

Touchology: Exploration of Empathetic Touch Interaction with Plants for Well-being

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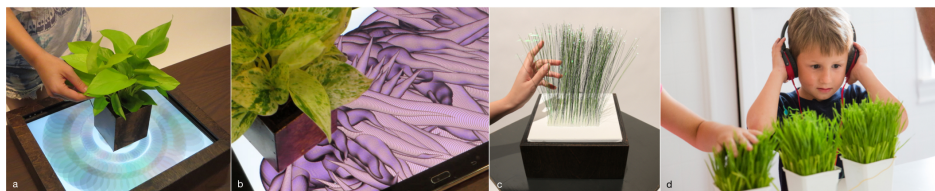


Figure 1. Touchology Projects: *Flora Touch* (a and b), *Grass* (c and d)

Abstract

This paper presents *Touchology*, a series of interactive plants that explore serenity and emotional attachment through meditative touch of plants with interactive audio-visualizations. Gardening is seen to improve mindfulness, memory and cognitive abilities. Those who are unable to benefit from this activity, such as the mentally and physically disabled, are less prone to be exposed to this leisure. Our approach focuses on creating various audio-visualizations for tactile interactions with living plants to enhance relationships because the plants and users while evoking their empathy. Due to simple technical setups, the projects presented here can be placed anywhere at the ease of the user. Pilot studies with target populations indicate that calming tangible interaction with plants can evoke mindfulness in a similar way to gardening related experiences.

Touchology

Touchology investigates how touch-sensitive interactive plants can evoke an emotional attachment with the user and how the relationship affects their quality of life. Since *Touchology* used real plants as well as a designed plant, we carefully chose plants based on scientific evidences and aesthetic qualities. We aim for the level of touch to be not only beneficial to humans as it generates soothing feelings but also to plants as it generates the plant's defense system to be more alert to foreign pathogens. Researchers found that gently rubbing leaves or caress plants between the thumb and forefinger can trigger plant defense system and can gradually become more resistant to various pathogens. [1]. *Flora Touch*

and *Grass* utilize different sensing techniques and produce different aesthetic qualities of visual and sound components. Since *Touchology* projects keep all the necessary components in a small container, this can be maintained and placed anywhere at the ease of the user and extend his/her experience with nature in a unique way.

To better understand what kinds of interactive effects, through touching a plant, especially appeal to the target population, we conducted preliminary studies young children with autism and older adults living in nursing homes. The studies showed that our interactive plants had potential to create healthy interactions, encouraging children with autism and older adults in an assisted living facility through audio-visualizations with tactile exploration. The desired reaction of calmness and feeling at ease was mostly seen in the elderly. For autistic kids, *Touchology* can be used as an education tool for gardening and allow them to be familiar with plants in a therapeutic way. Repetitive use of the plant will soon overcome any sensitivity over the material.

References

1. E. Wassim Chehab, C.Y., Zachary Henderson, Se Kim, and Janet Braam, *Arabidopsis Touch-Induced Morphogenesis Is Jasmonate Mediated and Protects against Pests*. Current Biology, 2012. 22: p. 6.