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Working Paper

The Effect of Communication Channels on Promise-Making and Promise-Keeping

IZA Discussion Papers, No. 8534

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: Conrads, Julian; Reggiani, Tommaso (2014) : The Effect of Communication Channels on Promise-Making and Promise-Keeping, IZA Discussion Papers, No. 8534, Institute for the Study of Labor (IZA), Bonn

This Version is available at:

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IZA DP No. 8534

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October 2014

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Discussion Paper No. 8534

October 2014

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ABSTRACT

The Effect of Communication Channels on Promise-Making and Promise-Keeping^{*}

This paper investigates the effect of different communication channels on promise-making and promise-keeping in a helping situation. Four treatments differ with respect to the communication channel employed to solicit unincentivized cooperation, i.e., face-to-face, phone call and two different sorts of computer-mediated communication. The less anonymous (face-to-face, phone) the interpersonal interaction is due to the different communication channels, the higher the propensity of an agent to make a promise. Treatment effects, however, vanish if we then look at the actual promise-keeping rates across treatments as more anonymous channels (computer-mediated) do not perform relatively worse than more direct channels.

JEL Classification: D02, D83, C91

Keywords: promises, communication, experimental economics, organizational behavior, behavioral ethics

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^{*} We would like to thank financial support from the Deutsche Forschungsgemeinschaft through grant “TP3: Design of Incentive Schemes within Firms: Bonus Systems and Performance Evaluation” (subproject of the DFG-Forschergruppe “Design and Behavior”, FOR 1371) and through the Leibniz-Award to Axel Ockenfels is gratefully acknowledged. We thank Katrin Recktenwald for excellent research assistance, Michèle Belot, Cristina Bicchieri, Bernd Irlenbusch, Patrick Kampkötter, Andrew Kinder, Rainer Michael Rilke, Alessandro Saia, Rupert Sausgruber, Shaul Shalvi, Janna Ter Meer for comments and suggestions.

1 Introduction

In modern organizations, new communication channels are reshaping the way in which people get in touch and interact. Emails, doodle polls, chat rooms, and conference calls are replacing face-to-face interactions in many situations. At the same time, non-binding and spontaneous cooperation between members of the staff has become a key factor in dealing with the increasing complexity and of modern organizations (Walther, 2011). In addition to that, given the increasing size of corporations (e.g., in multinational companies), it is not infrequent to get spontaneous requests for help from staff members that are complete strangers, maybe sitting in the opposite corner of the world. Ellingsen and Johannesson (2004) found that just a simple indirect and anonymous written communication helps to reinforce promise-keeping in a stylized *hold-up problem* (gain-from-trade set-up). However, in their conclusions they asked themselves “*How would behavior¹ be affected if interactions were oral and face-to-face rather than written and anonymous?*” (pp. 417-418). With our experimental study we aim to address this specific question raised by Ellingsen and Johannesson (2004).²

In other fields of social interactions the effects of different channels of communication have already been analyzed. Brosig, Weimann, and Ockenfels (2003), for example, examine the effects of different communication channels on cooperation in several standard public good games. The authors vary the communication channel applied in pre-play communication, e.g., auditory or visual channels, either bidirectional or unidirectional. They find that bidirectional face-to-face communication is crucial for enhancing cooperation (see also Bicchieri and Lev-On, 2007). Valley, Moag, and Bazerman (1998) study a bilateral negotiation game with asymmetric information, finding different degrees of trust, truth-telling and efficiency across communication channels. Higher levels of truth-telling allow subjects negotiating face-to-face to achieve higher joint benefits than those negotiating by telephone or in writing. Hoffman, McCabe, and Smith (1996) and Bohnet and Frey (1999) assume that decreasing social distance increases pro-social behavior in dictator games. The latter authors argue that identification of the “other” causes more prosociality (see also Charness and Gneezy, 2008; Gächter and Fehr, 1999).

