Natural and Strategic Generosity as Signals of Trustworthiness

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Flashback
The ideas

1: Many signals in human communications work at one removed. We do not observe the action linked with trait being signalled but some evidence that such an action took place. ST focuses on signal production; we claim production of signals “raw material” and signal display are distinct operations.

2: If the information value of past actions can be realised via displays of evidence, signalling is becomes cheaper, more efficient. But cheapness also dents credibility. Lack of ability to do X, does not imply lack of ability to fabricate evidence of having done X. Evidence must be mimic-proof. It is itself a new signal.

3: Past actions have greater information value if this is unanticipated, if they derive from of our natural inclinations. Mimics do not intrude. Thus, actions carry high information value even if cheap to mimic.
Hypotheses

We focus on acts of generosity and on the value of signalling trustworthiness

Our hypotheses are that

- generosity is informative of trustworthiness (H1)
- trustees grasp value of their generous (or ungenerous) acts, and display (or conceal/lie about) them (H2),
- when informed of trustees’ generosity (or lack of it) trusters respond by trusting (or not trusting) (H3)
- as predicted by ST, the informative value of generous acts is higher when the evidence for it cannot be fabricated and when unanticipated (H4, H5)
How we do it

We use

• a DG to measure trustees’ generosity
• a TG to measure both trustees’ trustworthiness and trusters’ responses to information about trustees’ generosity
• before TG, trustees may inform trusters of their decision in DG

_Treatments_: some subjects make DG decisions unaware that a TG follows ("veiled"), others are made aware ("unveiled")

• _veiled_ has two treatments, in one trustees can only reveal the truth or be silent, in the other they can declare what they did in the DG...
• _unveiled_: trustees can only tell the truth or be silent
## Design

| N = 265* | Veiled | Unveiled |
|----------|--------|----------|
| **Control** | A (n = 52) | - |
| (no communication) | DG, [no action, TG₁, TG₂] | |
| **Display or conceal** | B (n = 53) | D (n = 57) |
| | DG, [revelation, TG₁, TG₂] | DG, revelation, TG₁, TG₂ |
| **State (“cheap talk”) or conceal** | C (n = 53) | - |
| | DG, [statement, TG₁, TG₂] | |

*In each of the 10 experimental sessions, 5 subjects were the recipients in the DG and did not participate in parts 2 and 3 of the experiment. In the three veiled conditions, subjects were informed only after the DG what parts 2 and 3 of the experiment comprised. In the unveiled condition it was known to subjects from the beginning what part 2 and part 3 of the experiment would comprise.
Sender’s Decision in the DG

In Part 1, you have been randomly assigned to be a "sender". As a sender, you are asked to choose between action "h" and action "p" (see Figure on the left).

If you choose action "h", £8 will be divided between you and the recipient such that the recipient will receive £1.00 and you get to keep £7.00.

If you choose action "p", £8 will be divided between you and the recipient such that the recipient will receive £3.50 and you get to keep £4.50.

(Please consult the instruction sheet for further details.)

165/215 (77%)  50/215 (23%)
Trustee’s Decision in the TG

In Part 3, you are now a "Person B". Person A is endowed with £5 and is asked to choose between action "n" and action "v".

If Person A chooses action "n", the £5 will be divided such that you will receive £6 and Person A gets to keep £5.

If Person A chooses action "v", £6 will be added to the £5 and sent to you. Then, you will be asked to choose between action "a" and action "k" (see Figure on the left).

If you choose action "a", the £11 will be divided such that Person A will receive £1 and you get to keep £10.

If you choose action "k", the £11 will be divided such that Person A will receive £5 and you get to keep £6.

(Please consult the instruction sheet for further details.)

For the case that Person A has chosen "v", please specify whether you choose action "a" or action "k".

- a
- k
**Trustee’s Decision in the DG and TG**

**H1:** Trustees who chose ‘generous’ in the DG are more likely to choose ‘return’ in the TG than trustees who chose ‘mean’ in the DG. (80% vs. 28%; $\chi^2(1) = 42.27, p < 0.001$)

**H4a:** Subjects will be more likely to choose ‘generous’ in the unveiled conditions than in the veiled condition. (32% vs. 20%; $\chi^2(1) = 3.01, p = 0.083$)

**H4b:** The correlation hypothesized under H1 will be weaker in the unveiled condition than in the veiled conditions.
Trustee’s Communication of DG Choice

**PART 3**

In Part 3, you are now a "Person B". Before "Person A" decides whether to choose action "n" or action "V", you can tell person A either nothing or which was your decision in the first part of the experiment.

