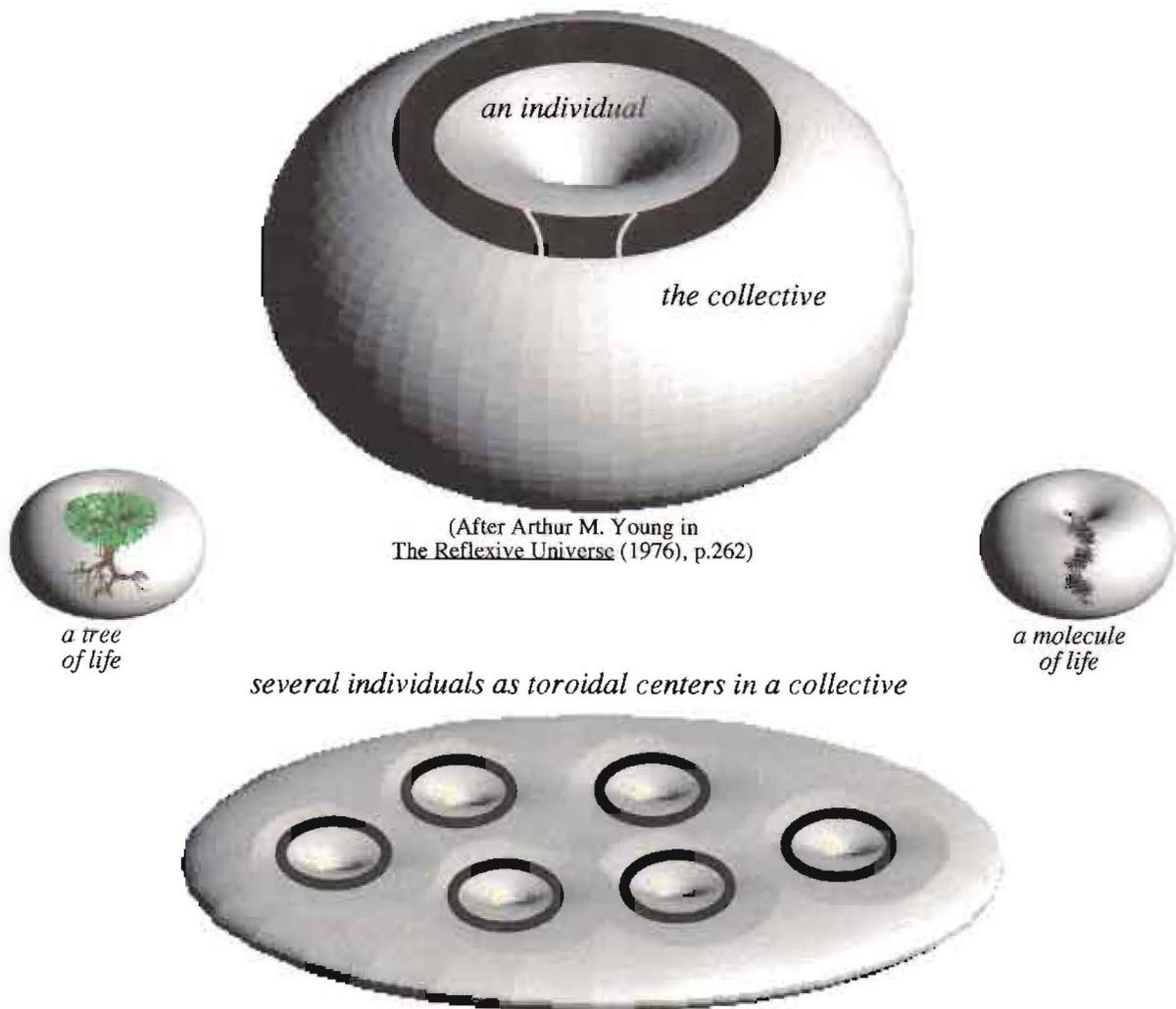
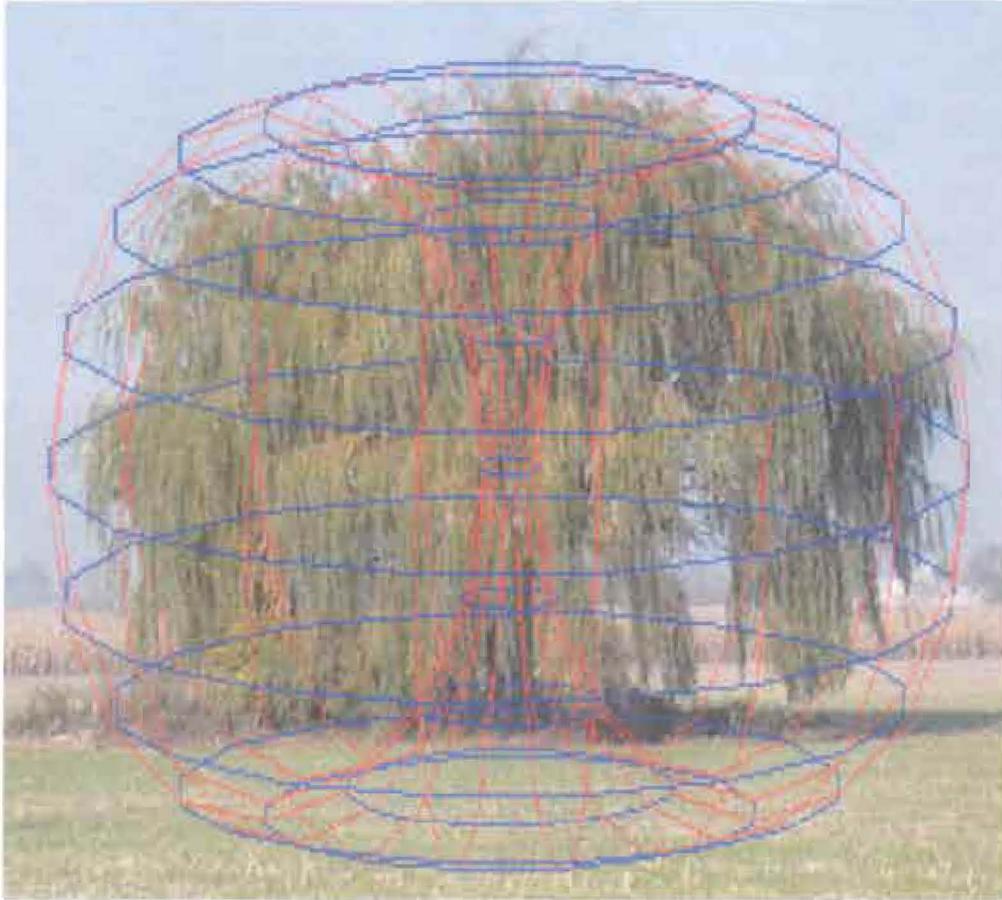


