THE RESTORATIVE IMPACT OF PERCEIVED OPEN SPACE
COGNITIVE BIOPHILIA TO ENHANCE THE PATIENT EXPERIENCE

BEYOND POSITIVE DISTRACTION
Nature imagery has been studied extensively in healthcare environments and is recognized for its ability to elicit a positive distraction in captive populations. However, its therapeutic role has been limited to its representational or symbolic value.

NATURE IMAGERY AS A MULTISENSORY WINDOW
This paper explores multisensory imagery set within a virtual skylight framework. Such installations deliver deeper restorative benefits because they alter the observer's perception of space. Optical illusions set within an architectural setting engage the cerebellum, often involved in spatial cognition. By engaging a part of the brain involved in depth perception, IMRI research shows that multisensory imagery induces an experience of perceived vastness in the observer, even in enclosed interiors.

THE HEALING BENEFITS OF PERCEIVED OPEN SPACE
A neurological understanding of the multicausality of cognitive perception in enclosed interiors reveals a new design framework for healthcare designers. No longer beholden to the various limitations of structural space in deep plan buildings—which include a significant number of urban hospitals—designers can create perceived open space. These illusory skylights open skies after the experience of patients and clinical staff, often captive in isolated treatment rooms, pre-op and post-op areas, and other clinical spaces.

CONTEXTUAL CUES AS REDESIGN TOOLS
This paper cites a number of neurobiology and environmental psychology studies indicating that environmental context plays a role in modulating visual cortex signal strength, which when architecturally staged conjures a visceral experience of vastness. New studies also indicate that our memory stores spatial reference frames—spatial relationships that map out our sense of space—which can be tapped at a neural level to create perceived open space in interiors otherwise isolated from natural surroundings.

HEALING INTERIORS WITH SPATIAL POLARITY
This new design framework introduces two essential spatial relationships: the perceived zenith, and the perceived horizon line, which serve as the restorative barometer of spatial cognition. By connecting isolated spaces with perceived openings to nature, our body schema, which is the neural representation of the body, automatically extends into the physical environment, rather than retreats from it. Since our body schema is malleable and responds to environmental cues, multisensory imagery is able to recreate the hallmark of aesthetic architectural design: spaces that offer spatial polarity or feature front and back, panoramic vistas from a place of comfort and safety.

VIABLE COGNITIVE TECHNOLOGY
Given the predicted urban growth, hospitals are pressured to serve high density populations in larger buildings. And these, by design, include areas of enclosed interiors that hamper human wellness. However, generating perceived open space provides a viable, cognitive technology to redress conventional building design.

Authors: David A. Navarrete, Director, Research Initiatives & Bill Witherspoon, Chief Designer & Founder