express and ritualize their experiences through their storytelling. VoicingElder can provide the platform for this transformative process. When human beings are aware of their limitations, time constraints and bodily constraints, the emotional experience is rich and complex, like joy and gratitude mixed with sorrow [10]. An acceptance of complex emotions has the potential to generate a desire for self-actualization, as shown in the Korean notion of han.

If a senior has the ability, and the resilience, to tolerate the tensions of his or her chaotic and unanswered states, then VoicingElder can offer the chance to use those tensions for creativity. VoicingElder facilitates the exploration of the layers of mixed reality between a virtual puppet as virtual body and the puppeteer as actual body. The puppeteer faces the virtual puppet, and the puppet mimics precisely the puppeteer's voice and facial expression. The virtual puppet constantly speaks and sings back to the puppeteer through real-time echoes and mirror reflection. The puppet's response gradually motivates the puppeteer's storytelling inspiration. The puppeteer is dynamically transformed into the puppet, creating a complex reality state of neither virtual puppet nor puppeteer.

Korean experiential reality emerges from understanding han. It is about lightening the weight of actuality in order to open the infinite space of full potentiality. Although the popular assumption in the West is that old age means disempowerment and marginalization, Bianchi suggests that the opposite is true, that seniors can live in a more authentic experiential way than when they were younger, because their expectations have changed [11]. Older people's understanding of their lives, their bodies, and of time, is different from that of younger people, in ways that may make them more open to a sense of wellbeing [12]. This renewed understanding of one's own life and experiences echoes aspects of Korean experiential reality and Korean shamanistic ritual. In the Korean shamanistic ritual, han is required and even celebrated. If one continuously "fills" oneself, one becomes overloaded—too heavy to fly. Taoist Lao-Tze tells us to empty ourselves until we are light like a feather, and then "being itself" will find its place in the void. Emptiness will take us up to the sky, to the infinite space of meta-reality where we may find being itself— in potentiality [13]. In this space, emptiness will shift into fullness. The void will be filled. This is the paradoxical state of Heo-Lyeong-Chang-Chang—completely empty and completely full [14]. It is the Korean experiential reality in continuous conflict between the actual and the virtual; the chaotic state of neither here nor there—a quantum state of paradox. This state is what the author calls an "active void," an ontological journey of taking flight— continuously dreaming, desiring, and eventually transcending the sky.

## Reminiscence and Oral Storytelling

For seniors, telling a story has many dimensions: It heals their mind through remembering, expressing, re-contextualizing and being listened to by another person. Storytelling is an important channel for their communication with the community. Reminiscence therapy is one form of treatment that is known to reduce dementia and Alzheimer's disease through the life review process. Reminiscence helps the patients to remember and play with their memory, giving them a sense of relatedness and connection [15].

Furthermore, storytelling and reminiscence are enormously important processes in old age because they nurture intergenerational sharing and communication, and allow seniors to express and strengthen their identities as they review their lives through their memories [16]. When seniors tell stories and share

reminiscences, they share themselves. Past events and experiences are brought into the present day, not with historical or factual accuracy, but in a warm, lively, engaging way. Younger people can gain from the wisdom of older people, learn about the past, and even begin to imagine themselves in old age. The process has emotional benefit for older and younger people.

VoicingElder offers diverse ways for an elder to search for their memory. The primary way is the virtual interactive puppet speaking the user's speech. Other ways would vary by situation: text, visuals or sound feedback provided randomly or activated by some spoken words, content or emotional tone of the live speech. In some cases, the virtual puppet might be customized and programmed with information from the puppeteer prior to the performance, involving the collecting of user's items: photos, music, letters, and so forth. Those materials could be digitized and appear as a part of the virtual space, triggering the user's memory during the live performance. For example, faces in photos could be tracked and captured by computer and placed on top of the virtual puppet as texture. Text from a letter could be digitized and appear on screen during the performance. Music could be played and generated, evoking certain events and places. Pictures of objects might be displayed in virtual space, triggering different aspects of memory. The use of objects is known to be especially useful to prompt memory when working with people who have dementia [17].

In primitive oral cultures, the elder's oral storytelling functioned as an intergenerational education process, delivering experiential knowledge, values and passion from generation to generation [18]. In a similar vein, VoicingElder uses virtual interactive technology to nurture intergenerational relationships, benefiting seniors and younger people and the society as a whole.

## References and Notes

1. E. Bianchi, "Living with Elder Wisdom," Journal of Gerontological Social Work (The Haworth press, 2005), p.45.

2. J. Archibald, Indigenous Storywork: Educating the Heart, Mind, Body, and Spirit (UBC press, 2008) p.93.

3. S. Tillis, Toward an Aesthetics of The Puppet: Puppetry as A Theatrical Art (Greenwood press, 1992) p. 24.

4. S. Choi, "Korean Psychology of Shim-Jung: Phenomenological understanding of Jung and Han," Dae-Wei Symposium (Seoul: Korean Psychological Association, 1993) pp. 7-8.

5. Semi Ryu, "Searching for Love Impossible" Technoetic Arts, Vol. 8, No.2 (Bristol, UK: Intellect, 2010) p.235.

6. Eileen Fairhurst, "Growing Old Gracefully" as opposed to "Mutton Dressed as Lamb": The Social Construction of Recognizing Older Women. In the body in everyday life, S. Nettleton and J. Watson, eds. (London: Routledge, 1998) pp. 258-275.

7. C. Faircloth, Aging Bodies: Images & Everyday Experience (Oxford: Altamira press, 2003) p.81.

8. Semi Ryu, "Searching for Love Impossible," Technoetic Arts, Vol. 8, No.2 (Bristol, UK: Intellect, 2010) p.233.

9. C. Faircloth, Aging Bodies: Images & Everyday Experience (Oxford: Altamira press, 2003) p.81.

10. J.E. Roberts, & I.H. Gotlib, "Temporal Variability in Global Self-Esteem and Specific Self- Evaluation as Prospective Predictors of Emotional Distress: Specificity in Predictors and Outcome," Journal of Abnormal Psychology (1997) p.106, pp.521-529.

11. E. Bianchi, "Living with Elder Wisdom," Journal of Gerontological Social Work (The Haworth press, 2005), p.322.

12. M. Ross, "Relation of Implicit Theories to The Construction of Personal Histories," Psychological Review (1989) p.96, pp.341-357.

13. Yong-Oak Kim, Noja and 21st Century vol.1 (Seoul: Tongnamu, 1999) p.192.

14. Sang-Il Kim, Donghak and process philosophy (Seoul: Jisik press, 2001) p.279.

15. R. Coaten. "Exploring Reminiscence through Dance and Movement," Journal of Dementia Care (The Benevolent Society, Sept/Oct 2001)

16. Reminiscing Manual version 1(The Benevolent Society, 2005), ABN 95 084 045: 3.

17. Reminiscence Therapy Kits: manual for divesional therapists and activity coordinates(St. George Regional Museum ,2004).

18. J. Archibald, Indigenous Storywork: Educating the Heart, Mind, Body, and Spirit (UBC press, 2008) p.93.