The Individual and the Collective

The paradox of the individual in a collective can be dissolved topologically, in a way suggested by Arthur M. Young in The Reflexive Universe (1976). If individuals are conceived as separate “billiard balls” knocking around in an aggregate and somehow linked in “relationships,” there is no reasonable reconciling of their hermetic separateness. If instead individuals are perceived as (toroidal) centers in a larger whole, individuation can be distinguished as pictured below while retaining full connectivity with and immersion in the ambient collective. Any number of individuals can be accommodated in such a perspective. It is a characteristic of a not-simply-connected topology that there are always two or more ways in which any constituent can be related to any other. The simple images below thus offer a hint of the profound difference between spherical(or planar) models and those of a toroidal order. Truly, in the fullness of a toroidal topological perspective the individual and the collective are one.



Sometimes the living tree as a system shows off its toroidal topology in a conspicuous way, as did this weeping willow somewhere in Ohio, USA, in October 2000.

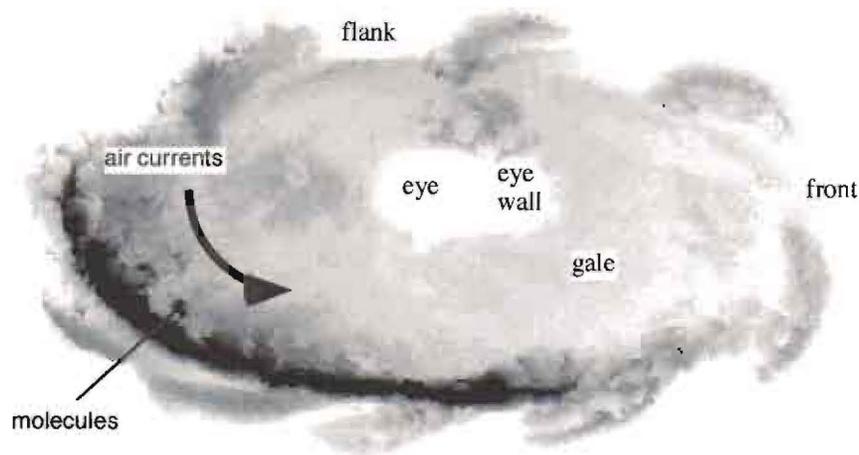


Of course, we are not the first generation of derelicts to notice this. The pagan Celts made jewelry to indicate what they had noticed and assigned meaning to it.



