1056-C1-1580 **Fatma Mete*** (fm95@cornell.edu), Ithaca, NY 14850, and **Osman Yurekli** (yurekli@ithaca.edu), Ithaca, NY 14850. *Empirical Origin of the Design Concepts and the Euclidean Geometry.*

Creative design makes use of geometry in the establishment of its fundamental concepts. We argue that the three-dimensional nature of space as well as its Euclidean character is of empirical origin, and that this can be demonstrated and tested in the framework of actual design processes. Design is continually calculating relations of space of the most varied kind by geometrical principles and the success of its construction agree with these calculations. We present a demonstration from fabric design field to show the empirical sources of these concepts, their formations and their spatial patterns of relationships. Our ultimate aim is to develop the invariants of design and creative process, and to bring the formal side of design and art within the purview of mathematics. (Received September 22, 2009)