We investigate the effects of alternative channels on promise-making and promise-keeping. While Ellingsen and Johannesson (2004) analyzed promises in a very

¹Here “behavior” refers to promise-keeping.

²The same paper has inspired the most recent experimental research on promises, such as Charness and Dufwenberg (2006) and Vanberg (2008).

abstract environment, we opted for a less stylized set-up that better resembled a realistic organizational context where a broken promise can be a source of direct costs as well as delays or frictions in the organizational flow. Our laboratory experiment employs a simple promise-making/promise-keeping task, in which subjects are asked about their willingness to voluntarily commit to taking part in a short online survey for scientific purposes within the next 24 hours without monetary compensation. A baseline face-to-face interaction is compared to a phone call, a computer-mediated interaction “office”, and a further computer-mediated interaction “remote”, i.e., online.³ Under face-to-face and phone call conditions - which are distinguished by a synchronous and non-anonymous interaction between the parties - promise-making rates proved to be significantly higher than under the two non-synchronous and anonymous computer-mediated conditions. Despite these differences in promise-making, no significant differences in promise-keeping rates were observed across treatments.

The paper is organized as follows: Section 2 introduces the experimental design; testable hypotheses are derived in section 3 in the light of the technical features of the different communication channels; results are presented in section 4 and final considerations are found in section 5.

2 Experimental Design

The experiment employed a simple task such that both promise-making and promise-keeping could be tracked and matched. No fixed nor contingent incentive was at stake since we are interested in studying promise-making and promise-keeping not in a “contractual”⁴ setting but in a more genuine “helping”⁵ setting. After an unrelated experimental task (see Conrads, 2014),⁶ subjects were asked for their willingness to voluntarily commit or not in participating in a short online

³This treatment reproduces either a freelance working relationship or interaction with a colleague within the firm who is located in an overseas office.

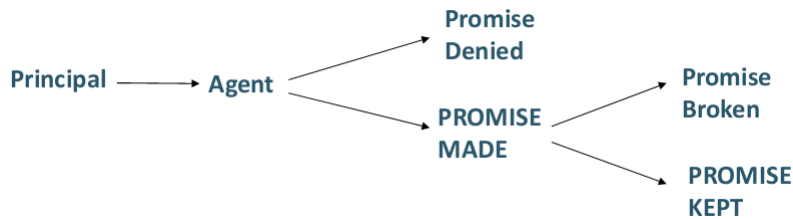
⁴E.g. Ellingsen and Johannesson (2004), Charness and Dufwenberg (2006) and Vanberg (2008).

⁵See Berger, Herberz, and Sliwka (2011) on helping behavior at the workplace.

⁶Conrads (2014) focused on the effects of different communication channels on lying behavior. We operationalized this incentivized study and added our non-incentivized promise task in the same sessions, stressing to participants that two activities were independent of one another. The promise task was not announced in advance. In the data analysis we control for subjects’ behavior in the incentivized task, which was conducted beforehand, and we do not observe any significant pattern, neither statistically nor in term of size. For further details see below.

survey for scientific purposes within the next 24 hours (starting every subsequent hour).⁷ In case a subject agreed take part in the survey, he/she received the information concerning the URL link needed to access to the online survey (see Script A.1 in the Appendix). Subjects then had one day of time to fill in the questionnaire. Thus, two variables of interest are at hand, i.e., first, whether or not a subject promises to take part in the online survey and, second, whether or not the promise is actually kept (see Figure 1 for the decision tree). We conducted this experiment directly after the independent experimental task mentioned above for two main reasons: (i) the task at hand was rather simple and quick, (ii) by design we wanted to exclude any ancillary incentive except the spontaneous propensity of the subjects to cooperate unconditionally.