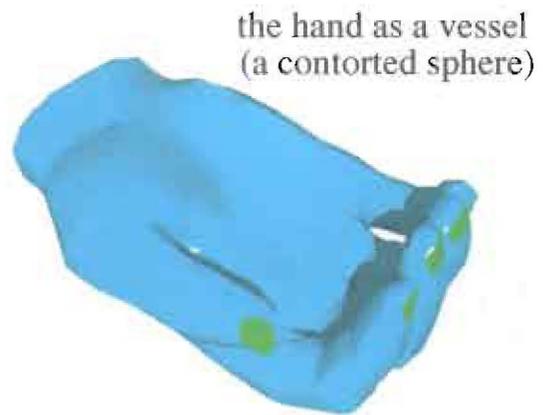
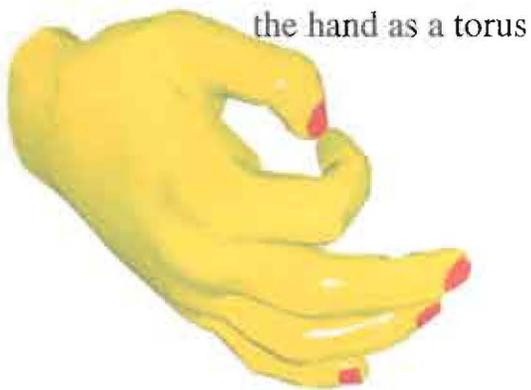
*Celtic medallion in gold
representing the tree
(as a symbol of sexual potency)*

A great challenge for the systems movement has been to get beyond mechanical paradigms such as clockworks and computers toward alternative models and metaphors. The hurricane as an exemplar of a “real” fluidic entity which opens discourse about various systemic matters, e.g., “analysis” and the limits thereof. While there is some possibility that a machine can be taken apart and understood piecemeal, an eddy such as a hurricane is not analyzable in that way. Reduction to interactions between molecules is neither instructive nor tractable, so more holistic considerations must be made, even for technological discourse. From a systemic vantage, one can show partiality about the whole eddy-as-an-entity by identifying its gale and flank and eye, etc. To do this is something other than analysis, however, and such “parts” are meaningless without consideration of the whole. It is not possible, for example, to sell hurricane eyes disembodied. The place of perspective is also apparent in such an example, since from within the hurricane everything looks very different than it does from various positions outside its eddy. One by-product of a “fluidic” paradigm for realized systemicity is that “it rests by changing” and so gives us some Heraclitean philosophy for free. Moreover, insofar as the ambient milieu is thoroughly interpenetrating and consubstantial with the system of the eddy, the medium is the messaging, i.e., manifesting what Maturana has infelicitously called “structural coupling.” Certainly, any perceived system including the eddy and more or less of its milieu exemplifies Ackoff’s putative definition of “system” which says that “a system is a composite whole, no part of which can be changed independently,” this without recourse to formal structures of “objects and relationships” or to electrical or mechanical devices.

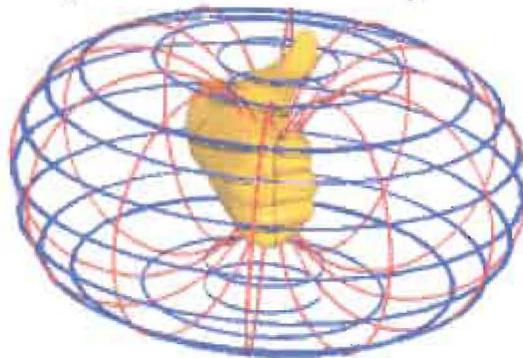


Handy Topologies

The human hand can be reshaped at will,
for example,
as a torus for grasping and controlling
or
as a sphere for cupping and holding.

