

# Chapter 18

## Attention Perception and Social Cognition: Bridging the Gap Between the Physical and Perceived

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### ABSTRACT

*Perception is the basis of being human. It warrants everything we know and everything there is to be known. This chapter explores the perceptual system that leads to the exploration and interpretation of qualities of urban space. The chapter challenges the disciplinary tradition of regarding perception and cognition as being one and establishes that systems of perception and cognition play an equally important role to enable this construct of 'place'. By means of an inter-disciplinary review and knowledge transfer, the chapter reimagines the dimension of perceptual simulation in urban design by constructing a process map to understand the complexity of the workflow from subjective perception to social cognition. The chapter further advocates the need for design to incorporate cognitive affordances to better shape physical reality. The process map and framework is intended as a reference for understanding sensory stimuli in urban design practice to aid efficacy and to reinstate the importance in recreating and bridging the physical and perceived realities.*

### INTRODUCTION

Urban Design has long been concerned with the psychological construct and perception of space. While perception deals with the multiple means by which people sense information from their surrounding environment; cognition, the psychological construct of that information deals with how the information is identified, organised and interpreted. Psychology transacts these two concepts as independent faculties that exert influence on one another. The tradition of Design as a discipline to understand people's perception with regards to their environmental experience has not acknowledged the nature of these individual

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systems and explicitly interrogated how perceptual representations and cognitive representations interact; and have been more inclined to argue against the existence of this bifurcation (Giesecking et al, 2014). Understanding the analogies between sensory perception and cognition from the spatial dynamics point of view is hence under explored. The systems of perception and cognition play an equally important role to enable a construct of 'place'. While the importance and the need for design to incorporate perceptual simulation to better shape physical reality is established with interdisciplinary work in ecological psychology and environmental psychology. It is paramount that some basic assumptions and disciplinary divides that currently exist are inquired systematically and bridged to enable a more holistic approach to the creation of desirable urban futures.

The concept of affordance as explained by Neisser (1994) distinguishes three modes of perception: Direct perception/action, that enables perception and action effectively on the environment; Interpersonal perception/reactivity, that which triggers social interactions with other users, and Representation/recognition, by which we identify and respond appropriately to familiar objects and situations. Spatial perception theories have not engaged with the modes of perception and concept of affordances in design stimuli. Thus a holistic approach to urban design is needed to positively reinforce the potentials of urban perceptual simulation. This requires an understanding of the relationship between people and place from both the modes of perception and cognition. Methodological investigation of the perceptual and cognitive process is needed to establish an informed approach to simulation of places through design. This chapter responds to this identified theoretical gap and aims to bring together the different disciplinary understandings on perception and cognition, its relationship, and map the dynamics of interaction between the two to further stretch its understanding to inform the relationship dynamics between people and place.

The chapter provides an interdisciplinary inquiry into theories of perception and cognition in disciplines of psychology, philosophy, Neuroscience, and, looks into concepts of affordance, perceptible, percept and socio-cultural schemas that form the building blocks of the interaction between the physical and perceived world. The chapter further illustrates the relationship between urban structural components and perception that lead to cognitive comprehension. The understandings that emerge from the review are presented as a process framework that embeds the spatial determinants of perception. The proposed framework reimagines the dimension of perceptual simulation in urban design by providing a conceptual and operational mapping of perception as a process. The proposed framework is intended as a reference for understanding sensory stimuli in urban design practice to aid efficacy and to reinstate the importance in recreating and bridging the people/place relationship. In place making, promoting people/place relationship can contribute to increased sense of belonging, social integration, cohesion, and inclusion.

## **Perception: Constructing the Urban Narrative**

The mutual relationship between the psycho-spatial aspects of our environment has intrigued philosophers, psychologists, geographers, architects, and neuroscientists. The process of which includes sensing information from /about the environment, the perceptual and cognitive representation of the information as enabled by the information, and arriving at certain choices and judgments (Garling and Golledge, 1989). For a unified disciplinary overview, Moudon (1992) offers a useful framework to categorize research areas in urban design namely as image studies, environmental-behaviour study and studies that focus on place creation. Sitte's (1889) work was influential in elucidating experiential issues in the built environment. Research on cognition and ecological perception (Gibson, 2014) further opened up understandings of the subjective experience of the city. Seminal work of Lynch (1960) and Appleyard (1979) uncovered and

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