Figure 1: Decision tree



Implementing a standard between-subjects design, we exogenously varied among the different treatments the communication channel used to approach the potential volunteers asking for their help. In the first treatment - *Face-to-Face* (henceforth: *F-t-F*) - subjects were approached in person by the same research assistant in their lab cabins and directly asked for cooperation in participation in the online survey. Subjects then had to report face-to-face to the research assistant about their positive or negative decision. In the second treatment - *Phone* - the very same research assistant approached the subjects through a call. Therefore each subject was equipped with a headset and headphone. By using Skype (with the video conference function turned off), subjects were called by the research assistant and asked whether they were willing to participate in the online survey. Subjects had to report via phone about their positive or negative decision. In the third treatment - *PC-Lab* - no direct verbal communication channel was adopted.

⁷The topic of the survey was about the individual perception of different NGOs in terms of trust and reputation. The content of the survey was not announced during the promise-making phase.

Subjects in this treatment were asked to state their willingness to participate in the online survey via an entry mask at their computer screens in the lab. In the forth treatment - *PC-Online* - subjects participated in an online experiment outside the lab. As in the *PC-Lab* treatment, subjects were asked (modeled after the online treatment in Conrads, 2014) to indicate their willingness to participate in the survey via an online entry mask at their computer screens but, different from *PC-Lab*, they never are present in person in the lab. A total of 242 subjects (with a mean age of 24 and 49% being female) participated in the experiment. The treatments *F-t-F*, *Phone*, and *PC-Lab* were conducted at the “elfe” laboratory of the University of Duisburg-Essen (5th, 6th, and 7th November 2013). The treatment *PC-Online* was entirely conducted online (see Table A.4 in the appendix for details on the sequence of the sessions). Subjects were recruited from a large pool of over 2,000 students of the University of Duisburg-Essen via ORSEE (Greiner, 2003).

In treatments *F-t-F*, *Phone*, and *PC-Lab* 60 subjects participated and in treatment *PC-Online* 62 subjects took part. The experiment was programmed by using the BoXS software (Seithe, 2010). Each laboratory session (*F-t-F*, *Phone* and *PC-Lab*) involved 12 participants. Approximately 30% of the participants were economics or business administration majors; the other 70% were enrolled in different fields, such as law and natural sciences. Participants in lab sessions were randomly allocated to fully-private and soundproof cabins.⁸ The content of communication was held constant in all the different treatments, i.e., independent of verbal (*F-t-F* and *Phone*) or non-verbal communication (*PC-Lab* and *PC-Online*) the same script was employed. In treatments with non-verbal communication, the identical text was applied in written form on computer screens. The exact wording adopted in all four treatments was constantly the following:

⁸This is a key technical feature of the “elfe” laboratory of the University of Duisburg-Essen. For this reason this venue is well suited to host studies focusing on communication channels.

“Independent of the previous experiment there is a five-minute online survey that you can fill in at home. You can participate in the survey within the next 24 hours. The count-down will start in 1 hour. Participation is voluntary and will not be paid. If you promise to participate, before leaving the laboratory you will receive a voucher with a link to get access to the survey. Do you want to participate in the online survey?”

In the treatments with verbal communication, i.e., *F-t-F* and *Phone* the same research assistant always communicated with the subjects.¹⁰ In case a subject agreed to take part in the online survey, a paper-based voucher with an individualized URL link to access to the survey platform was handed out before leaving the lab sessions (*F-t-F*, *Phone*, *PC-Lab*). For the *PC-Online* treatment, subjects were first approached via ORSEE to register in the online experiment by Conrads (2014). They then received the identical mask administrated under the *PC-Lab* condition in order to ask for their promise. Finally, after the online session, subjects who made the promise received the voucher via email¹¹ including the individualized URL link in order to access to the survey platform (see Script A.1 in appendix). The format of the voucher was constant across treatments.¹² In addition, on the voucher it was clearly stated that subjects could fill in the

⁹In treatment *PC-Online*, subjects were informed that they would receive an email containing an URL link to get to the survey platform (see Script. A.1 in the Appendix). In this case, the following wording was adopted “[...] *If you promise to participate, within five minutes you will receive a voucher via email with the link to access to the survey.*”

¹⁰Note that a constant female research assistant (24 years old) was intentionally chosen to communicate with the subjects because the experimenters, males and seniors, might bias subjects’ actions due to obedience or authority concerns, see Karakostas and Zizzo (2014). During the experimental sessions the subjects did not encounter any other research assistants or experimenters.

