Lisbon Perspectives

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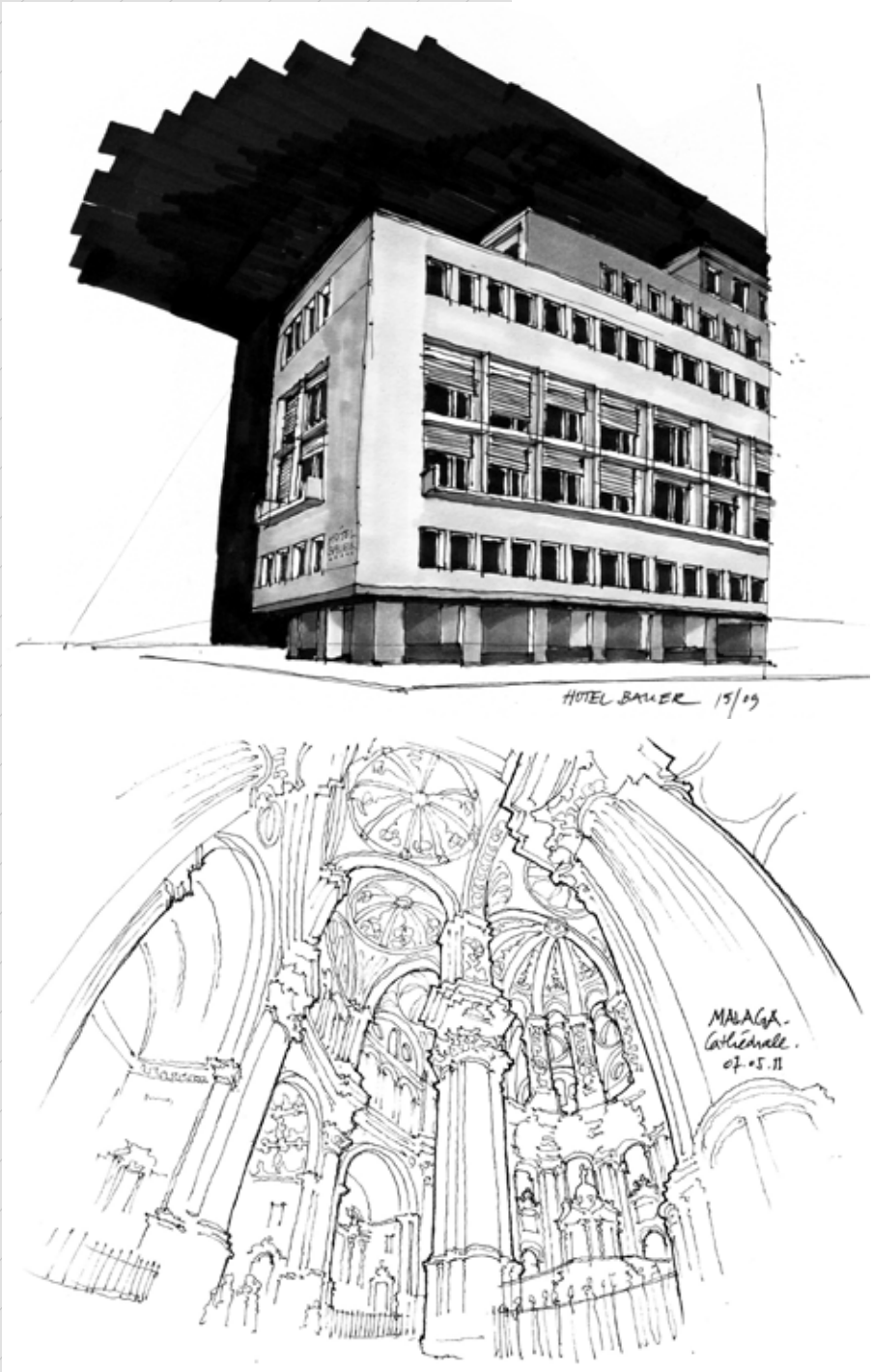