In the first part of the experiment, you have chosen action "p" (see Figure on the left).

(Please consult the instruction sheet for further details.)

What do you want to tell Person A about how you have decided in the first part of the experiment?

- nothing
- My choice was "h"
- My choice was "p"
Trustee’s Communication of DG Choice

H2: In all treatment conditions, trustees who chose ‘generous’ in the DG choose to inform trusters truthfully, while trustees who chose ‘mean’ are more likely to be silent or, in the declare condition, to lie and falsely state that they chose ‘generous’.
Truster’s Decision in TG

In Part 2, you have been randomly assigned to be a "Person A". As a Person A, you are endowed with £5 and you are asked to choose between action "n" and action 'v' (see Figure on the left).

If you choose action "n", the £5 will be divided such that Person B will receive £2 and you get to keep £3.

If you choose action "v", £6 will be added to the £5 and sent to Person B. Person B will be asked to choose between action "a" and action "k".

If Person B chooses action "a", the £11 will be divided such that you will receive £1 and Person B gets to keep £10.

If Person B chooses action "k", the £11 will be divided such that you will receive £5 and Person B gets to keep £6.

(Please consult the instruction sheet for further details.)

For each of the following three cases, please specify whether you choose action "n" or action "v".

1. Person B said that his or her choice in the first part of the experiment was "n".
   - [ ] n
   - [ ] v

2. Person B said that his or her choice in the first part of the experiment was "p".
   - [ ] n
   - [ ] v

3. Person B did not say what his or her choice in the first part of the experiment was.
   - [ ] n
   - [ ] v
In all treatment conditions, trusters are more likely to trust trustees who state that they chose ‘generous’ in the DG, than they are likely to trust trustees (a) about whom they have no information (control) or (b) who are silent or state that they chose ‘mean’ in the DG.

Trusters are more likely to trust generous trustees in the disclose veiled condition than...
(a) in the declare veiled condition or...
(b) in the disclose unveiled condition.
Truster’s Decision in TG (untrustworthy)

![Graph showing the proportion of 'send' choices in TG for different conditions.](Image)
Truster’s Decision in TG (trustworthy)
Conclusions

(Un)generosity is a good signal of (un)trustworthiness

Subjects understand this well:

• Trustees, to persuade trusters, reveal (or conceal) their DG choices—to do so trustees must understand that trusters too understand

• Trusters trust more those who reveal they were generous than they trust (i) strangers (control condition), those who (ii) hide what they did, or (iii) reveal that they were mean.

When the ‘veil of ignorance’ is lifted, trustees who generous are not

• lie about it in large numbers, when their DG choice cannot be changed

• mimic ‘generosity’, when aware from the start that a TG will follow

But trusters are not all gullible, esp. those who are themselves untrustworthy when wearing the hat of trustee

• Sophisticated strategic thinking even in an artificial setting with low stakes
Observed frequencies and expected payoffs of trustees’ decision sequences

| decision sequence   | freq. (in %) | exp. payoff (in £) | freq. (in %) | exp. payoff (in £) | freq. (in %) | exp. payoff (in £) | freq. (in %) | exp. payoff (in £) | freq. (in %) | exp. payoff (in £) |
|---------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|
| control (veiled)    |              |                    | disclose veiled |                   | declare veiled |                   | disclose unveiled |                   |                      |              |                    |
| (n = 52)            |              |                    | (n = 53)      |                   | (n = 53)      |                   | (n = 57)     |                   |                      |              |                    |
| gen.-return         | 17           | 8.34               | -             | -                  | -             | -                  | -            | -                  | -             | -                  |
| gen.-nothing-return | -            | -                  | 0             | 7.78               | 6             | 8.1                | 0            | 7.34               | -             | -                  |
| gen.-mean-return    | -            | -                  | -             | -                  | 0             | 7.94               | -            | -                  | -             | -                  |
| gen.-gen.-return    | -            | -                  | 11            | 9.38               | 19            | 8.98               | 21           | 8.94               | -             | -                  |
| gen.-pocket         | 2            | 10.18              | -             | -                  | -             | -                  | -            | -                  | -             | -                  |
| gen.-nothing-pocket | -            | -                  | 0             | 9.06               | 0             | 9.7                | 0            | 8.18               | -             | -                  |
| gen.-mean-pocket    | -            | -                  | -             | -                  | 0             | 9.38               | -            | -                  | -             | -                  |
| gen.-gen.-pocket    | 2            | 12.26              | 11            | 12.26              | 4             | 11.46              | 11           | 11.38              | -             | -                  |
| mean-return         | 23           | 10.84              | -             | -                  | -             | -                  | -            | -                  | -             | -                  |
| mean-nothing-return | -            | -                  | 15            | 10.28              | 6             | 10.6               | 16           | 9.84               | -             | -                  |
| mean-mean-return    | -            | -                  | 8             | 10.36              | 9             | 10.44              | 2            | 9.64               | -             | -                  |
| mean-gen-return     | -            | -                  | -             | -                  | 9             | 11.48              | -            | -                  | -             | -                  |
| mean-pocket         | 58           | 12.68              | -             | -                  | -             | -                  | -            | -                  | -             | -                  |
| mean-nothing-pocket | -            | -                  | 28            | 11.56              | 11            | 12.2               | 37           | 10.68              | -             | -                  |
| mean-mean-pocket    | -            | -                  | 36            | 11.72              | 2             | 11.88              | 14           | 10.28              | -             | -                  |
| mean-gen-pocket     | -            | -                  | 34            | 13.96              | -             | -                  | -            | -                  | -             | -                  |
| exp. payoff (in £)  | 11.47        |                    | 11.10         |                    | 11.59         |                    | 10.29        |                    |              | -                  |
# Observed frequencies and expected payoffs of trusters’ strategies