¹¹The sender was the scientific society HEIRS - Happiness, Economics and Interpersonal Relations; University of Milan-Bicocca < <http://www.heirs.it/> > < info@heirs.it >. This scientific society has no connection with the University of Duisburg-Essen. The object of the email was: “online survey access link”.

¹²In order to minimize subjects’ transaction costs, we provided shortened URLs (e.g., <http://goo.gl/s3aCrd>) that are quick and easy to type in all different internet browsers. This is also to keep the setting as constant as possible compared to the *PC-Online* treatment, where subjects received an already active URL link in the body of the emailed voucher and they just needed to click on it in order to get access to the (see Script A.1 in the appendix). Table A.3 in the appendix reports how the promptness in fulfilling the promise was not different under the alternative experimental conditions. In all the treatments it took on average 6 hour and 30 minutes before filling the survey. This result brings evidence about the fact that receiving an already “active link” (*PC-Online* treatment) does not represent an advantage in terms of promise-keeping.

online questionnaire within the next 24 hours.¹³ Due to the individualized links, it could be tracked whether subjects actually kept the promise of filling in the online survey or not.

3 Features of Communication Channels and Behavioral Hypotheses

In this paragraph, the specific features of the applied communication channels will be elaborated. After this, behavioral hypotheses will be derived, which can be scrutinized by looking at the findings of the four experimental treatments.

Social distance arguments regarding communication channels have been the subject of many studies analyzing pro-social behavior. Hoffman, McCabe, and Smith (1996) and Bohnet and Frey (1999) assume that decreasing social distance increases pro-social behavior, e.g., making and keeping a promise. Three key aspects of social distance prominently discussed in the literature may explain this increase in pro-sociality: identification, anonymity, and social norm activation. Bohnet and Frey (1999) argue that the increase in pro-sociality is due to higher degrees of *identification* in socially close interactions. Gächter and Fehr (1999) apply the converse argument and define social distance as the degree of *anonymity* within a social interaction. Socially distant interactions are characterized by a higher degree of anonymity, which may lead to less pro-social behavior. Moreover, Bicchieri and Lev-On (2007) and Schram and Charness (2011) argue that the *activation of social norms* is influenced by the social distance of an interaction. In anonymous interactions, only intrinsic moral norms to behave pro-socially are active, whereas in closer interactions both intrinsic moral norms and social norms prevail. With respect to communication, these three aspects of social distance, i.e., identification, anonymity, and social norm activation, vary in the degree to which they are prevalent under specific channels of communication. Thus, the highest degree of social distance can be assumed under online communication, whereas face-to-face communication is characterized by a high degree of social closeness.

Secondly, several rather technical features of the applied communication channels might be important with for promise making and keeping. Following Hancock,

¹³We monitored the activity of the online survey platform both before and after the provided 24 hours time window. No one visited the survey platform before the actual start (1 hour buffer time after promise-making). The survey platform was monitored during the subsequent 3 days, no one filled in the survey after the deadline.

Table 1: Characteristics of the different communication channels

	<i>F-t-F</i>	<i>Phone</i>	<i>PC-Lab</i>	<i>PC-Online</i>
Social distance	1	2	3	4
- Identification	4	3	2	1
- Anonymity	1	2	3	4
- Social norm activation	4	3	2	1
Technical Features				
- Synchronicity	✓	✓		
- Recordability			✓	✓
- Tell tale clues	✓	✓		

Notes: With respect to the aspects of social distance, 1 stands for the lowest degree and 4 for the highest degree of a respective aspect. Check marks represent the presence of a technical feature

Thom-Santelli, and Ritchie (2004), communication channels can be differentiated by their synchronicity and recordability. The synchronicity of an interaction relates to the question of whether messages can be exchanged instantaneously and in real time, as in face-to-face conversations. Recordability refers to the question of whether the content of an interaction is automatically documented, e.g., in email conversations (see also Table 1).

