



Collaboration

- Effects of Four Computer-Mediated Communications Channels on Trust Development
- Social Coding in GitHub: Transparency and Collaboration in an Open Software Repository

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Effects of Four Computer-Mediated Communications Channels on Trust Development

Bos, Nathan et. al.

Motivation

Understand the effect of different communication channels on trust development





Tasks with high stakes are affected by the communication medium

Imagine ordering 4 pizzas without giving credit card details

- Over the Phone
- Face to Face

Make it 100 pizzas:

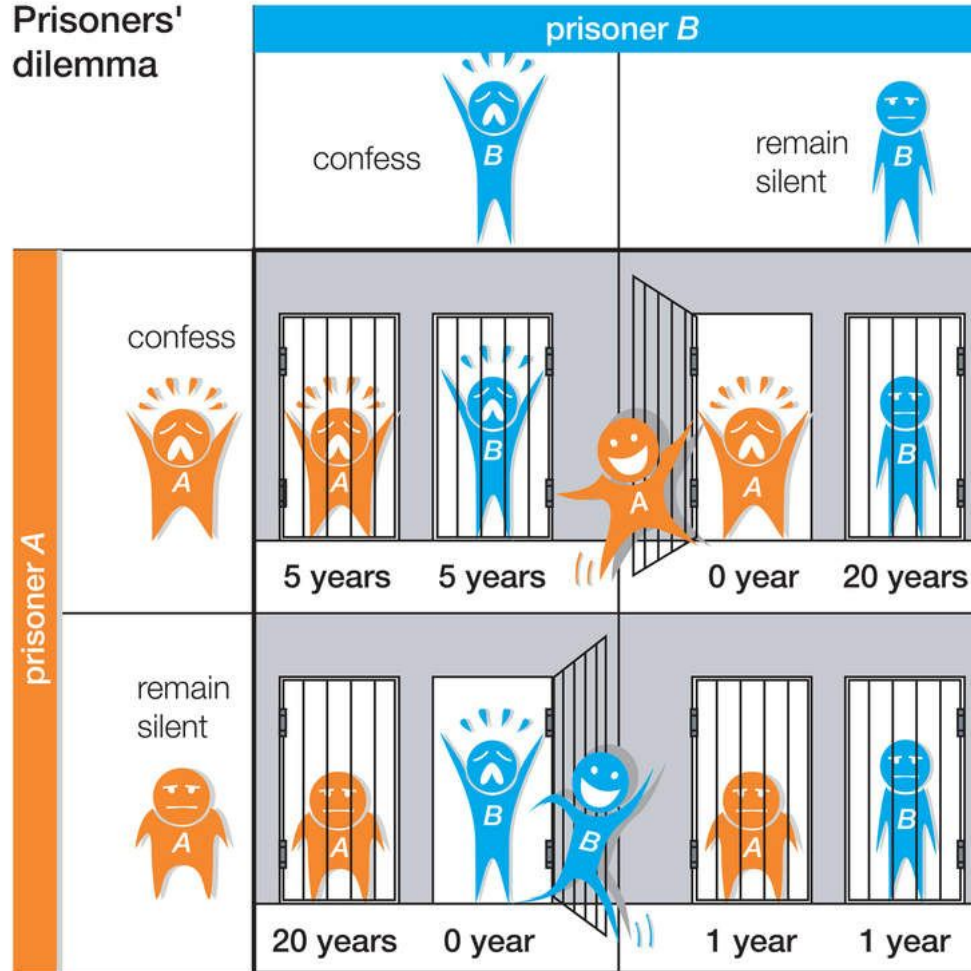
- Face to face
- What if you are a regular customer?



Social Dilemma Game as a proxy for real life interaction

Best interest of the group as a whole conflicts the best interest of an individual.

