Chapter 30

Body Movement Based Architecture

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ABSTRACT

The aim of this research is to investigate the connections between Visual Computing, which is oriented towards the representation of complex surfaces, and Geometrical Design Tools, which intercept the movement created through dance, itself understood to be the art and technique of composing forms in space. Through investigating the tight link between perception and representation, this studio has the heuristic aim of capturing the new messages that come from the utilization of digital media, though always the value of experience is considered fundamental to conceptualization and the teachings of history are kept at the fore.

INTRODUCTION

There was a madman who sculpted the wind, they used to stop and watch him in motion, modeling every detail of his piece of art, after a time he would stare from afar. Almost always he’d be discontented, and in one puff destroy his creation, at night the people would go home, the madman’s dance etched on their mind... (Lorenzo Jovanotti, Buon Sangue, 2005)

This study has been developed using epistemological research on the heuristic value of representation. Its scope is the representation and classification of complex surfaces in the architectonic field, whose numerous interpretative modalities have been discussed at length in the scientific literature (Emch, 1919). In this area, a driving role has been taken by the Synthetic Method (Migliari, 2009) that analyzes...
surfaces as “geometric places”, collective points in space that share the same properties. This inter-
pretation of form has the advantage of establishing a correlation between performance and construction. Given the central role of the event, the “perceptive principle of intelligibility” merges with geometry (Argan, 1979), in this way recalling the concept of “topology” (Sgrosso, 1979) – literally the “analysis of places” – the field investigating the relationship between time and space. Under these premises the implicit concept of motion allows us to establish a link with the elementary graphic elements of point and line, an ideal bi-dimensional synthesis for the schematization of thought (de Rubertis, 1994). It is by this logic that complex surfaces are defined by classical descriptive geometry as a special extension of Hachette’s definition of the curve: the geometric location of a moveable point subject to one or more constant forces that vary with each position (Hachette, 1828).

It is clear that such an interpretation derives from a knowledge of form which is in itself clearly in-
fluenced by instruments. The design of a curve, for example, even in a purely digital form, may change depending on which tool is used, and the results will be different if we use a spline or a NURBS curve. Such conditions may have huge implications in the field of heuristic planning.

According to Marshall McLuhan, drawing is a tool, a media, and thus a message (McLuhan, 1964), and by this logic we can connect Visual Computing and Emerging Geometrical Design Tools. Past ar-
chitectural masters, such as Le Corbusier, spent their life in a continuous survey on the diversification of representative methods, their aim being to free themselves of media conditioning in the process of morphogenesis (Boesiger & Girsberger, 1987). It is in fact possible to propose a history of contemporary architecture by analyzing the development of techniques of representation, for example in Zaha Hadid’s aesthetics evolution (Figure 2).