



# The Cognitive Use of Prior Knowledge in Design Cognition: The Role of Types and Precedents in Architectural Design

\* Dr. Zeynep Çiğdem UYSAL ÜREY

Department of Architecture, Faculty of Architecture, Çankaya University, Ankara, Turkey

<sup>1</sup> Email: [zeynepuysal@cankaya.edu.tr](mailto:zeynepuysal@cankaya.edu.tr)

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## ABSTRACT

*This paper examines the cognitive use of prior knowledge in design and evaluates the role of types and precedents in architectural design and education from a cognitive perspective. Previous research on design cognition shows that the amount of prior knowledge possessed by the designer plays a fundamental role in the production and quality of the creative outcome. Prior knowledge is thought to be held by way of specific cognitive structures that are called cognitive schemas and, the role of our cognitive schemas (be it personal or cultural schemas) is portrayed as indispensable for the formation of our creative productions. Although significant efforts were made in the way of studying the use of prior knowledge in design, the correlation of types and cultural schemas has yet to be explored. This paper examines this correlation between cultural schemas, a markedly cognitive concept, and types, an architectural one, culminating in an investigation of the cognitive role of types and precedents within architectural design and education in the light of the cognitive literature. Building on that attempt, the study endeavors to conduct an interdisciplinary theoretical inquiry that respectively studies the role of prior knowledge in design cognition, the concept of cognitive-cultural schemas, the concept of type and its relationship with cultural schemas, and finally, the cognitive role of types and precedents in architectural design and education. In conclusion, this study proposes that, in terms of function, types are virtually identical to cultural schemas at the cognitive level, and types and precedents have a generative value for architectural design, by virtue of the fact that they exist as the initial cognitive schemas that are employed at the beginning of the design process.*



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## 1. Introduction

Empirical research on the cognitive properties of design has revealed a number of significant characteristics of the creative design process so far. One of such characteristics is about the nature of design problems. Design problems

are portrayed as 'ill-defined' due to the fact that they often lack a clear definition, as their

### \*Corresponding Author:

Department of Architecture, Faculty of Architecture, Çankaya University, Ankara, Turkey

E-mail address: [zeynepuysal@cankaya.edu.tr](mailto:zeynepuysal@cankaya.edu.tr)

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