

# Social Technical Congruence: The Link Between Social Science and Technology

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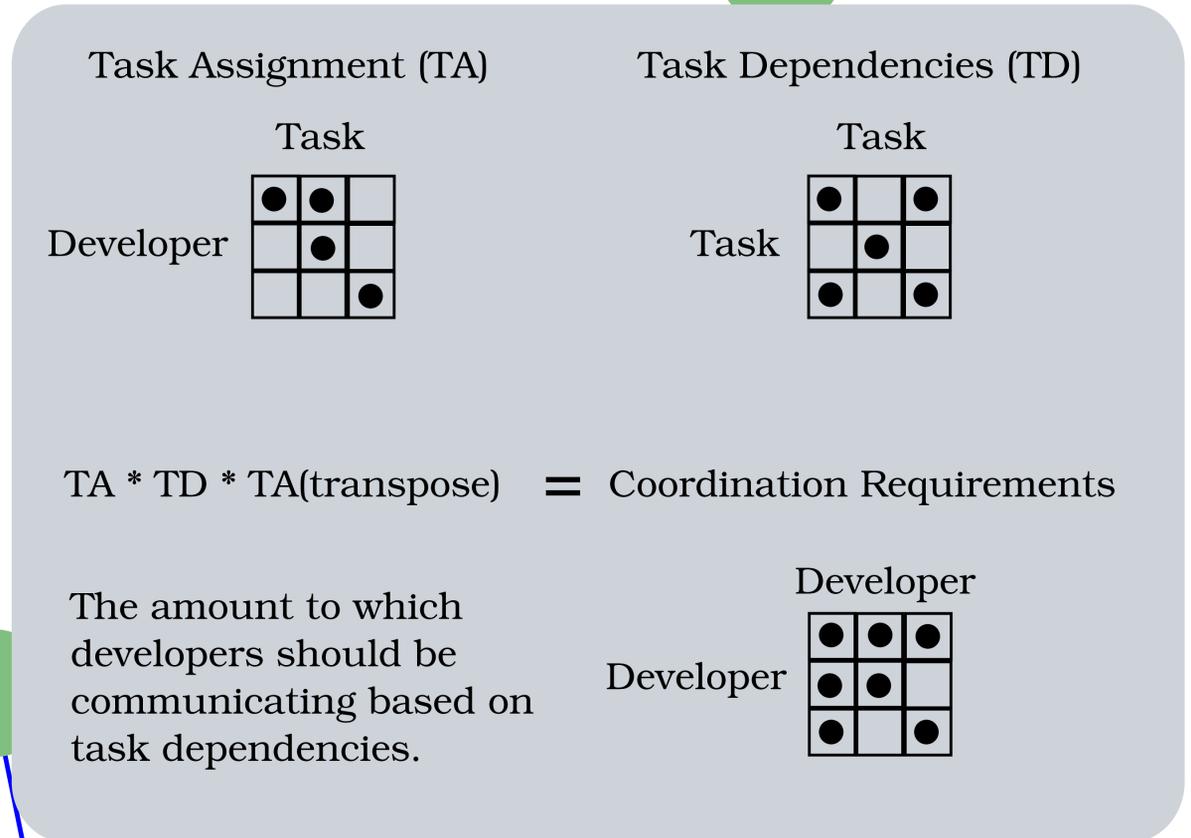
## Introduction

In Open Source software development, knowing who to communicate with as well as understanding the social and political nuances of the community is crucial. Communication is primarily text-based via email, IRC, forums and so on. This reliance on text-based communication levels the playing field for power and dominance in the group [3]. The field of Social Technical Congruence (STC) has recently developed to understand the synergies between technical development and communication [1].

## Social Technical Congruence

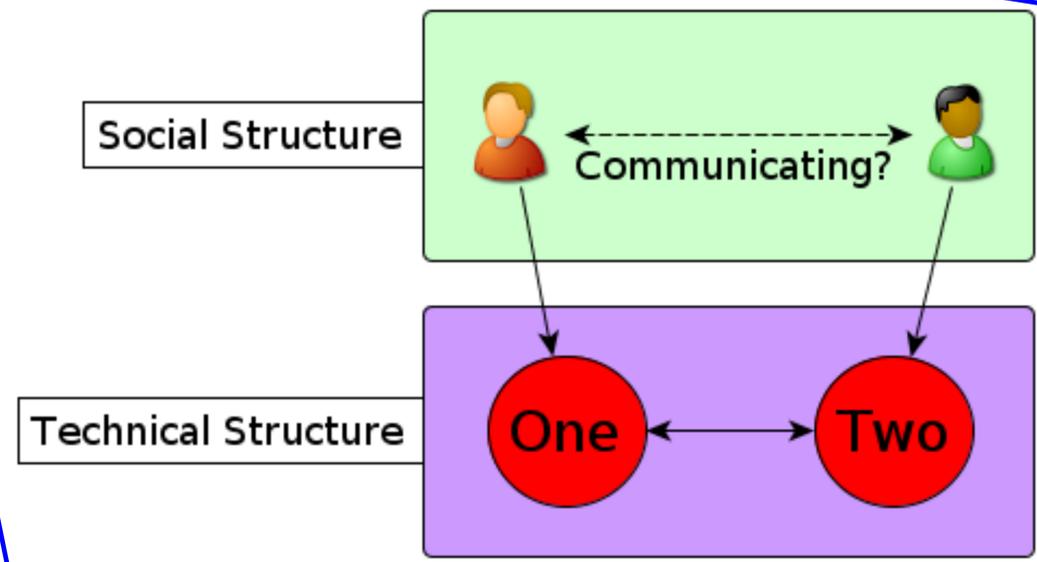
STC allows the community to create a congruence matrix using both the dependencies between code artifacts and developers as well as the dependencies between the code artifacts themselves. By comparing the expected communication with the actual communication, developers can identify missing communication. These algorithms play a key role in determining the health of a project [2]. This constant shift of both developers, communication, and code structure results in a highly dynamic complex system.

"Who should I ask about this feature?"  
?  
?  
?  
"What has changed recently?"  
?  
"I want to join this community, where do I start?"



## Research Potential

- User study
  - Focus on new developers
  - Socialization
- Datamining
  - What other data can be gathered?
- Improve congruence algorithms
  - Add temporal information
- Tool creation
  - Information for new users
  - Improve socialization process



[1] Cataldo, M., Wagstrom, P. A., Herbsleb, J. D., & Carley, K. M. (2006). Identification of coordination requirements. Proceedings of the 2006 20th anniversary conference on Computer supported cooperative work - CSCW '06, 353. New York, New York, USA: ACM Press.

[2] Sack, W., Detienne, F, Ducheneaut, N., Burkhardt, J., Mehendran, D., & Barcellini, F. (2006). A Methodological Framework for the Socio-Cognitive Analyses of CollaborativeDesign of Open Source Software. Computer Supported Cooperative Work, (CSCW), 15(2-3), 229-250.

[3] Sproull, L. and Kiesler, S. (1986). Reducing Social Context Cues: Electronic Mail in Organizational Communication. Management Science, 32(11):1492-1512.