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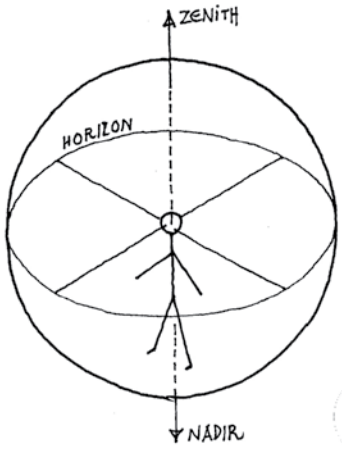
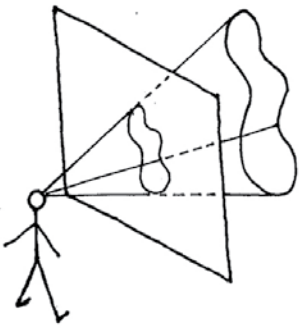
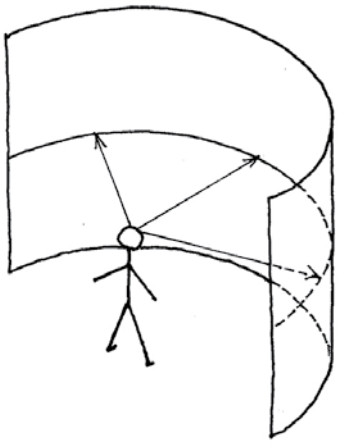
The perspective



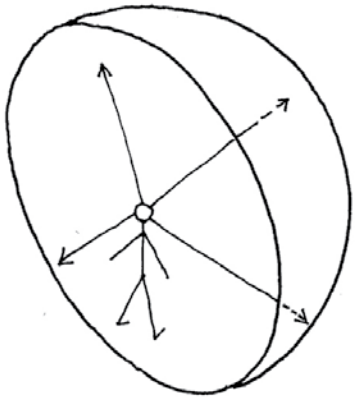
The space surrounds us **in all directions.** To draw is to represent this space as a whole or as a part of it.



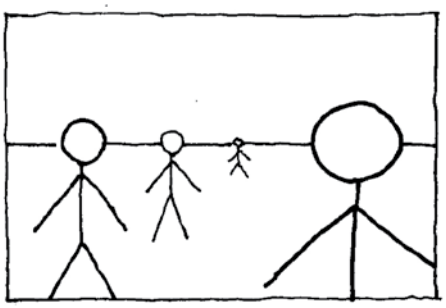
The flat perspective places us face to face towards a **window**. The plain of this window projects all the elements of the space.

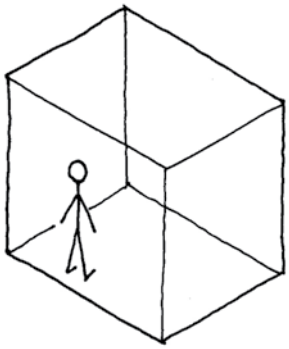


The cylindric perspective places us into the **axis of a cylinder** and allows us to stretch our range of vision.



The spherical perspective places us into the **central point of a sphere** and allows us to stretch our range of vision in all directions.



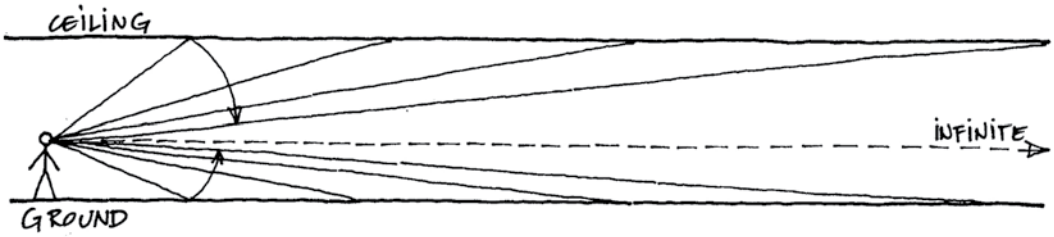


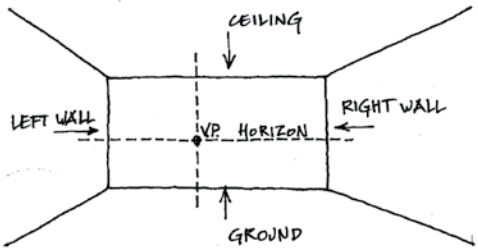
The rules of perspective are identical, such as the mode of display.

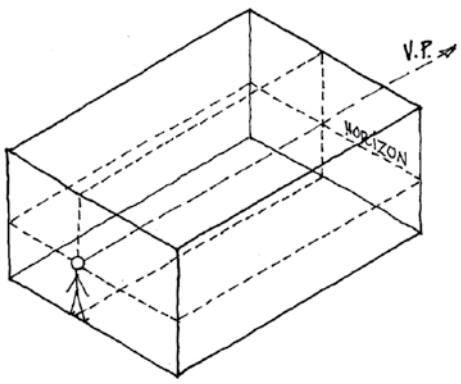
Objects that are close to us seem to be big, whereas distant objects seem to be small. **Depending on its distance,** an object occupies a smaller or bigger part in our range of vision.

Which are the consequences of perception concerning orthogonal space?

