

The Revolution in Mapping of Science

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"The first astounding fact to emerge from all the co-citation research is that this two-dimensional model is very workable, and that is odd because one might have supposed that relationships between items of knowledge and information would be so highly complex that any order would be very multidimensional. What seems to be happening is that the first step from one dimension in the ordering of knowledge to two is so radical that higher orders merely yield slight improvement.

The mapping hypothesis is that an approximately contemporary set of units of information may be arranged on a plane so that each unit is near to those units to which it relates strongly and far from those relating weakly or not at all. It appears as if this can always be done without tearing or folding the plane and that it can even be made quantitative by a metric which relates the distance between units to the degree of relatedness between them, allowing for some reasonably small amount of random noise in the system."

"It would appear that if knowledge has a built-in system of ordering than any attempt to impose order from outside in the form of some linear system of classification must needs be run counter to it. Furthermore, if the natural order is indeed two-dimensional, then it cannot be interrogated by essentially one-dimensional indexes."