Thirdly, communications channels possess different degrees to which so called “tell tale clues” can be transmitted. Following Frank (1988), these clues refer to facial or verbal expressions, e.g., blushing or tone of voice, that may influence behavior. For instance, refusing a promise face-to-face might be harder since the counterpart may see the embarrassment of the refusing party. Table 1 summarizes the key features of the different communication channels with respect to the specific characteristics mentioned above.

Given the technical features of the different communication channels, two main testable hypotheses can be derived:

Hypothesis (1): More promises are made in treatments employing communication channels characterized by small social distance:

$$(F-t-F \geq Phone) > (PC-Lab \geq PC-Online)$$

Hypothesis (2): Promises are kept more often in treatments with recordable communication, since the promises made can be easily verified ex-post:

$$[(PC-Lab = PC-Online) > (Phone = F-t-F)] | Promise = 1$$

4 Results

Figure 2 depicts (see also Table 2), by treatment, the shares of subjects who made the promise to participate in the online survey and the share of subjects who actually kept the promise. Looking at the promise-making frequencies in the baseline condition $F-t-F$, 88% of the subjects made a positive promise. An almost similar share of 85% made the promise in the *Phone* condition. The proportions drop drastically to 67% and to 53% under *PC-Lab* and *PC-Online*, respectively. Despite these differences in the promise-making rates, the proportion of subjects who made the promise and actually kept it was rather constant across treatments.

Figure 2: SUMMARY GRAPH

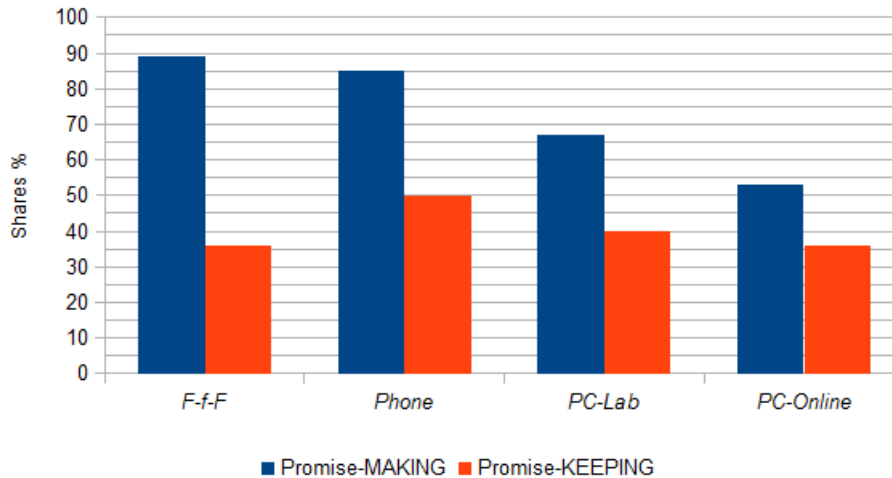


Table 2: Descriptives
SUMMARY TABLE

Treatment	Obs.	Promise-making rate	Promise-keeping rate
$F-t-F$	60	88% (53/60)	36% (19/53)
<i>Phone</i>	60	85% (51/60)	51% (26/51)
<i>PC-Lab</i>	60	67% (40/60)	40% (16/40)
<i>PC-Online</i>	62	53% (33/62)	36% (12/33)