When an observer moves away two parallel surfaces seem to get closer to each other.



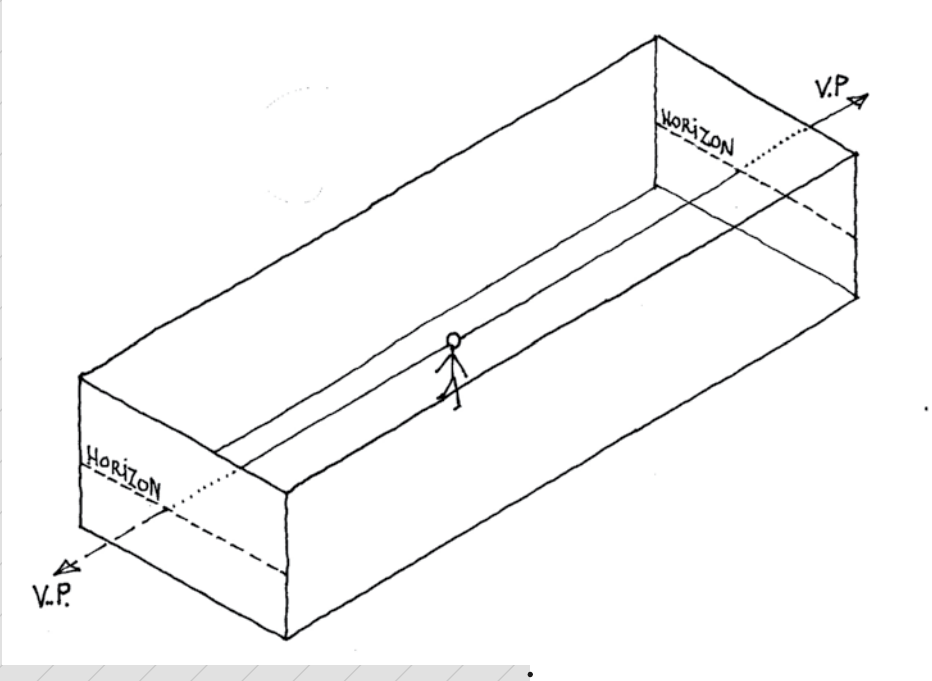


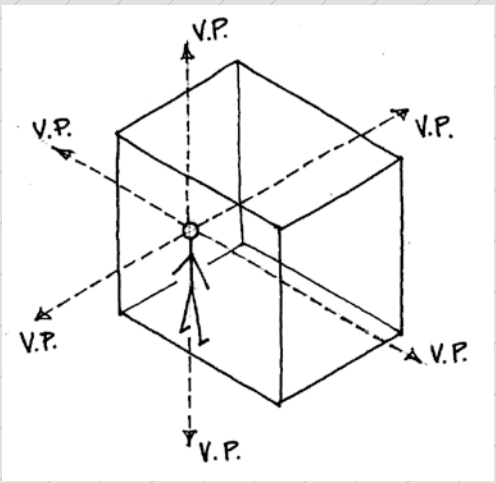


The sun seems to rise in the distance in front of me, the ceiling seems to sink in the distance in front of me. **In infinity, they rejoin at the horizon.**

On the left and on the right side, the walls seem to get closer towards a vertical line exactly in front of the sketcher.

The horizontal edges of space seem to meet each other in infinity. **All the edges vanish towards this point from the sketcher's perspective.**

