Matthew Cohen: *Beyond Beauty: Reexamining Architectural Proportion through the Basilicas of San Lorenzo and Santo Spirito in Florence*

**(Centro Internazionale di Studi di Architettura
Andrea Palladio / Marsilio, 2013)**

Maria Teresa Bartoli

Published online: 8 January 2015
© Kim Williams Books, Turin 2014

Abstract This is a book review that examines Matthew Cohen's findings about proportion and number in the Basilicas of San Lorenzo and Santo Spirito by Filippo Brunelleschi.

Keywords Matthew Cohen · Filippo Brunelleschi · Renaissance architecture · Rudolf Wittkower · Proportion · Number series · Severino Boethius

This volume, rich in illustrations (reproductions, photographs and surveys) offers, by means of the study of two monuments by Brunelleschi, an impassioned and thoroughly argued discussion of proportion in architecture. This work earned the author the 2012 award of the James Ackerman Prize for History of Architecture, and thus it was published by the CISA in Vicenza.

Matthew Cohen presents his point of view on the topic of proportion in architecture, contrasting it with what he refers to as the “Wittkower paradigm” (p. 36 ff), the axiom connected to the set of numerical and geometrical characteristics that were treated by the authoritative historian around middle of the twentieth century. That treatment, received very favourably by critics and collecting illustrious followers, was set out in *Architectural Principals in the Age of Humanism*.

Cohen's deductions emerge in relation to the relationships between the church as designed by Brunelleschi, the earlier late-Medieval design, and later interventions that over time have resulted in the actual design of San Lorenzo, by means of both accurate metrical surveys documented in the volume and a detailed discussion of the various historiographical hypotheses proposed up to the most recent times. The complex relationships between the medieval design and that of the Renaissance is very carefully investigated.

M. T. Bartoli (✉)
Dipartimento di Architettura, Università degli Studi di Firenze, Florence, Italy
e-mail: mtbarto@unifi.it

Matthew A. Cohen
Beyond Beauty
 Reexamining
 Architectural Proportion
 through the Basilicas of
 San Lorenzo
 and Santo Spirito
 in Florence

CENTRO
 INTERNAZIONALE
 DI STUDI
 DI ARCHITETTURA
 ANDREA PALLADIO

Marsilio

Premio James Ackerman per la storia dell'architettura 2012

A particular asset of the work is the knowledge it demonstrates of late medieval mathematics, of which various unpublished aspects are set forth. The particular measurements in *braccia* of the intercolumniation in San Lorenzo shows the familiarity of Humanistic culture with those aspects. In 503 A.D., Severino Boethius (475–525 A.D.), the author of treatises on the *quadrivium* (the structure that had given for a millennium to scientific knowledge, constituted of arithmetic, music, geometry and astronomy), had proposed that the numerical series were the structures that render numbers most interesting. The numbers that descend from geometric figures are the foundations of his number theory, which contains three types of geometric numbers: linear (one-dimensional), polygonal (two-dimensional) and pyramidal (three-dimensional). The development of this theory gave rise to the construction of particular series. One of these is present in the bay of San Lorenzo as a matrix for the design. Cohen makes a significant contribution to knowledge that reveals the previously unknown meaning of the use of some numbers that recur in Brunelleschi's architecture: the sequence 9, 13, 17, 21, of the series of the "gnomons of hexagonal pyramidal numbers" (p. 94).

In his final considerations, Cohen places the accent on the mental nature of proportional constructions, which he believes to be in contrast to Wittkower's visual idea of it. This contrast, connected to the use of the term "aesthetic" in reference to proportion, perhaps descends from the different training and backgrounds of the two scholars: the humanistic scholar used the term in its original meaning of "relative to

the knowledge filtered through the senses”, according to which the perception of beauty is a consequence of the harmony implicit in the creation, while the younger scholar, of a scientific formation, uses it in the more superficial sense in current use, relative to “beauty in art”.

In the last century, Wittkower, as a historian and without surveys, blazed a fascinating trail, which led numerous architects to undertake surveys and historic studies, inducing them to measure with ancient units of measure. In his commendable work Cohen covers a good bit of ground. I believe the initiator would have appreciated this work.

Translated from the Italian by Kim Williams.

Maria Teresa Bartoli Architect has been Full Professor of architectural surveying since 2002 in the Faculty of Architecture of the University of Florence, where she has worked since 1983, first as a researcher and then as associate professor, teaching drawing, surveying and geometry for architects. She has taken part (as a team member and leader) in the survey of important monuments in Florence, on behalf of the public administration or their holders, including Palazzo Strozzi, Palazzo Medici, Palazzo Vecchio, the Convents and Churches of the Carmines, Santa Maria Novella and Ognissanti, Villa Medici in Careggi and the Hospital of San Giovanni di Dio. Her research fields include the history of Renaissance perspective, the links between architecture and geometry, metrology and the history of geometrical paradigms in architecture. Her most recent book is *Dal gotico oltre la maniera, gli architetti di Ognissanti a Firenze* (Firenze, Edifir, 2011).