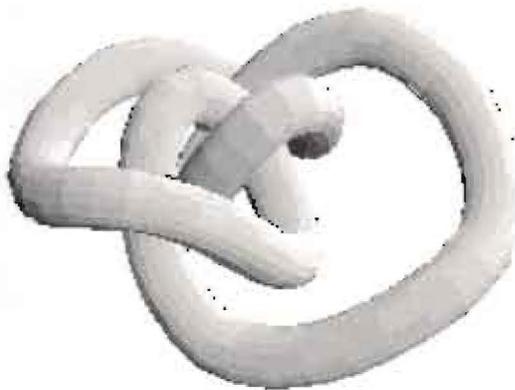
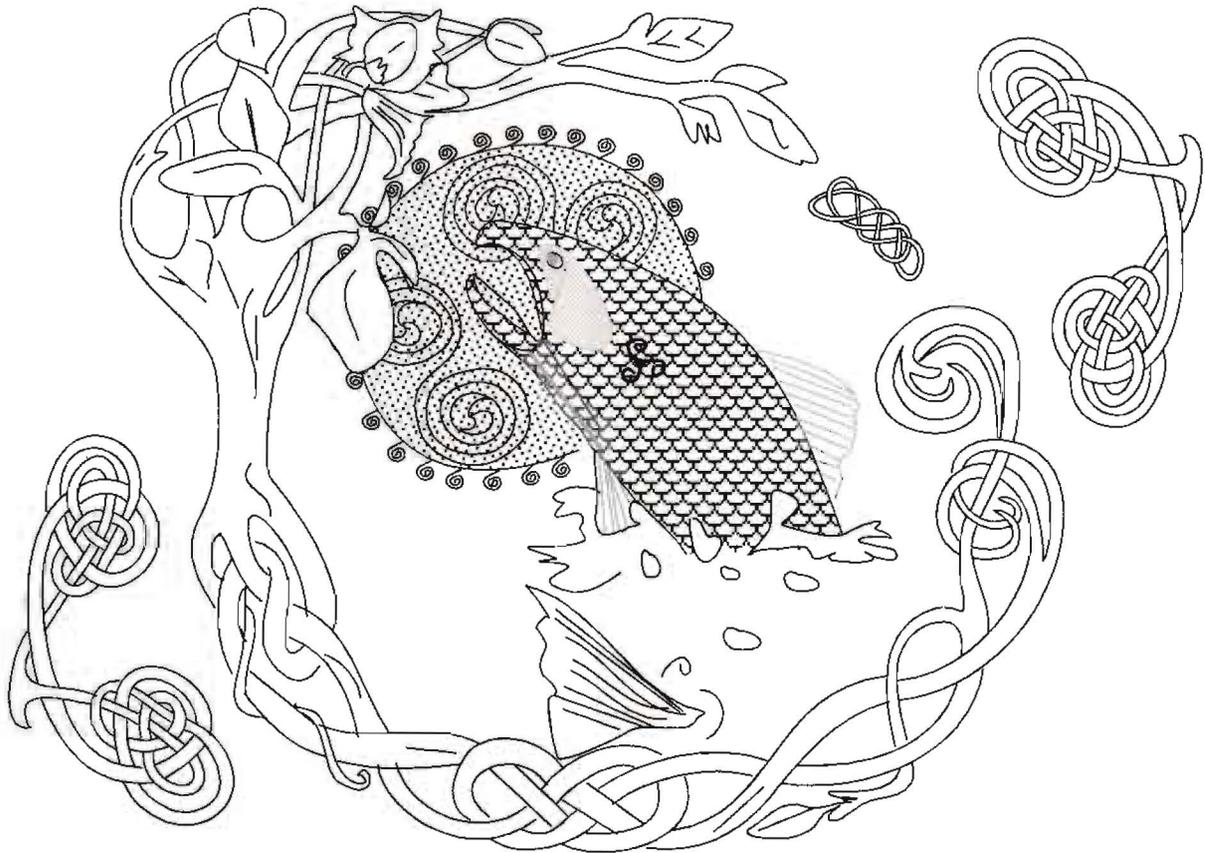


the hand as a torus
with grasp and handedness
(prehension and chirality)





Knottedness is the natural complication of toroidal topology. Traditional art often refers to knots and tangles. The pagan Celts were especially fond of sweet knottings.