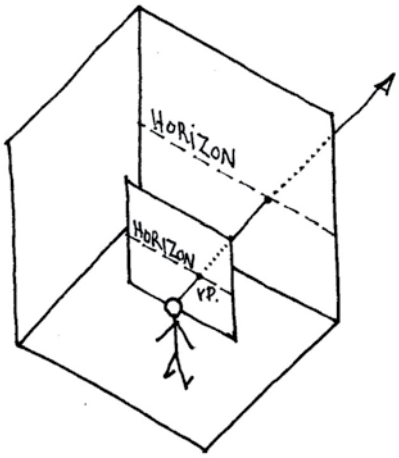


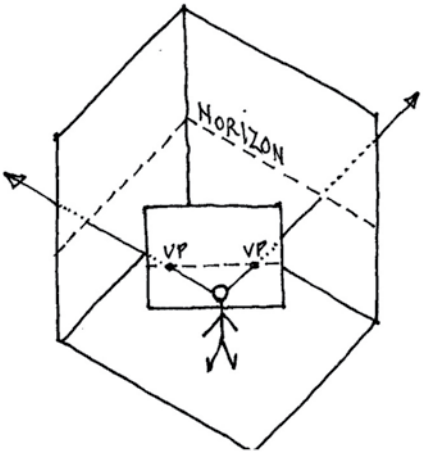


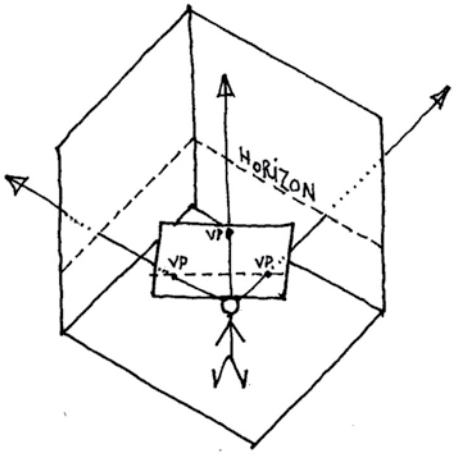
When I turn around, the same edges seem to converge towards another vanishing point. This one is the **counterpart of the first one.**

In an orthogonal world, there are **always** six vanishing points around us. There are four on the horizon (one each 90 degrees), one in the zenith and one in the nadir.

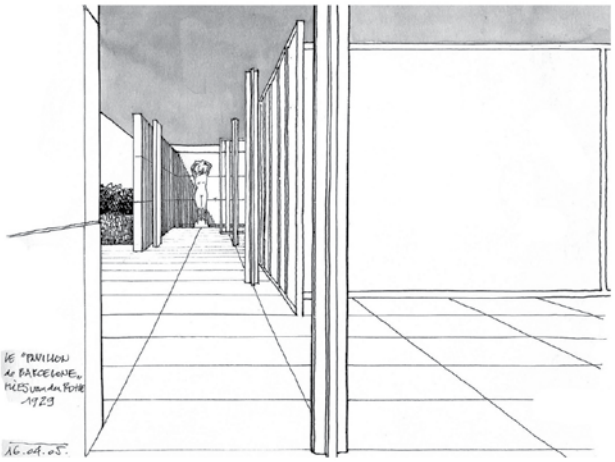
The flat perspective



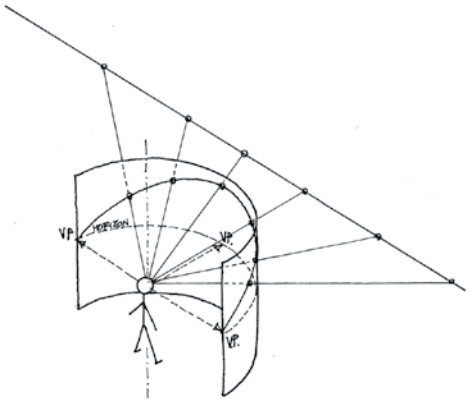


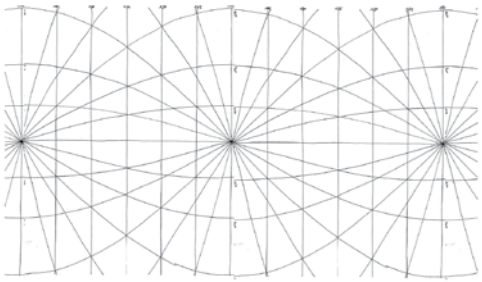


Depending on the **direction of view** (and that means according to the representation of space), there are perspectives with one, two or three vanishing points.