Table 3: Probit regressions
TREATMENTS EFFECTS

Variable	(1a)	(1b)	(2a)	(2b)
	Promise-Making Mrg. Effects	Promise-Making Mrg. Effects	Promise-Keeping Mrg. Effects	Promise-Keeping Mrg. Effects
Constant [<i>F-t-F</i>]	[0.88***]	[0.88***]	[0.36**]	[0.27**]
<i>Phone</i>	-0.05	-0.04	0.15	0.15
<i>PC-Lab</i>	-0.26***	-0.26***	0.04	0.06
<i>PC-Online</i>	-0.39***	-0.39***	0.00	0.00
<i>Male</i>		0.01		-0.10
<i>Age</i>		0.01		0.00
<i>Reported Outcome</i>		-0.03		0.02
Obs.	242	242	177	177

Probit regression, marginal effects are reported. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$. *Phone*, *PC-Lab*, *PC-Online* treatment dummies; *Male* gender dummy=1 if male; *Age* discrete variable; *Reported Outcome* discrete variable ranging between 0 and 4. *F-t-F* treatment dummy omitted for collinearity reasons, reference level (constant) reported in square brackets.

Result (1): Promise-making is more frequent when the communication channel is characterized by smaller social distance:

$$(F-t-F = Phone) > (PC-Lab = PC-Online)$$

A probit model (Table 3, model: 1a) reveals that there is no statistical difference in promise-making (dependent variable: 1 if promise is made, 0 if promise is denied) between the *F-t-F* (constant, 88%) and the *Phone* treatments (treatment dummy; 5 percentage points, $p=0.600$). Having *F-t-F* as reference treatment, promise-making decreases significantly by 26 percentage points ($p=0.007$) under *PC-Lab* and 39 percentage points ($p=0.001$) under *PC-Online* (both treatment dummies), respectively.¹⁴ Controls (Table 3, model: 1b) that refer to demographics and

¹⁴The coefficients for *PC-Lab* and *PC-Online* (both *indirect* computer-based channels) turn to be not statistically different from each other (Wald-test $p=0.129$). In Tab. A.2 in the appendix, we provide the same analysis pooling together *direct* voice-based communication channels (*F-t-F* and *Phone*) and *indirect* computer-based channels (*PC-Lab* and *PC-Online*). With this pooled specification, the same result is delivered.

the behavior in the previous experimental task¹⁵ turn out to be not statistically significant and small in their sizes.

Result (2): Promise-keeping rates are not affected by recordability concerns:

$$[(PC-Lab=PC-Online)=(Phone =F-t-F)]|Promise=1$$

Moving to the promise-keeping margin, the shares of subjects who have made the promise and fully kept it¹⁶ do not show large variations across treatments (see Figure 2 and Table 2). Under *F-t-F*, 36% of the subjects keep the promise. A share of 50% is consistent under the *Phone* condition, while 40% and 36% of the committed subjects actually keep the promise under *PC-Lab* and *PC-Online*, respectively. A probit model (Table 3, model: 2a) reveals that the baseline probability of keeping the promise (1 if promise is kept, 0 if promise is not kept) observed under *F-t-F* (constant, 36%) does not vary significantly in the *Phone* treatment (treatment dummy; 15 percentage points, $p=0.1209$). In line with this, no significant differences can be observed if we consider the computer-mediated treatments featured by recordability property (4 percentage points, $p=0.683$ under *PC-Lab*, and 0 percentage point, $p=0.961$ under *PC-Online*). Also, in this case, all controls that refer to demographics, as well as to the behavior in the previous experimental task (Table 3, model: 2b), are not significant both in statistical terms and size.

