Chapter LXVIII
From Chinese Philosophy to Knowledge Discovery in Databases:
A Case Study: Scientometric Analysis

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INTRODUCTION

The field of scientometrics has been looking at the identification of co-authorship through network mapping. Research on this topic focuses on the cooperation of two authors who have published papers together. However, this paper is exploring the latent association of two authors. By 'latent association', we mean that the collaboration between two researchers has not yet occurred but might very likely take place in the future. In this paper, we will aim to find out a couple of authors who have never published together and who bear similar academic interests or study similar subjects. We will also show how the concepts of Yuan (Interdependent arising), Kong (Emptiness), Shi (Energy) and Guanxi (Relationship) in Chinese philosophy contribute to understand 'latent associations'. These four Chinese concepts are the theoretical basis of this paper. By explaining one by one what each concept is about we hope to tackle the two following questions: What do those four concepts exactly tell us? And how are they linked together? Finally, we will look at the empirical case study in scientometrics. We hope to show that this application of Chinese concepts can unravel latent associations between researchers in Database.

CONCEPTUAL MODEL

The Interdependent Arising ("Yuan" in Chinese 缘)

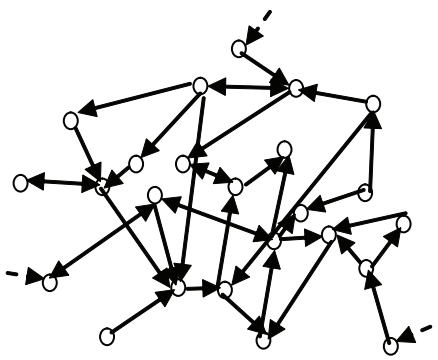
The Chinese believe that every phenomenon arise within the context of a mutually interdependent web of cause and effect as much in time as in

space. This concept is also the basis of Buddhism thought, as it is encompassed in the following classical formulation:

"When this is, that is.
From the arising of this comes the arising of that.
When this isn't, that isn't.
*From the cessation of this comes the cessation of that." (Samyutta Nikaya*雜阿含經*)*

This formulation illustrates the Asian ontology which is that everything appears only because of the arrival of its "arising dependent" (Yuan) and it exists because its "arising dependent" exists. They believe that everything is conditioned and reciprocally influenced (Lai 2003, Cai 1990, Wei 1982, Fo 1992, Duo 1996, 2006). There is nothing in the universe that can survive without its interconnection with other things. Everything depends on everything else. This interdepence forms an incredibly complex web of causation and result encompassing the three universes of foretime, present and future (Figure 1). Whatever we are in whatever form, whenever and wherever we are situated in the world, we are the elements of a connected web within a multidimensional causal nexus (of time and space). In other words, we are just the interconnected nodes of an intricate network receiving the arrows and then sending them to others.

Figure 1. Complex web of causation and result of all things



Yuan (缘) → Guanxi (in Chinese 关系)

The belief of this arising dependent (缘) has deeply influenced the Chinese people. They often conclude that something is inexplicable as a result of the arising dependent, known in Chinese as "Yuan". Two persons can know each other as a result of the Yuan. Someone who knows many people will be complimented as "you ren Yuan", means "have persons' Yuan". Owing to the Yuan's power on which the existence of everything in the word depends, the person involved in many relationships with others can become stronger. If the nodes of the Figure 1 are replaced by people, the web of causation and result of all things is translated into the web of a person's relationships. On the other hand, as the "Yuan" produces outcomes, the relationship between persons is transformed from cause->effect into relationship->outcome. Consequently a person who knows a lot of people has lots of "ren yuan". What is more, this person is more powerful when connected to other persons. He can produce many outcomes and advantages. These outcomes and advantages can also be exchanged for other favours in order to achieve certain purposes, like for example, business activities within a network of informal and interpersonal relationships (Lovette et al., 1999) called "Guanxi". Although, it is not the point to discuss in this paper the theory of Guanxi, it is not difficult to understand why Chinese people and even other East Asian people unconsciously share this same Guanxi philosophy. Guanxi is an intricate and pervasive relational network consisting of mutual obligations, assurances and understandings (Park and Luo, 2001). The source of Guanxi philosophy has its roots in the web of all arising dependent. In that respect, Guanxi can be considered as a subset of the web of Yuan (Figure 2). The whole web and its subset (Guanxi) are also mutually interdependent.