Knowledge Combinations and Research Impact:

Theoretical and Methodological Considerations

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Abstract

The synthesis of heterogeneous knowledge has long been recognized as a key driver of innovation. However, recent studies suggest that achieving high-impact research often requires balancing high novelty with strong conventionality (Uzzi et al., 2013). This is an intriguing development as previous studies of the relationships between novelty and research impact had often overlooked the need to situate novelty within conventional wisdom. Furthermore, later research pointed out that disciplinary differences in the relationship between the combination of novel vs. conventional knowledge and research impact (Boyack & Klavans, 2014). We proposed that one aspect of disciplinary culture that might mediate such a relationship is the degree of "mutual dependence" of a discipline, that is, the extent to which researchers depend on their peers' work for the advancement of knowledge. Disciplines characterized by high mutual dependence may place greater emphasis on conventional knowledge. Methodologically, research novelty is often measured by the rarity or unexpectedness of knowledge combined in a paper. A paper is considered novel if it can synthesize knowledge units that occur for the first time or occur rarely. At least two knowledge units have been proposed for this purpose, one relies on journals cited, and the other, the keywords or subject headings used to index the paper. Yet, so far little has been investigated how consistent the resulting novelty produced by these two types of knowledge units is. In this talk, I will share our recent efforts in exploring the disciplinary differences in the relationship between novelty and impact, as well as comparing different knowledge units to measure the novelty/conventional of a paper.