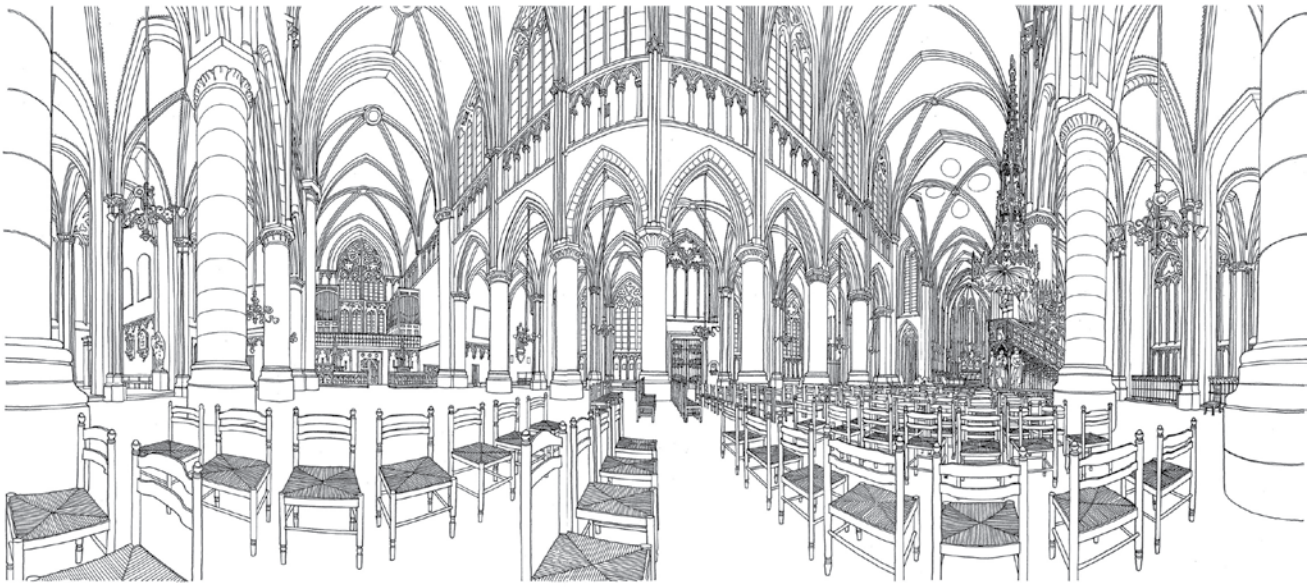
The cylindric perspective



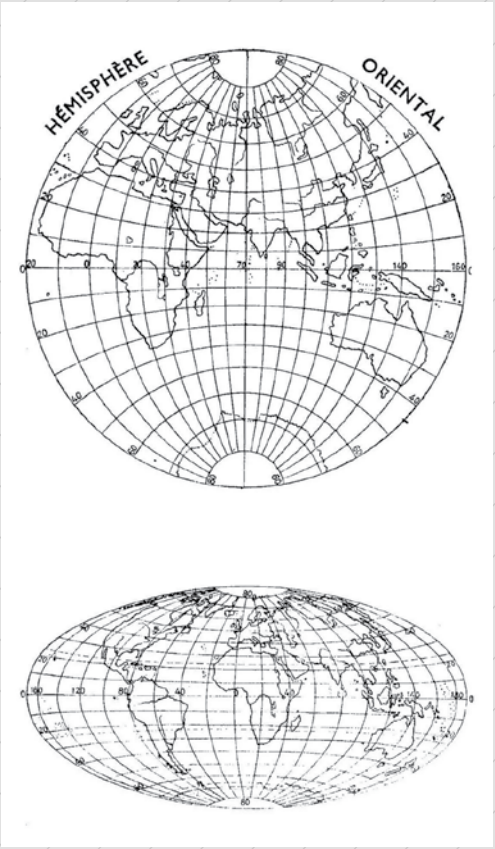


If the axis is vertical, the cylindrical perspective can generate a curve out of a horizontal line. This curve converges in two vanishing points on the horizon, **180 degrees face to face** with each other.

On the generated cylinder, the horizon appears as a straight line. Each 90 degrees, there are the vanishing points that also form several sinus curves on both sides of the horizon.

