Reinventing trust, collaboration and compliance in social systems

Abstract
The objective of this paper is to set the research agenda for a workshop focusing on novel approaches to supporting trust, collaboration, and compliance in social systems. Suggested approaches are: self-awareness, reparative and social recommender mechanisms.

Keywords
Trust, Collaboration, Cooperation, Novel mechanisms

ACM Classification Keywords
H5.3: Group and Organization Interfaces: CSCW

Introduction
There are many reasons that motivate a research focus on trust and cooperation [1]. First – on a macro-level – there is ample evidence in the social sciences that societies and groups with higher levels of social capital and trust are more productive and maintain more stable relationships. On an individual level, these measures also correlate positively with happiness and even health [2]. A particular concern in the fields of computer-mediated communication (CMC) and human computer interaction (HCI) is that the increase in mediated interactions may result in lower odds for building trust. There is a wealth of experimental evidence which shows that interactions via digital channels can result in undesirable effects such as lower norm-compliance, more egotistic behaviour, and a
decrease in trust and cooperation, when compared to face-to-face encounters.

**Current approaches**

Responding to this situation, researchers and designers of social systems investigated ways of increasing a system's capacity for fostering trust and cooperation.

*Policing* mechanisms are the most costly approach as they commonly rely on human intervention and thus do not scale well. *Stable identities*, utilizing offline identities or pseudonyms, are frequently mentioned as a way of overcoming the disinhibiting effect of anonymity and its subsequent negative effects on cooperative behaviour. However, anonymity also has several desirable affordances, such as privacy. *Reputation systems* are an area that has received the most research attention recently. However, reputation systems also pose certain limitations: they rely on users’ willingness to provide truthful and accurate feedback; in order to be effective, the reputation system has to first gain the user’s trust; and reputation systems can be abused by malevolent users who “cash in” on good reputations. Finally, researchers have also investigated the effects of *rich channels* (e.g. video, audio, avatars) on trust and cooperation. While many researchers agree that the media channel has an impact on communication, clear design recommendations are difficult to attain due to the effects of contextual factors (e.g. tasks, goals, group size). And although many studies show that richer representations result in higher rates of trust and cooperation, they rarely investigate the specific functions afforded by rich representations (such as e.g. visual identification and loss of anonymity).

**Examples of novel approaches**

Three examples of novel approaches that, in our view, offer promising research directions are discussed: *self-awareness*, *reparative* and *social recommender mechanisms*. Workshop participants are encouraged to nominate further under-utilized and novel approaches.

*Self-awareness mechanisms*

Human societies offer a set of norms that its members are expected to adhere to. When a member violates a norm, there are practical consequences (e.g. expulsion from the community) that follow, as well as emotional consequences (e.g. shame and embarrassment). The experience of the emotional consequences that follow norm-violating acts has been repeatedly shown to be more acute when self-awareness is increased [7]. As a result of this, in face-to-face communication, people avoid the experience of shameful and embarrassing acts by putting effort into the image they project and maintain to others. In online communications, however, the salience of awareness that is otherwise created by physical and social cues (e.g. facial and corporal expressions) is reduced, possibly resulting in a sense of deindividuation. As a result, online, the emotional consequences that usually follow norm violations may not be experienced as acutely, offering fewer incentives for compliance and trustworthy behavior.

Some researchers have increased the sense of self-awareness online with the use of true identities and richer media, where members are identified by their offline properties. However, the reduction of those properties is inherent to CMC and as such, has resulted in a number of benefits (e.g. [6]). Consequently, while the anonymity and the limited capacity of technology to transfer cues has been beneficial, it has also reduced
the salience of self-awareness that regulates behavior in the physical world. Hence, there is a need to find novel ways of eliciting self-awareness without compromising the benefits of anonymity. Interesting approaches include avatars or social proxies as well as other visualizations [2],[3].

Reparative mechanisms
Online human policing has been replaced by reputation systems that collect, aggregate, and distribute users’ feedback about others’ past behavior. These mechanisms have empowered members of online communities, by allowing them to appraise their fellow members’ actions (e.g. through ratings). In doing so, they have placed emphasis and value on the quantitative appraisal that usually follows a norm violation while neglecting to account for the qualitative appraisal that often makes repair between two members possible. In human-human interactions, a violation of norms and standards is unavoidable but not unforgivable [6].

There are strong incentives for considering forgiveness as a possible reparative mechanism in online environments. For example, the act of issuing forgiveness alone is known to stimulate the offender into voluntary actions of repair. Moreover, punishing the offender for a low intent action (e.g. bad ratings for accidentally delivering the wrong product) will often result in anger and future low-compliance behaviors. In the context of online communities this could possibly motivate the member to withdraw from the community due to the unjust treatment. Finally, forgiveness often provides closure, which may alleviate the anger that has resulted from a disrupted interaction.

Factors that motivate forgiveness include: the severity of the violation, frequency of past acts, one’s intent, efforts to reverse the harm done, apologies offered, prior commitment with the offender and empathy felt towards them. To conclude, although emotion researchers have repeatedly shown the many benefits of forgiveness, few social systems support this common human action. There is therefore a need to consider how the design of social systems can support and encourage forgiveness.

Social recommender mechanisms
While it is difficult to predict attraction or friendship formation on an individual level, a stable finding from social psychology is that similarity on socio-demographic attributes is a key determinant for whether we get along with others or not. Along those lines, there is also evidence that similarity in values and norms predicts trust and cooperation. This view suggests that, rather than enforcing norms that have been agreed a priori, designers of many social systems can improve trust and cooperation by ensuring that individuals with similar norms and values are matched.

Let us consider online gaming systems where players differ significantly in playing style. While some players find an aggressive gaming style fun, others prefer not to be subjected to it. Similarly, in taste domains, such as films or music, there is no objectively correct recommendation. Rather, the value lies in the appropriate matching of the recommender and recommendee [1]. Hence, this approach focuses on how the perceived level of norm-compliant behaviour can be increased by appropriately matching members of the system who share similar or homogeneous values.
**User-centered design methods**

Above we sketched out three novel mechanisms towards supporting trust and cooperation in social systems. While this approach is theory-led, drawing on findings in disciplines outside HCI and CMC, we want to emphasize the need to learn from carefully observing existing social systems. Controlled experiments, ethnographic research, and interviews – amongst others – are important methods in the tool-box of user-centered design that should also drive new developments in social systems design. For this reason, we encourage contributions that discuss the use of user-centered design tools in the creation of social systems.

**Workshop goals**

In this abstract, we sketched out three novel avenues for research and design in social systems: self-awareness, repair and social recommendations. We went on to advocate the need for user-centered approaches in creating these systems. The workshop aspires to bring these themes together while encouraging participants to suggest further novel approaches to supporting trust, cooperation, and compliance online. Through this venue we aim to achieve the following objectives:

- Detail the requirements for novel mechanisms based on research in the social sciences and with case studies taken from existing systems
- Propose research and design directions for these novel mechanisms
- Found a community concerned with novel mechanisms to trust and collaboration that will continue beyond the realm of this workshop.

**Citations**