Prisoners' dilemma





Daytrader: A Social Dilemma Game

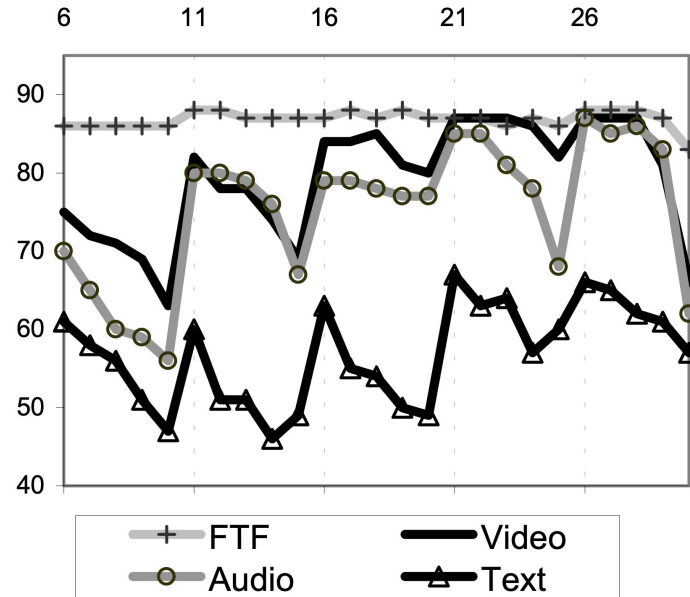
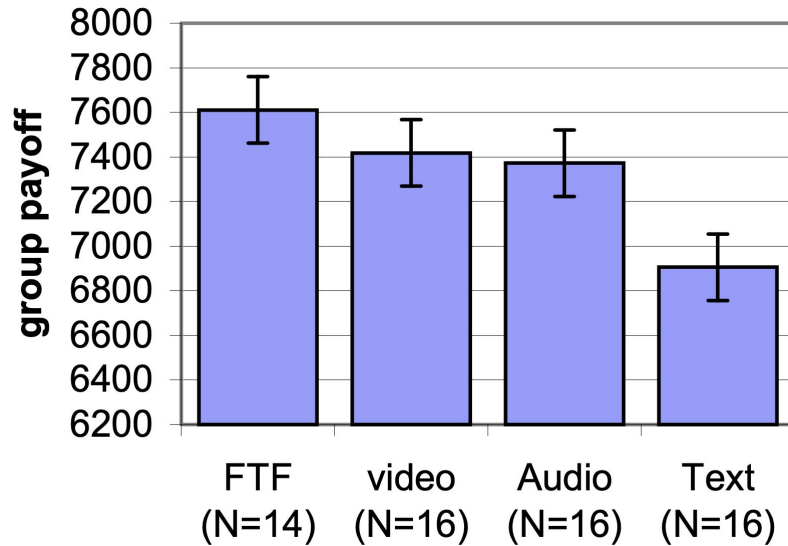
- Every player starts with 30 tokens
- Individual gets guaranteed 2x payoff
- Groups contribution is tripled and distributed equally
- Bonus of 90 tokens after every 5 rounds distributed to the player who made the most money in the previous 5 rounds.
- When players invest identical amounts for all the 5 rounds, the bonus is split equally.
- 30 such rounds



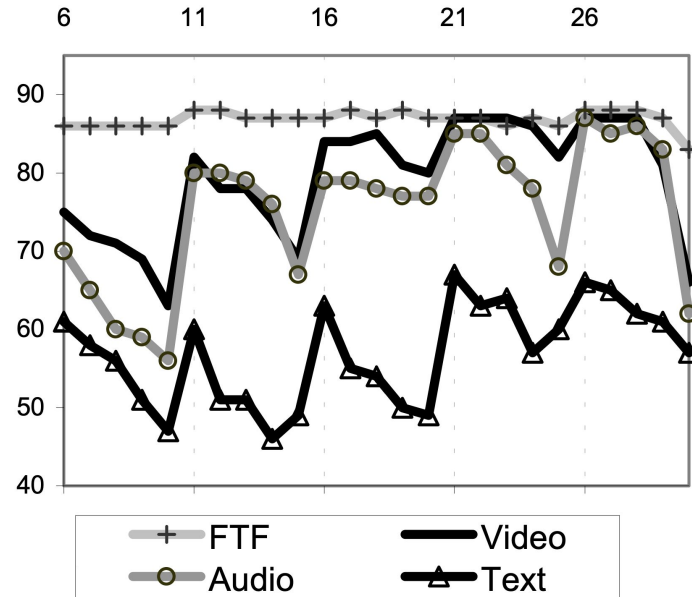
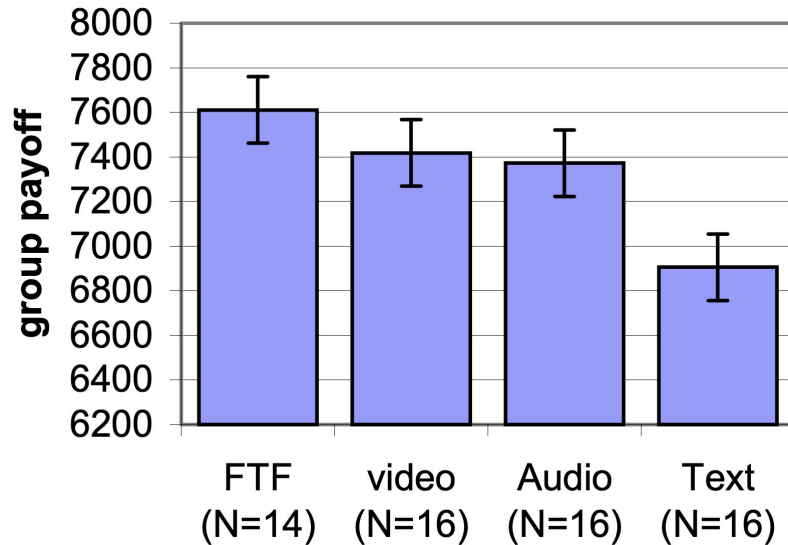
Experiment Design