5 Conclusion

In this study we document that the less anonymous (e.g., *F-t-F* and *Phone*) a social interaction is, i.e., by experimentally varying the communication channel, the higher the propensity of an agent to make a promise when asked for that, compared to a more anonymous channel (e.g., *PC-Lab* and *PC-Online*). While around 90%

¹⁵It is the number of reported *tails* in the coin flip task by Conrads (2014). In this experimental task, subjects had to privately flip a coin four times. Each time tails is reported, a subject earned 1 Euro in addition to a fixed payment of 7 Euros for filling in a socio-demographic questionnaire. Thus, subjects had an incentive to over-report the true outcome of the four coin flips. The independent variable labeled ‘*Reported Outcome*’ in Table 3, 4, A.2 and A.3 captures the payoffs earned by subjects in the previous experimental task (this control variable varies between 0 and 4). ‘*Reported Outcome*’ can be interpreted both as behavioral outcome and, as a consequence, payoff earned in Conrads (2014) task, e.g., if a subject reported tails four times she would also earn 4 Euros.

¹⁶No subject started the survey without fully completing it. No one approached the survey platform before the starting time or after the deadline.

of the subjects made the promise when approached verbally in a more direct and non-anonymous way, only roughly 60% committed when the interpersonal communication was based on more anonymous and indirect computer-mediated channels. This pattern vanishes when we look at the actual promise-keeping rates across treatments. The average promise-keeping rate was constant (around 40%) and not influenced by the features of the communication channels employed to ask for unconditional cooperation. Thus, with of our simple experimental study we are able to shed more light on Ellingsen and Johannesson (2004) mentioned above: Oral and face-to-face interactions lead to higher promise-giving rates compared to written anonymous interaction, whereas promise-keeping rates turn out to be similar across communication channels.

From a practical perspective, our results suggest that if 10 unconditional cooperators are needed for a voluntary task, a manager should be aware that in order to actually receive this level of help she will have 30 direct conversations (face-to-face or by phone) or send around 40 emails asking for unconditional cooperation to potential volunteers. Our study confirms how direct human communication still represents the most effective modality for fostering fruitful cooperative interactions, and we also learn that less effective but time saving electronically mediated communications can be considered as good alternative tools.

Nevertheless, our results do not allow the identification of a conclusive reason for the observed behavior. The high promise-giving rates in face-to-face interactions may be due to a stronger activation of social norms in socially close interactions. An alternative explanation would be that subjects want to prevent their physical reactions of shame and guilt due to “tell tale clues”, e.g., turning red, and therefore just make the promise. In addition, subjects who are asked to make a promise in written form may foresee that a given promise is recorded and might be reviewed in case the promise is not kept. Therefore, further research is needed in order to better understand the drivers generating the asymmetry in promise-making rates observed under anonymous vs. non-anonymous communication channels. The higher performance in terms of promise-making delivered by non-anonymous communication channels could be generated by the synchronicity of the communication and it could be positively influenced by the “tell tale clues” factor. A further experimental design centered around a computer-based channel featured by synchronicity, such a chat room device, could be helpful in order to deeper understand how the different technical features of the communication channels shape promise attitudes.

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Appendix

Script A.1: VOUCHER

Further instructions after making the promise to access to the online survey

Thank you very much that you agreed to participate in the online survey.

Within the next 24 hours MM/DD/YY - HH/MM until MM/DD/YY - HH/MM

you reach the survey platform by using the following link:

< <http://goo.gl/s3aCrd> >

Table A.2: Probit Regressions
POOLED TREATMENTS EFFECTS

Variable	(1a) Promise-Making Mrg. Effects	(1b) Promise-Making Mrg. Effects	(2a) Promise-Keeping Mrg. Effects	(2b) Promise-Keeping Mrg. Effects
[<i>Direct Com.</i>]	[0.86***]	[0.91**]	[0.43***]	[0.40**]
<i>Indirect Com.</i>	-0.26***	-0.27***	-0.05	-0.04
<i>Male</i>		-0.01		-0.09
<i>Age</i>		0.001		0.001
<i>Reported Outcome</i>		-0.03		0.01
Obs.	242	242	177	177

Probit regression, marginal effects are reported. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.
Direct Com.=(F-t-F & Phone); *Indirect Com.*=(PC-Lab & PC-Online).
Indirect Com. treatment dummy; *Direct Com.* treatment dummy omitted for collinearity reasons,
reference level (constant) reported in square brackets; *Male* gender dummy =1 if male; *Age* discrete
variable; *Reported Outcome* discrete variable ranging between 0 and 4.

