tated about a plane, i.e. an axial plane. To partially elucidate the difficulty we experience here in trying to imagine what is meant by rotation about a plane, we should examine the rotation about an axial line in three-fold space a little more closely. Consider the section of the figure made by a plane perpendicular to the axis. This section rotates about the central point, a point in the axial line. Any other parallel plane section rotates about another point in the axial line. The aggregate of plane parallel section which constitute the entire figure rotate about the aggregate of points, constituting the axial line. So in our four dimensional rotation, each solid section of the four space solid rotates about an axial line and the aggregate of solid sections or the entire figure each rotating about its axial line gives us for the aggregate axis, the axial plane.

I just spoke of the solid section of a four dimensional figure. To make this clearer, let us look at spaces of lower dimensions. The section of a plane figure is made by a line; of a three dimensional figure by a plane, and always gives a plane figure for the section. So by analogy the section of a four-fold figure must be made by space of three dimensions and the result would be a figure of three dimensions. To make this more concrete, the section of a sphere made by a plane is a circle, while the section of a hypersphere made by our space would be a sphere, i.e. if a hypersphere entered our space the section would be a sphere.

So we may speak of the solid sections of other hypersolids. If any such figure could enter our space all we could see would be a three dimensional figure. Take the case of the sphere just cited. Precisely as a sphere entering a plane would be seen in two dimensions as the circle of intersection and would enter suddenly at the tangent point to show an increasing circular size until the meridian section passed, then would shrink up to disappear again, so the hypersphere would appear as a point, the point of contact of the four dimensional figure with threefold space. Then a small sphere would be seen increasing in size to a maximum, to shrink up and disappear as it came.

We may also study the appearance of the tesseract as it would appear to us. Just as a cube passing through a plane with its face parallel to the plane would show us a square of unvarying size and position, so the tesseract might appear suddenly as a full grown cube, stationary, and of unvarying