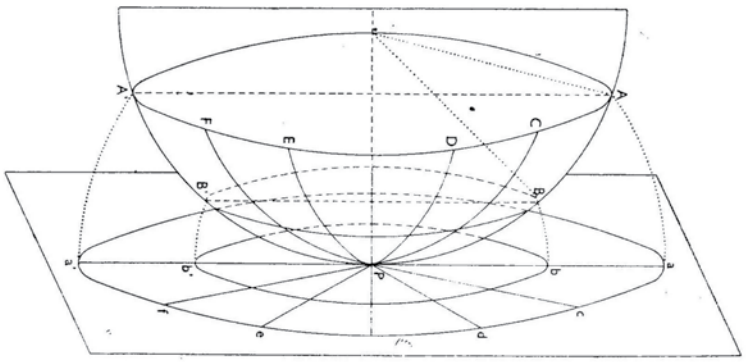


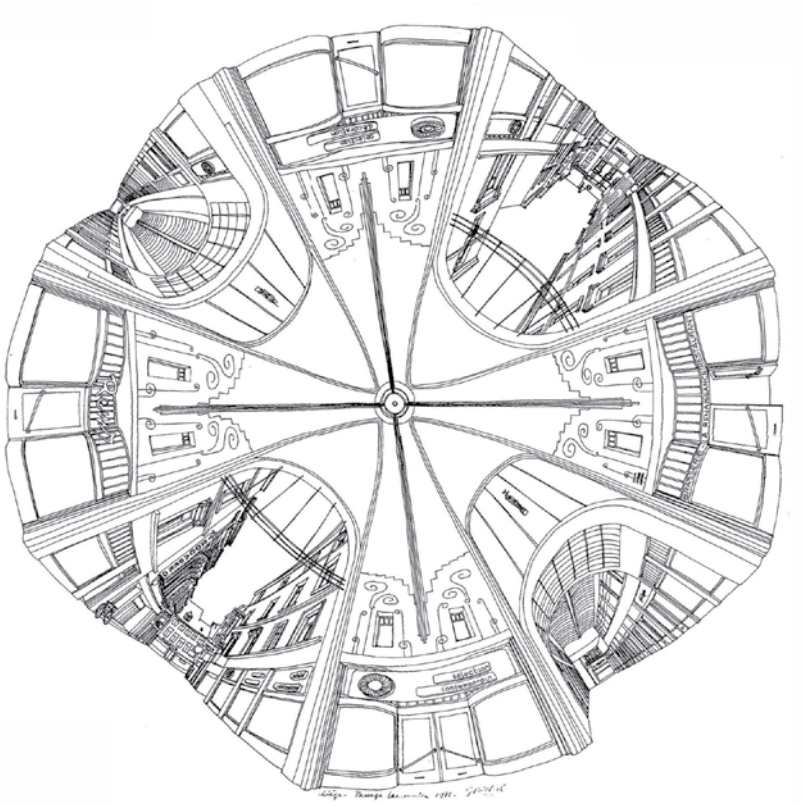
The spherical perspective

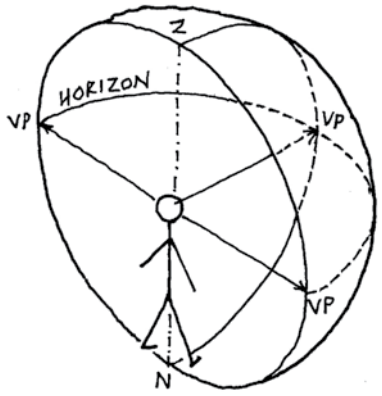


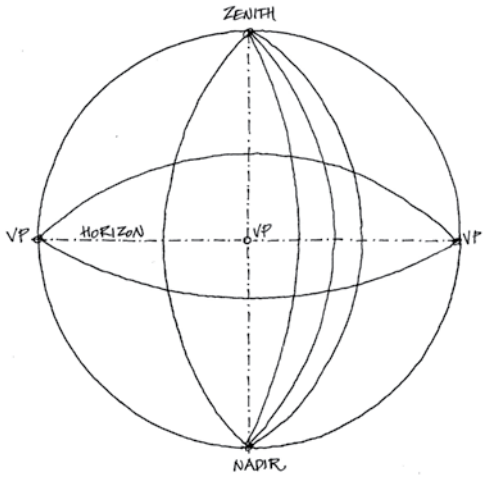
It is impossible to display the surface of a sphere. We choose an artificial way of **displaying a sphere** as in geography.

The most obvious way to display a sphere is to cut the sphere into two halves. You get a floor plan in the centre of the sphere. Now you fold down the two halves of the former sphere for a circle.





