



## Social influence in trustors' neighbourhoods



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### ABSTRACT

We offer new and clean evidence that social interactions impact on individuals' choices. In an experimental trust game we study whether and how trustor's behaviour is affected by social influence of other trustors' choices over time. We account for three important factors of trustors' preferences: risk attitude, generosity and expected trustworthiness. Our results confirm that trustor's behaviour is affected by peers. We find a general convergence in trusting behaviour: the effect of social influence is (for most of subjects) significantly reducing the amount sent by trustors in each period. Furthermore, analyzing contagion within the neighbourhoods, we find that agents tend to imitate similar types ((un)generous or (un)trusting) when placed in the same neighbourhood. Indeed – in the few neighbourhoods with a prevalence of generous and risk-loving subjects – trust substantially increases over time. Nearness, without any strategic component, is a clear element of contagion in trustors' behaviour.

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### 1. Introduction

The aim of this paper is to study the impact of social influence on individuals' trusting behaviour. As noted in Fehr (2009), "Trust plays a role in almost all human relationships. . . Trust also seems particularly important in economic exchanges because it seems obvious that the absence of trust among trading partners severely hampers market transactions. . ."

The basic objective is to clearly identify the determinants of trusting behaviour in market transactions, as social motivations are mixed with standard profit motivations that are generally examined in all economic exchanges. In the vast experimental and economic literature where trusting behaviour has been analysed, several contributions stress the relationship between sociality and trust. For example, Berg, Dickhaut, and McCabe (1995) find that social history is important in that under particular conditions trust and reciprocity are stronger when individuals can observe peers' behaviour. Indeed, in the absence of rewards and sanctions,

endogenous social norms can emerge if individuals clearly identify with a group. Accordingly, social history, by providing common information on the use of trust in groups, may increase social identity.

Recently, a number of experimental papers have focused on the effects of peer influence on behaviour in economic environments, an area that had not previously received attention. Similar to our research work, an example of analysis of peer effects in the Trust Game is presented by Mittone and Ploner (2011). Their paper focuses on the behaviour of receivers and studies the effects of peer pressure (when the receivers' choices are being observed by other players) and the effect of social spillovers (when the interaction between trustees' choices is observed). They find that peer pressure has a positive effect on reciprocity and – to a lesser extent – so do social spillovers. A direct observation of peer actions is also examined by Falk and Ichino (2006), who find clear signs of social influence among workers engaged in the same task. Gaechter, Nosenzo, and Sefton (2012) find that information regarding the reciprocal behaviour of peers affects the individual's level of reciprocity in a gift exchange game. Finally, Falk, Fishbacher, and Gaechter (2013) find that individuals adapt their behaviour to the neighbourhood to which they are randomly allocated in coordination and public good games. The interesting point made by these studies is not only that price or consumption strategies may be affected by peer pressure, but also that reciprocity, trust,

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cooperation and work efforts are influenced by either “convergence or dispersion of behaviour” in social networks and among groups of individuals.

Studies on social influence in strategic settings (the dictator game) have been conducted by [Cason and Mui \(1998\)](#) and [Servatka \(2009\)](#). In the latter research, the author focuses on the correct identification of social influence (i.e., how the proposer’s behaviour is determined by the respondent’s observed level of generosity) thus separating this aspect from reputational effects that exist in game theoretical models. Finally, in a recent paper, [Deck and Nikiforakis \(2012\)](#) analyse whether observation of peers’ actions accelerates the convergence to the payoff dominant equilibrium in a minimum-effort game. The authors devise two different types of observation of peers: perfect and imperfect monitoring. Under perfect monitoring (players are able to observe all peers’ actions in real time), there is a clear effect on the equilibrium selection. Under imperfect monitoring (players observe only their neighbours), the effect is minimal. The authors argue that uncertainty may play an important role in determining the opposite results.

Our experiment is also connected to two rather close research areas in which the individuals’ choices are affected by other subjects’ decisions. These research areas address the following: (i) the discrepancy between individual and group decisions for exactly the same game (including all the relevant parameters) and (ii) the role played by new incoming information in shaping the individuals’ choices (e.g., observations previously unavailable, advice).

With reference to the discrepancy between individual and group behaviour in games, [Kugler, Kausel, and Kocher \(2012\)](#) experimentally observe that groups behave closer to the game-theoretical assumption of rationality and selfishness than individuals: the authors compare the behaviour of groups and individuals in a two-person trust game and find that groups of senders send smaller amounts of tokens than individuals. [Charness and Sutter \(2012\)](#), upon reviewing the literature regarding individual decision making in situations with salient group membership, observe that, in most of the experiments, groups are generally more selfish than individuals.