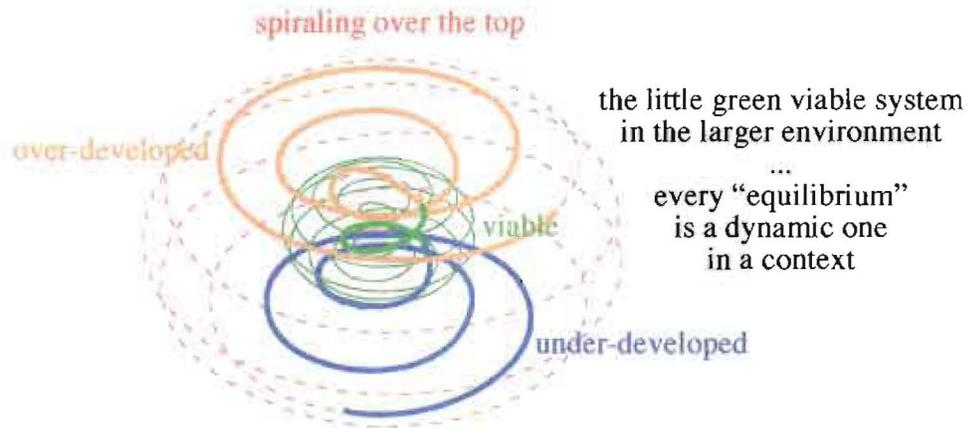
knotted whole

In the abstract it is apparent that things can be knotted through as well as knotted up.

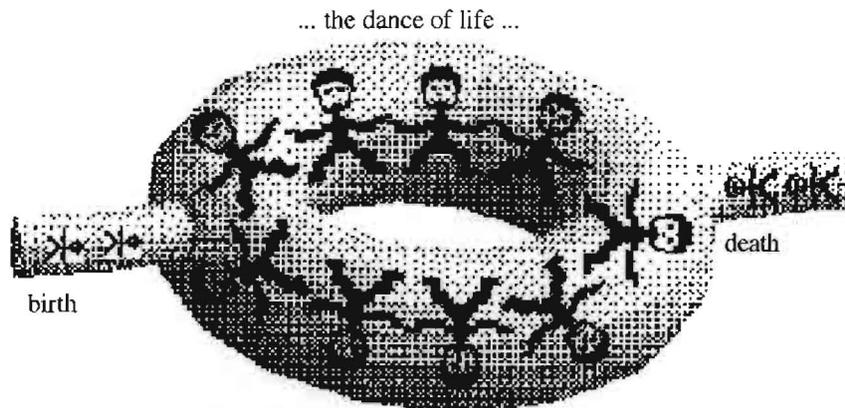


knotted hole

Some Ostensive Metaphors

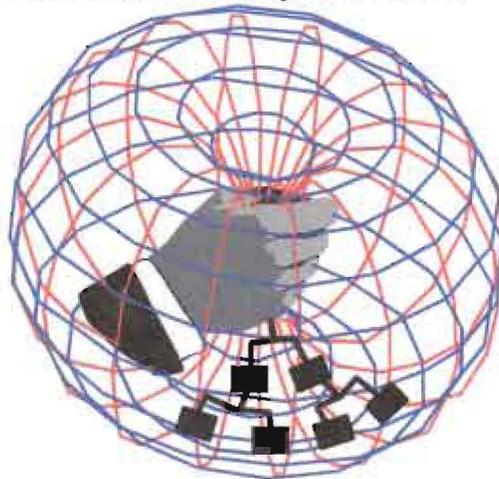


some places to be and not to be

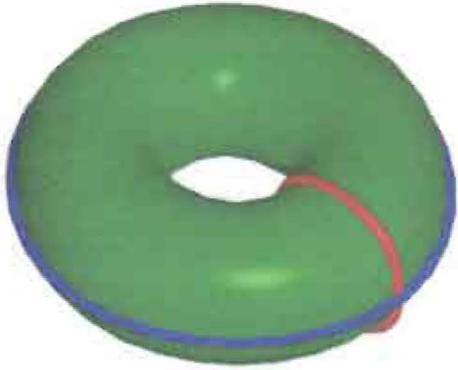


plunge in head first and get carried away feet first

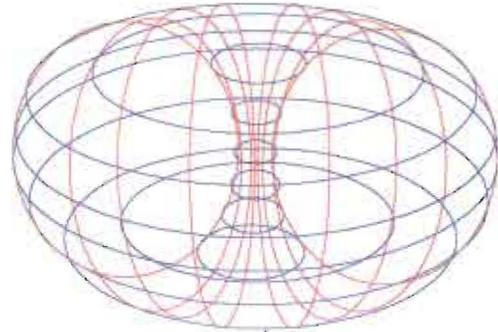
a grasp of hierarchy
traced within a toroidal heterarchy as a whole
which constitutes the system as a hole



How “orthogonal” is topological complementarity? It depends ...



