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## **Does Quantum Interference exist in Twitter?**

Xin Shuai, Ying Ding, Jerome Busemeyer, Yuyin Sun, Shanshan Chen, Jie Tang (Submitted on 4 Jul 2011)

It becomes more difficult to explain the social information transfer phenomena using the classic models based merely on Shannon Information Theory (SIT) and Classic Probability Theory (CPT), because the transfer process in the social world is rich of semantic and highly contextualized. This paper aims to use twitter data to explore whether the traditional models can interpret information transfer in social networks, and whether quantum-like phenomena can be spotted in social networks. Our main contributions are: (1) SIT and CPT fail to interpret the information transfer occurring in Twitter; and (2) Quantum interference exists in Twitter, and (3) a mathematical model is proposed to elucidate the spotted quantum phenomena.

Subjects: Social and Information Networks (cs.SI); Information Theory (cs.IT); Physics and

Society (physics.soc-ph)

Cite as: arXiv:1107.0681 [cs.SI]

(or arXiv:1107.0681v1 [cs.SI] for this version)

## Submission history

From: Xin Shuai [view email]

[v1] Mon, 4 Jul 2011 17:05:18 GMT (243kb,D)

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