Complexity, Complexities and Complex Knowledges

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This discussion aims at exploring the consequences of the existence of different types of complexities in the study of socio-technical systems. We illustrate links between three different type of complexities, namely weak emergence in the sense of Bedau (2002), computational complexity and informational complexity. Emergence and computational complexity are closely linked, as suggested by the computational capabilities of many complex systems. Informational complexity can also been shown to play a crucial role in self-organisation, through spatial patterns of information flows for example. We postulate that complex knowledge of socio-technical systems must capture conjointly different types of complexities and their interactions, and that this property is an other expression of a necessary reflexive nature of complex knowledge.

References

Bedau, M. (2002). Downward causation and the autonomy of weak emergence. *Principia: an international journal of epistemology*, 6(1):5–50.