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#### Etude 4 - Speculative Design Fictions

- 1) *In Budinger and Heidmann's Harmony scenario, people have looked for ways to exist cooperatively with plants. Within this context, people may have turned to nyctinastic<sup>1</sup> plants and their circadian rhythms to help modulate living spaces and combat growing concerns of disrupted human circadian rhythms brought about by an increasingly screen-based culture.*

With the emergence of toned “white” light produced by LED light bulbs and LCD screens, studies have found the intense bluer light produced by these sources can disrupt human circadian rhythms<sup>2</sup>, forestalling bedtimes and disrupting sleep quality. In response, many devices have begun introducing “Night Shift” functionality, colour grading the output of screens towards a redder hue at a scheduled evening time to make it less disruptive to circadian rhythms. However, this has not yet been broadly applied to ambient home lighting, nor is it truly responsive to outside conditions.

In this light, near-future technology might make use of sensors attached to nyctinastic window box plants that detect that state of the plants' phytochrome being responsive to either red light or far-red light, feeding this information to a central control for home lighting. This allows home lighting to subtly shift its colour grading in response to real-time information about the outside world while also using a measure of light that isn't simply influenced by light intensity but also its relative wavelength.

This shift in home lighting might also prompt users to feel closer to their houseplants, as their circadian rhythms come to be influenced by their plants circadian rhythms. Waking and sleeping together, both human and non-human living inhabitants of the home begin sharing greater portions of their daily routines together.

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<sup>1</sup> Plants that are responsive to a day-night cycle.

<sup>2</sup> <https://www.health.harvard.edu/staying-healthy/blue-light-has-a-dark-side>



Fig. 1: In the morning, the window box plants sense the sun and send a signal to the home lighting. In response, the lighting shifts to a cool blue, helping the home's inhabitants wake up and feel invigorated for the day.



Fig. 2: In the evening, the plants detect the sun's setting, and send a signal to the home lights, which respond by red-shifting to warmer tones, helping the inhabitants prepare for bed as they eat their evening meal.

- 2) *In Budinger and Heidmann's On Demand scenario, a runaway market has made plants accessible and customizable at the push of a button. In this future of 3D printing, gene editing, and rapid prototyping technology, scent-customized flowering succulents may have caught on, allowing people to order small house plants with fully customized aromas, tweaked to trigger for specific environmental conditions.*

In this concept, armed with advanced gene-editing technology and a command of bio-aromatic synthesis, companies have begun offering the ability to customize scents and have small flowering succulents genetic programmed to express these scents when exposed to a given range of temperature and humidity. Though not quite desktop technology, facilities similar to custom paint mixing corners have sprung up in hardware stores and specialty shops, allowing easy access to these living and dynamic scent sources.

Though some people make use of these customized aromatic succulents simply as air fresheners, they've found a whole host of other uses, in theme parks, as mourning gifts (programmed to smell like a characteristic cologne the deceased wore), locale souvenirs, and even used in tangible media courses where students experiment with integrating these responsive scent plants into wearables as interactive perfumes. The relatively small form factor and living nature of the plant (meaning it synthesizes its own organic scent compounds) means it rapidly replaces other common smell outlets such as chemical air fresheners and scented candles.

This rise in availability and popularity of scent engineering has resulted in a greater cultural appreciation of smell. No longer relegated to narrow contexts of body sprays and cooking, everyone is now designing their own dynamic scent palettes, with succulents genetically programmed to release different smells based on weather, the time of day, or even as the seasons change. People come to appreciate their olfactory sense more acutely than they had prior, and smells are no longer simply pleasant or bad, but rather a richer possibility space with its own nuances.



Fig. 3: Though not yet a do-at-home technology, hardware stores possess the facilities to mix custom smells, just like custom paint colours.



Fig. 4: From theme parks, to funerals, novelty air fresheners, and souvenirs, people find new ways to reinvent smell in their everyday contexts.