The relevance of new information received by the decision maker is the focus of another research area that focuses on the modification of choices after observing peers and/or after receiving advice from peers.

[Schotter and Sopher \(2006\)](#) investigate the development of the following conventions of trust: (i) people receive advice from those that made the same decision before them in an intergenerational game and (ii) advice facilitates the creation of a convention of behaviour and decreases the amount of trust. [Chaudhuri, Graziano, and Maitra \(2006\)](#) study a linear public good game with advice (via free-form messages) being passed from one generation to the succeeding generation. Such advice may consist of private knowledge, public knowledge or common knowledge. Common knowledge leads to subjects leaving more “exhortative” advice and thereby generates a process of social learning. [Sbriglia \(2008\)](#) examines the role of advice in p-beauty contest games and finds that messages from winning players accelerate individual learning.

Though the importance of peer influence has been widely investigated, there is no previous research which tries to ascertain the causal relationship between social influence and trust. Specifically, there are three research questions motivating our study. Our first aim consists of determining whether trust is affected by peer influence in neighbourhoods of trustors engaged in the repeated playing of different trust games. Second, in the case of convergence of behaviour over time, we assess whether social influence produces an increase (or a decrease) in the overall level of trust. Finally, a

novel feature of the research consists in studying whether and how the individual’s inner preference for trust (i.e., risk aversion and generosity) affects the individual’s propensity to imitate others’ behaviour.

Our approach is closer to that adopted by [Fortin, Lacroix, and Villeval \(2007\)](#). Their paper focuses on the relationship between social interactions and tax evasion in a repeated public good game. Here, groups of subjects play a repeated public good game where there is a probability of auditing and where they can observe the behaviour of the other components of the group over time. As in our experiments, the sessions are divided into a “NO-INFO” category and an “INFO” category, based on whether or not the subjects are informed about the others’ behaviour, to measure the effect of sociality on the individuals’ choices.

Evaluating social influence is not an easy task. As detailed in [Manski \(1993\)](#), the identification of peer effects involves controlling several confounding factors. These include the following: (i) the self-selection of individuals into homogeneous groups as observed correlation in individuals’ actions may reflect individuals’ similar preferences rather than a causal effect of one’s action on another; (ii) the exogenous (contextual) effects as individual behaviour may vary according to the socio-economic characteristics of different groups; (iii) the correlated unobservable that might influence all group members in a similar way, as individuals in a given group may behave similarly because either they have similar characteristics or they face a similar institutional environment.

Even if several studies based on observational data have made important steps towards the solution of such problems (i.e., [Sacerdote, 2001](#)), many authors (i.e., [Falk and Ichino, 2006](#); [Falk, Fishbacher, and Gaechter, 2013](#); [Hartmann et al., 2007](#)) emphasise the possibility to better determine the existence of peer effects in a fully controlled context with laboratory experiments. The experiment in this paper circumvents the problems related to the identification of peer effects as follows: (i) subjects are randomly assigned to different neighbourhoods; (ii) contextual effects do not occur as interactions are anonymous, and correlated effects are overcome because subjects face the same context (they all have equal economic incentives and share equal information); (iii) we explicitly check for correlated effects either due to experience and strategic learning variations during the trust game or due to homogenous trustors’ characteristics.

As in [Ashraf, Bohnet, and Piankov \(2006\)](#) and [Chaudhuri and Gangadharan \(2007\)](#), information on subjects’ characteristics and trust attitude (i.e., risk attitude, social preferences, socio-demographic characteristics, and beliefs about the behaviour of the trustees) are drawn through the following: (i) a dictator game, (ii) a questionnaire, and (iii) the lottery method suggested by [Holt and Laury \(2002\)](#). Because of the random group formation, these characteristics are exogenous, which enables us to investigate whether specific types of agents (i.e., generous or untrusting) are more likely to trust and imitate similar types (i.e., because they observe a behaviour consistent with their own preferences).

Our findings show that there is a convergence in trusting behaviour in most neighbourhoods, and the effect of social influence is (in the majority of the cases) to significantly reduce the number of tokens sent by trustors in each period. Furthermore, by analysing contagion within the neighbourhoods, we find that agents tend to imitate similar types when placed in the same neighbourhood. Indeed, in those few groups with a majority of generous and risk-loving subjects, trust substantially increases over time.

This paper is organised as follows. Section 2 presents the behavioural hypotheses and our experimental design, while Sections 3 and 4 describe our empirical findings. Section 5 provides conclusions and possible extensions.

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