

# Zooming as a Didactic Metaphor: A Multi-layered Depiction of Simon Stevin's “Mirror-Symmetry”

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The demonstration proposes an exploratory, didactic viewpoint on the concept of symmetry in the writings and designs of the Flemish engineer Simon Stevin (1548 - 1620) by using the textual zoom (z-text) model (Armaselu 2010, 2014). In particular, the proposal focuses on Stevin's unpublished treatise on architecture and town planning, *De Huysbou* (Architecture), whose excerpts in manuscripts circulated among scholars in the Dutch Republic (Heuvel 2005). Stevin's diagrams of ideal buildings and town have been often described in purely morphological and rational terms (Hoeven, Louwe 1985). However, we will try to reveal, via the zooming features of the Z-editor interface, that Stevin's city architecture was not conceived as one rational whole, but rather should be read as a multi-layered model based on the underlying concept of symmetry. Nowadays, we would describe this concept as “mirror-symmetry”, but in Stevin's days symmetry was still understood in the classical (Vitruvian) sense as the harmonious ratio between the parts and the whole. For that reason he used the Dutch neologism “leijckseijdicheyd” (literally: “like-sidedness”) instead of the common term “symmetria”. Mirror-symmetry in Stevin's view had its origins in nature and should, therefore, serve as the basis for logical architecture, unlike the proportional symmetry of Vitruvius and his followers. Since there is no proportional relationship between the parts of human and animal bodies there could be no question of a consistent natural order of the parts to the whole serving as a basis for architecture (Heuvel 2005: 207-214). The question is fundamental in Stevin's scientific method and returns in several of his works, e.g. on mathematics and music theory (Heuvel, in press).

In *De Huysbou*, Stevin's original drawings are not independent objects for reproducing the imaginary ideal of a building or town. Instead, his representation of architecture consists of a series of diagrams (including letters/numbers referred to in the descriptions) to be understood in combination with the text and other illustrations. Although the dimensions or the layout of the described houses and blocks with various rectangular forms may not fit with each other and with the layout of the city, all plans correspond to the rules of mirror-symmetry. Figure 1 shows two examples of z-text. The first represents a transposition of Stevin's drawings and texts allowing the reader/explorer to traverse the conceptual space by zooming-in and out “through” the city,

buildings block and house down to the definition of “like-sidedness”. The second illustrates zooming with changing perspective (print/manuscript) in a contextualisation text.

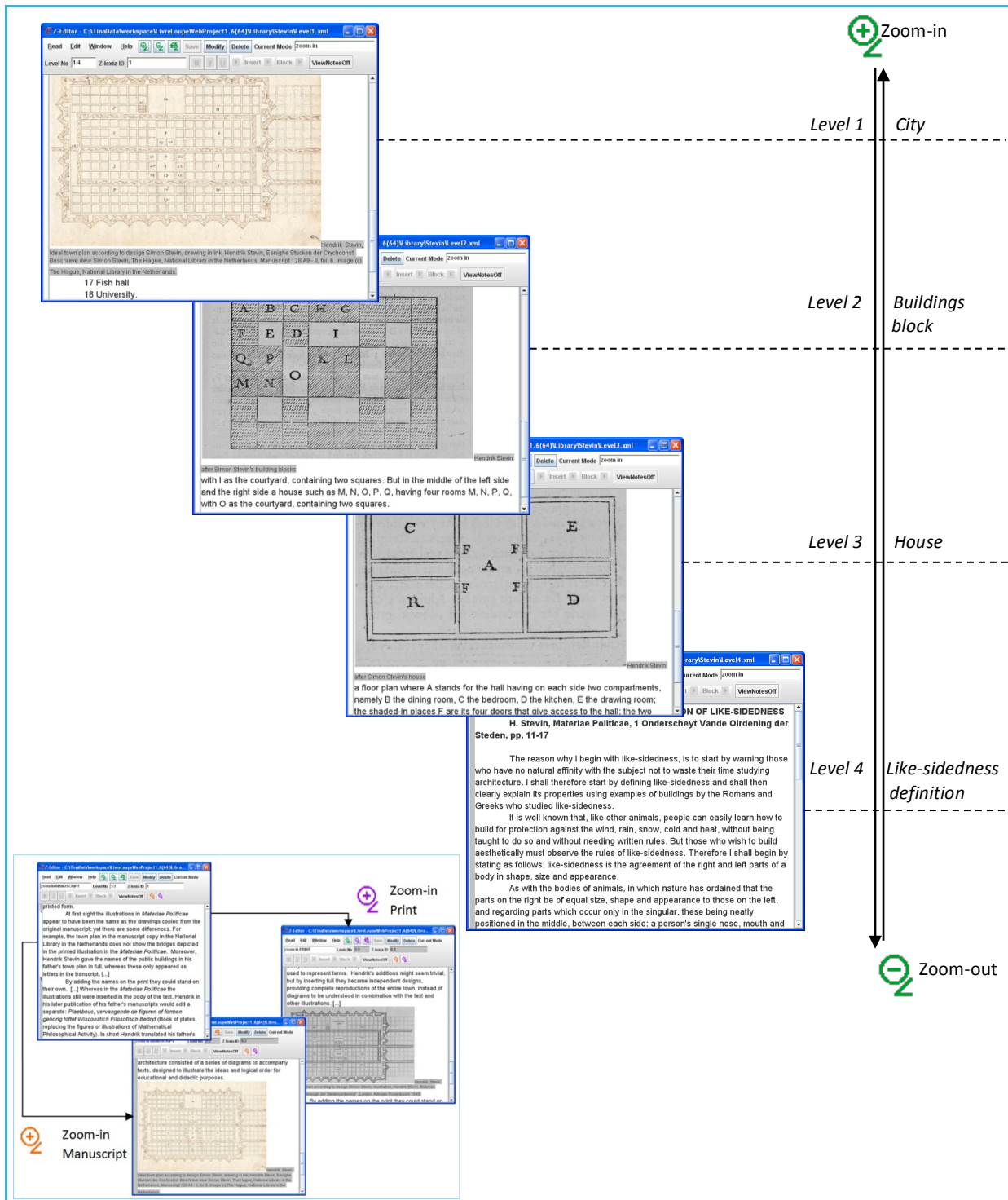


Figure 1: Z-texts: mirror-symmetry (Stevin 1649); contextualisation print/manuscript (Heuvel, in press)

Zooming provides a figurative way of unfolding Stevin’s multi-layered model that allowed him, in his role of private tutor, to explain the principles and natural logic of his architecture and town planning on each level, most clearly for educational and pedagogic purposes. Logical and lucid models - albeit incomplete - were for Stevin a more appropriate means of achieving that goal than a complete

reproduction of reality which, with all its contradictions, might obscure the problem, or in his own words, “because the teaching should not be complicated by arguments” (Heuvel 2005: 68).

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