- 198 Students - 105 Male, 93 Female
- 66 groups of three person each
- All the participant were unacquainted before the study, and have never interacted with each other before the study.

Result



Delayed Trust

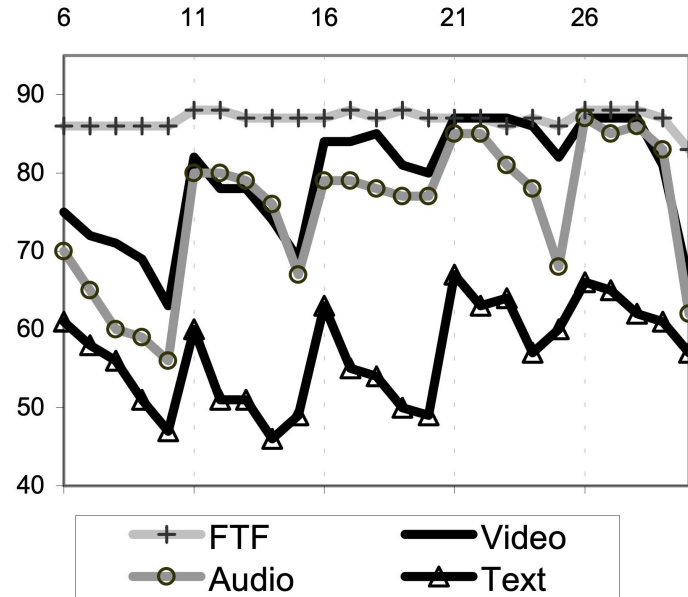
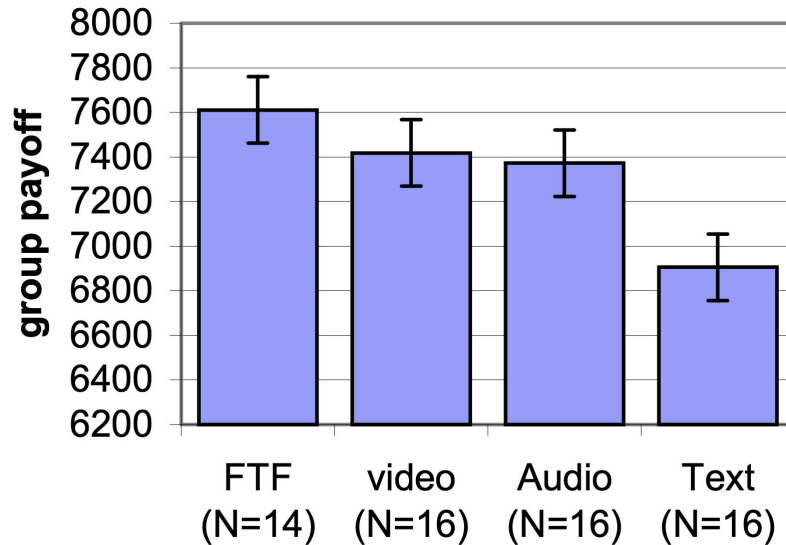




Alternatives to full cooperation

- Partial Agreement
- No cooperation - Different from deceit

Fragile Trust





Can we explain the drop offs?