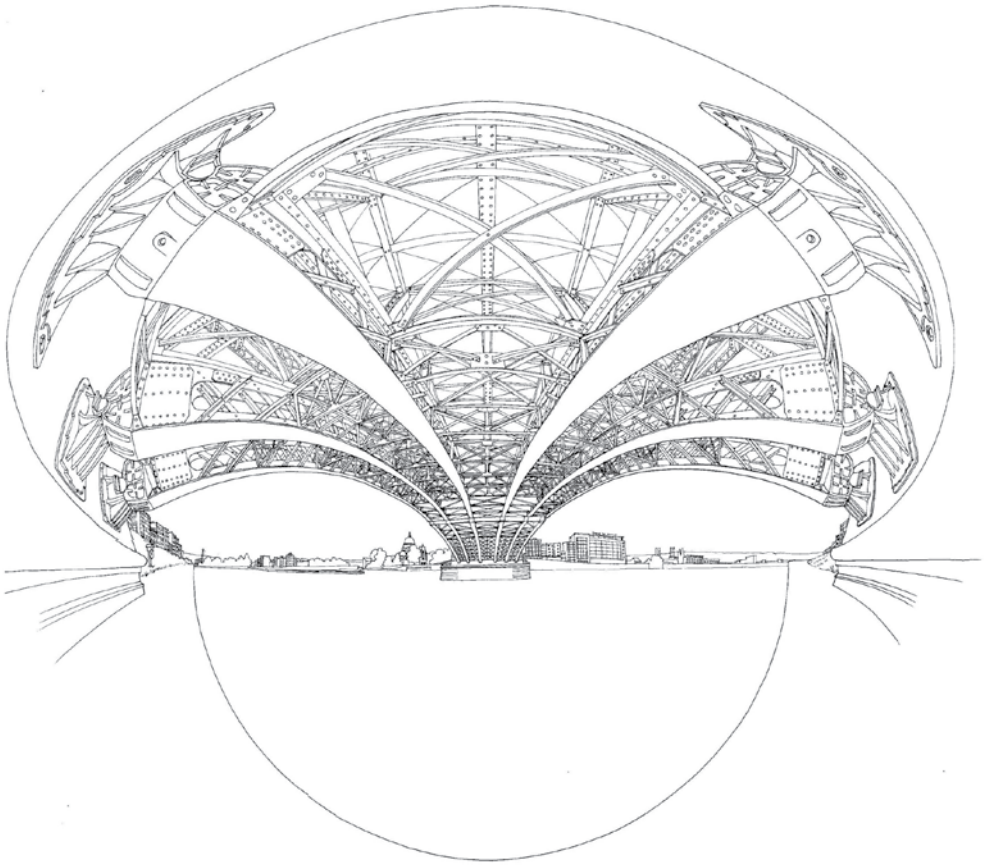


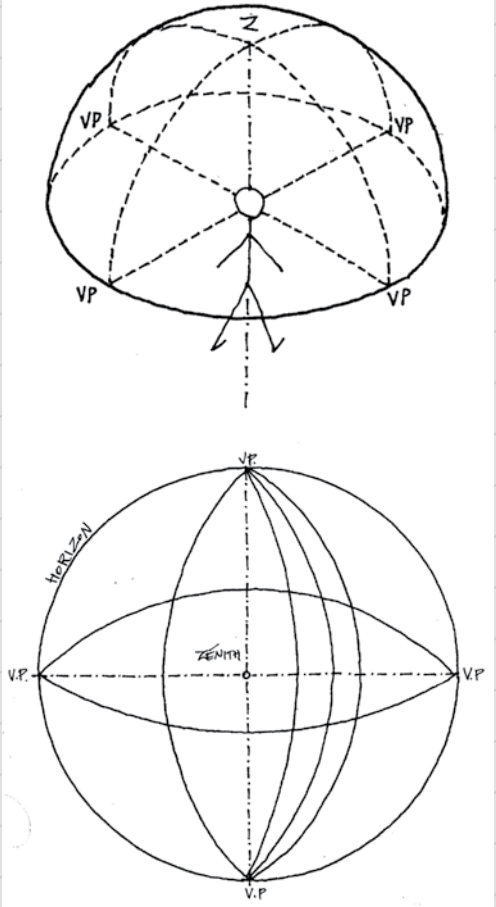


If you cut the sphere with a **vertical section**, you will get the zenith and the nadir.

You can also choose this section plan to obtain two vanishing points of horizontal lines.

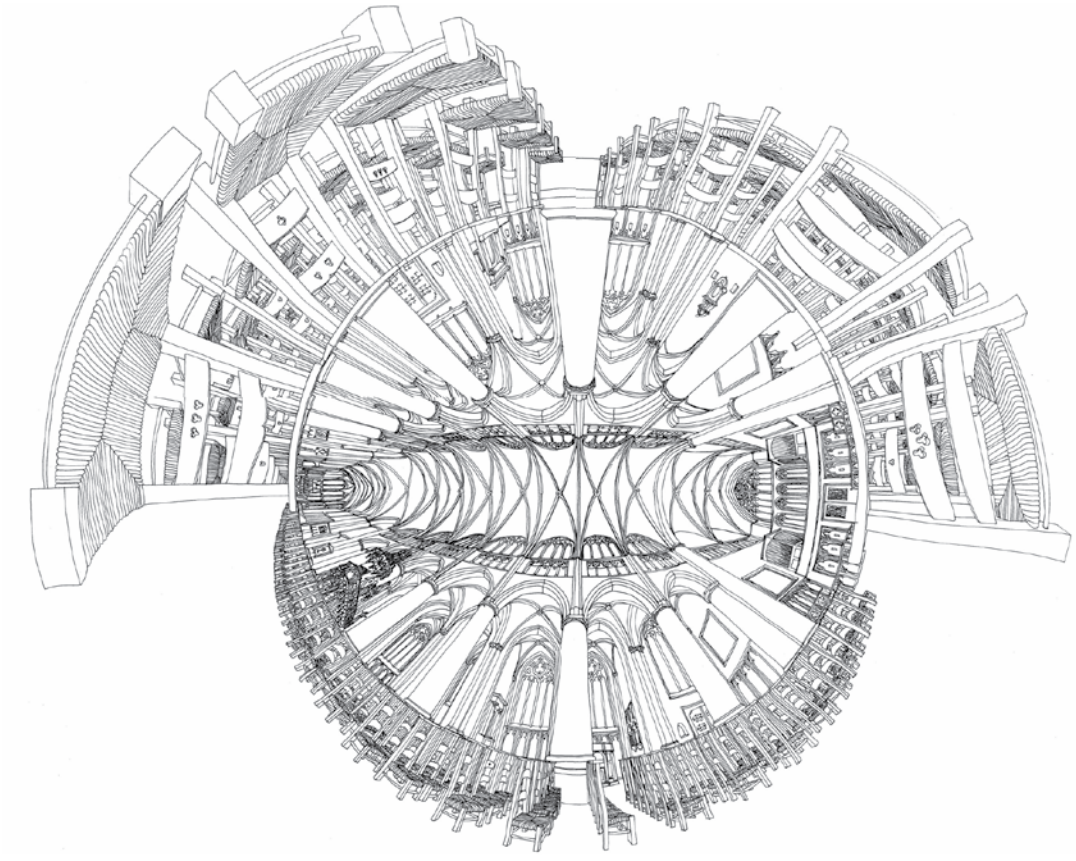
On the circumference, you will find vanishing points of vertical and horizontal parallels to the cutting plan. In this section, the centre of the circle is the vanishing point of the horizontal perpendicular. They converge in a straight line.

