Early Applications of Linear Perspective
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Representing the Body

What renaissance artists had clearly achieved through the careful observation of nature, including studies of anatomical dissections, was the means to recreate the 3-dimensional physical reality of the human form on 2-dimensional surfaces. In part, the key to this achievement lay in understanding the underlying, hidden structure of the human body which then enabled the artist to produce realistic representations of what he saw on the flat surface of a wall (in the case of frescoes) or on a wooden panel or paper (in the case of drawings).

Artists in the early 15th century had learned to portray the human form with faithful accuracy through careful observation and anatomical dissection, and in 1420 Brunelleschi’s experiment provided a correspondingly accurate representation of physical space. Antonio Manetti, Brunelleschi's biographer, writing a century later, describes the experiment based on careful mathematical calculation.

Perspective and Architecture

It seems reasonable that Brunelleschi devised the method of perspective for architectural purposes - he is said by Manetti to have made a ground plan for the Church of Santo Spirito in Florence (1434 - 82) on the basis of which he produced a perspective drawing to show his clients how it would look after it was built. We can compare this drawing with a modern photo of the actual church. This video clip allows you to crossfade back and forth between the original perspective drawing and the modern photograph. It is clear how effective the new technique of mathematical perspective was in depicting spatial reality.

The Body in Space

But this was just the beginning. Ten years later, the painter Masaccio applied the new method of mathematical perspective even more spectacularly - in the fresco The Holy Trinity, where the barrel vaulted ceiling is incredible in its complex, mathematical use of perspective.
Masaccio, *Holy Trinity*, 1427, fresco (Santa Maria Novella, Florence)

Here lines overlay Masaccio's actual geometric framework to make clear the structure of the perspective itself. From the geometry it is actually possible to work backwards to accurately measure and reconstruct the full 3-dimensional space that Masaccio depicts, illustrating exactly, Brunelleschi's interest in being able to translate schemata directly between two and three-dimensional spaces. It was not long before a decisive step was taken by Leon Battista Alberti, who published a treatise on perspective, *Della Pitture (or On Painting)*, in 1435. Once Alberti's treatise was published, knowledge of perspective no longer had to be passed on by word of mouth. For some it became a matter of consuming artistic, even philosophical interest.