Links to social deindividuation

- CMC decreases awareness of the presence of others
- Decreases the inhibitions the person feels about their own behavior

The social dilemma is a proxy for real life interactions. When does this proxy breakdown?



Discussion (1 min)



Limitations of Social Dilemma game

- Though the payoffs are real - it is a simulated environment
 - Participants know they are being watched
- Payoff is one dimensional - just monetary gain
 - In real life the payoff is multidimensional: reputation, social acceptability long term benefits etc
- Little to no consequences for actions

In the paper, they measure cooperation through the game and claim that trust is dependent on cooperation.

Are the instances where trust and cooperation are not related?



Discussion (1 min)

Why couldn't we derive a statistical distinction between audio and video communication channels?



Discussion (1 min)

Social Coding in GitHub: Transparency and Collaboration in an Open Software Repository

Dabbish, Laura et. al.



Objective

- What inferences do people make when transparency is integrated into a web-based workspace?
- What is the value of transparency for collaboration in knowledge-based work?



What is transparency in this article?

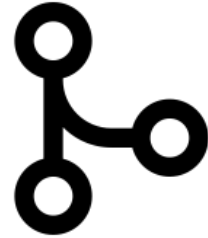
Visibility of other's action on public or shared artifacts. Essentially a digital trail.



People



Code Artifacts



Actions



Experiment Design

- Semi-structured interviews with 24 GitHub users.
- Participants were both Peripheral and Heavy Users (greater than 80 watchers in any project)
- Interviews were transcribed and analyzed (qualitative)



Liveliness of a project

- Commit activities and forks imply the project is alive - people are still interested.
- Stars and Watchers show how popular the project is.
- Sequence of commits can inform the direction.
- Issues and Requests can inform how invested the community is.



Developer cues

- Commit history shows intentions and interest, role in the project
- Contributions over all the projects show competence
- Number of followers signify the status in the community



Personal Relevance

- Issue / Bug submissions, Feature requests - potential contribution opportunities
- Actions on Dependencies - commits, bugs

In open source projects, communication channel is asynchronous and primarily text based. In the previous paper, text had the least trust among all the four communication mediums.

How do they develop trust in this scenario?



Discussion (1 min)



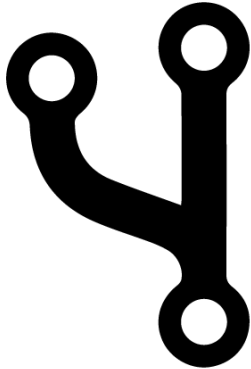
Knowledge-based trust

Trust is based upon the prior history of transaction - fueled by visible information about the developers like commit history and project involvement



Transparency to coexist

“Visibility across forks of a project tool the pressure off of project owners to accept all changes and allowed niche versions of a project to co-exist with the official release”





Learning through Direct Feedback

Developers learned from others through direct interaction like comments on pull requests - got feedback from more experienced developers

Open source projects outside GitHub, also has RTC and mailing lists. This is enabled in GitHub through third party tools like Gitter.

Transparency vs. Privacy

“It’s like being on stage, you don’t want to mess up, you’re giving it your best, you’ve got your hollywood smile”

Discussion (1 min)



Visibility across micro-supply chain

Projects evolve to become more general as a function of micro-supply chain. Visibility ensures clear understanding of needs.

As user needs vary, the projects change direction. If there are tangential demands, the project is forked and proceeds in different direction. Transparency also helps collaboration in between these forks.



Communication occurs when transparency breaks down

People seemed to work with little direct interaction until there was certain information developers couldn't directly observe - problematic change, issues in pull request.

Direct communication acted as mutual adjustment. Passive activity traces aren't powerful enough for joint actions - lack of feedback or interactivity.



Signals of Attention builds community

Signals (activity traces) gave some users higher status indicating community approval or admiration.

These signals also gives developer the meaning that someone cared about what they were doing.

These signals create a feedback loop of motivation which helps build a strong community.

GitHub is a public network. Imagine a social network within a huge organization like Microsoft.

What kind of cues do you think will help collaboration in an organization?



Discussion (1 min)

Thank you