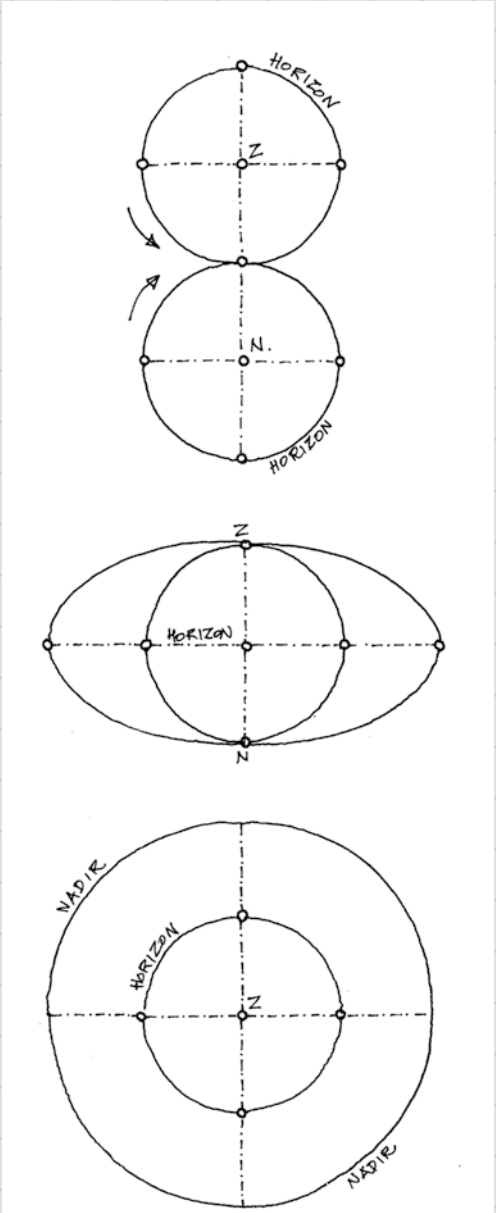




If you cut the sphere with a **horizontal section**, you will get the horizon, and, every 90 degrees, the four vanishing points of the horizontal lines. The zenith (or the nadir) is in the middle of the hemispherical surface.

On the circumference, you will find the vanishing points of grids consisting of horizontal lines and the verticales meet in a right angle at the centre of the circle.





If you like to generate the **totality of the visual sphere**, there are some possible ways:

Cut the sphere vertically and try to generate the two hemispheres seperately. You will get two circles that are arranged towards the horizon.

Generate the second hemisphere with two crescent-shaped lines on both sides of the first one, as they do in cartography. The horizon takes the position of the equator.

Generate the second hemisphere around the first one. In the drawing of the cathedral, the nadir becomes the large outer circle.

All these proposals are only basic pieces of information about the curvilinear perspective. Further methods exist: you can arrange a cylinder in any position you like, you can cut the sphere at any position you like.

Another practicable method would be the equirectangular arrangement of the sphere. The zenith and the nadir stretch out to generate the long edges of a rectangle, cut twice by the horizon.

Photo: **Simon Sherwin**, Flickr
(http://www.flickr.com/photos/simons/1727503672/in/set-72157594482153716/)