Table A.3: Linear Regression
PROMPTNESS IN KEEPING THE PROMISE

Variable	Promptness (minutes)
Constant [<i>F-t-F</i>]	385.41*** (134.41)
<i>Phone</i>	36.46 (92.38)
<i>PC-Lab</i>	92.27 (104.61)
<i>PC-Online</i>	21.68 (115.34)
<i>Male</i>	21.62 (73.06)
<i>Age -centerd-</i>	20.03* (10.70)
<i>Reported Outcome</i>	-21.36 (40.63)
Obs.	73
R ²	0.07

Outcome variable: minutes of procrastination in filling in the survey from the start of the survey time window. Significance levels: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Phone, *PC-Lab*, *PC-Online* treatment dummies; *F-t-F* treatment dummy omitted for collinearity reasons, reference level (constant) reported in square brackets; *Male* gender dummy =1 if male; *Reported Outcome* discrete variable ranging between 0 and 4; *Age* variable is centered around the mean ($Age_i - \overline{Age}$) in order to allow for a more intuitive interpretation of the constant term estimate.

Tab. A.4: Sequence of experimental treatments and sessions

Session	Treatment	Date	Session time	Survey start	Survey end	Observations
1	<i>F-t-F</i>	05/11/2013 (TUE)	10am - 11am	12pm - 05/11/13	12pm - 06/11/13	12
2	<i>F-t-F</i>	05/11/2013 (TUE)	11pm - 12pm	01pm - 05/11/13	01pm - 06/11/13	12
3	<i>F-t-F</i>	05/11/2013 (TUE)	01pm - 02pm	03pm - 05/11/13	03pm - 06/11/13	12
4	<i>F-t-F</i>	05/11/2013 (TUE)	02pm - 03pm	04pm - 05/11/13	04pm - 06/11/13	12
5	<i>F-t-F</i>	05/11/2013 (TUE)	03pm - 04pm	05pm - 05/11/13	05pm - 06/11/13	12
6	<i>Phone</i>	06/11/2013 (WED)	10am - 11am	12pm - 06/11/13	12pm - 07/11/13	12
7	<i>Phone</i>	06/11/2013 (WED)	11pm - 12pm	01pm - 06/11/13	01pm - 07/11/13	12
8	<i>Phone</i>	06/11/2013 (WED)	01pm - 02pm	03pm - 06/11/13	03pm - 07/11/13	12
9	<i>Phone</i>	06/11/2013 (WED)	02pm - 03pm	04pm - 06/11/13	04pm - 07/11/13	12
10	<i>Phone</i>	06/11/2013 (WED)	03pm - 04pm	05pm - 06/11/13	05pm - 07/11/13	12
11	<i>PC-Lab</i>	07/11/2013 (THU)	10am - 11am	12pm - 07/11/13	12pm - 08/11/13	12
12	<i>PC-Lab</i>	07/11/2013 (THU)	11pm - 12pm	01pm - 07/11/13	01pm - 08/11/13	12
13	<i>PC-Lab</i>	07/11/2013 (THU)	01pm - 02pm	03pm - 07/11/13	03pm - 08/11/13	12
14	<i>PC-Lab</i>	07/11/2013 (THU)	02pm - 03pm	04pm - 07/11/13	04pm - 08/11/13	12
15	<i>PC-Lab</i>	07/11/2013 (THU)	03pm - 04pm	05pm - 07/11/13	05pm - 08/11/13	12
16	<i>PC-Online</i>	29/11/2013 (FRI)	10am - 11am	12pm - 29/11/13	12pm - 30/11/13	62