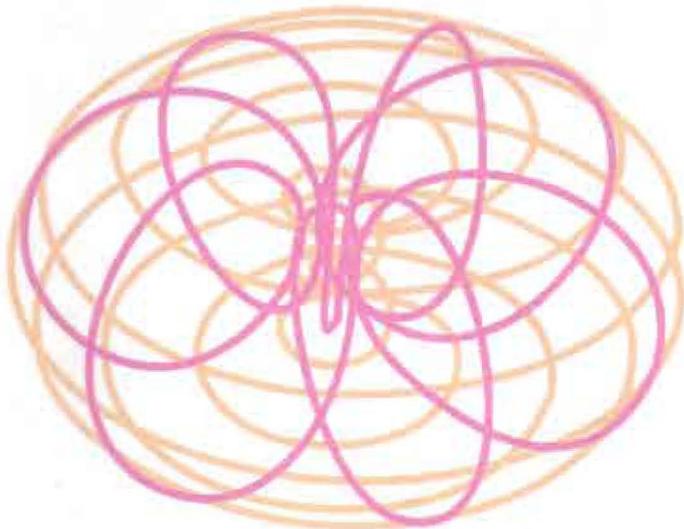
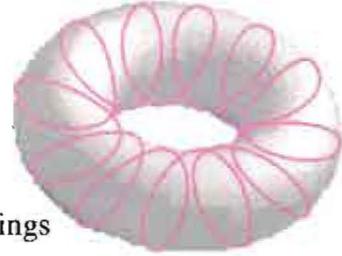
annular and **meridial** complements
as orthogonal as they can be on the torus



constitutive “orthogonal” complements together



alternative complementary spiralings



constitutive spiraling complements together

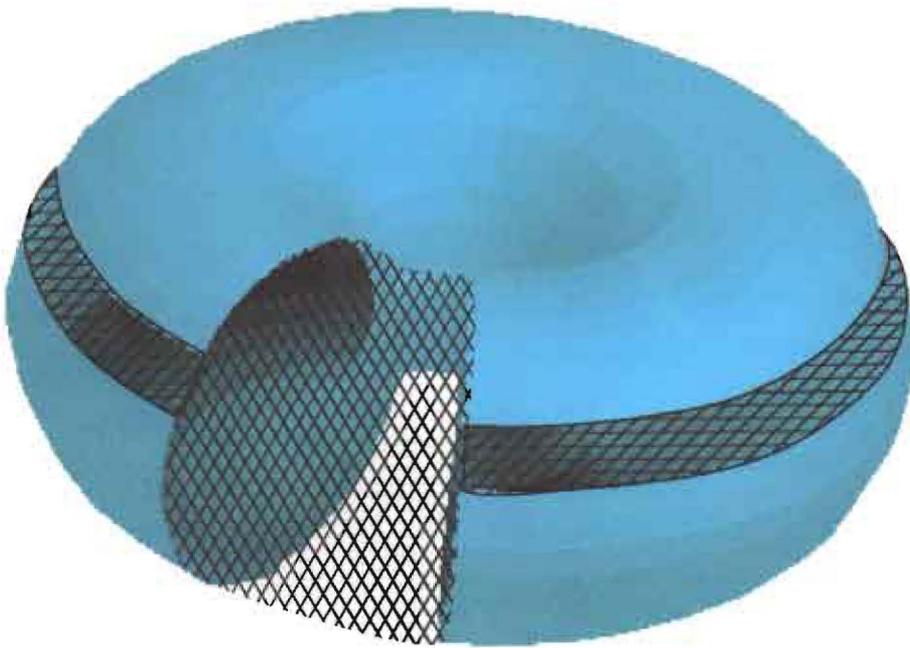


... and smoothed as a (w)hole



Ceci n'est pas une pipe, c'est une trap.

Open Closure



Maturana, von Foerster

Yin & Yang

Traced upon a torus of genus two ...
spiralling in and out through the holes.