| Strategy                | Control (veiled) | Disclose Veiled | Declare Veiled | Disclose Unveiled |
|-------------------------|------------------|-----------------|----------------|-------------------|
|                         | freq. (in %)     | exp. payoff (in £) | freq. (in %)     | exp. payoff (in £) | freq. (in %)     | exp. payoff (in £) | freq. (in %)     | exp. payoff (in £) |
| send                    | 46               | 2.6             | -              | -                 | -                | -                | -                | -                 |
| send-send-send          | -                | -               | 23             | 2.36              | 25               | 2.96             | 14               | 2.57              |
| send-send-keep          | -                | -               | 2              | 2.18              | 0                | 3.16             | 0                | 2.37              |
| send-keep-send          | -                | -               | 8              | 2.92              | 13               | 2.82             | 7                | 2.81              |
| send-keep-keep          | -                | -               | 0              | 2.74              | 2                | 3.02             | 0                | 2.61              |
| keep                    | 54               | 3               | -              | -                 | -                | -                | -                | -                 |
| keep-send-send          | -                | -               | 8              | 2.62              | 6                | 2.94             | 0                | 2.99              |
| keep-send-keep          | -                | -               | 2              | 2.44              | 6                | 3.14             | 2                | 2.79              |
| keep-keep-send          | -                | -               | 34             | 3.18              | 19               | 2.80             | 40               | 3.23              |
| keep-keep-keep          | -                | -               | 24             | 3.00              | 30               | 3.00             | 37               | 3.00              |
| exp. payoff (in £)      | 2.82             | 2.88            | 2.96           | 3.01              |

**Notes:** The table lists observed frequencies (in %) of trusters’ strategies across experimental conditions and the corresponding expected payoffs (in £). A truster’s strategy defines his or her TG response to each possible bit of information about a trustee’s DG behaviour. That is, for instance, by the strategy keep-keep-send a truster keeps if the trustee remains silent, keeps if the trustee reveals/says to have chosen mean and sends if the trustee reveals/says to have chosen generous in the DG. The expected payoffs are calculated based on the actual frequencies of trustees’ TG responses, which are displayed in Table S1. For example, a truster who employs the strategy keep-keep-send in the disclose veiled condition earns \((0.15 + 0.28) \times £3 + (0.08 + 0.36) \times £3 + 0.11 \times £5 + 0.02 \times £1 = £3.18\) in expectation. The expected payoffs at the bottom of the table are the average expected payoffs per experimental condition.
Hypotheses

**H1:** Trustees who chose ‘generous’ in the DG are more likely to choose ‘return’ in the TG than trustees who chose ‘mean’ in the DG.

**H2:** In all treatments, trustees who chose ‘generous’ in the DG choose to inform trusters truthfully, while trustees who chose ‘mean’ are more likely to be silent or, in the declare condition, to lie and falsely state that they chose ‘generous’.

**H3:** In all treatments, trusters are more likely to trust trustees who state that they chose ‘generous’ in the DG, than they are likely to trust trustees (a) about whom they have no information (control) or (b) who are silent or state that they chose ‘mean’ in the DG.

**H4a:** Subjects will be more likely to choose ‘generous’ in the unveiled conditions than in the veiled condition.

**H4b:** The correlation hypothesized under **H1** will be weaker in the unveiled condition than in the veiled conditions.

**H5:** Trusters are more likely to trust generous trustees in the disclose veiled condition than...
(a) in the declare veiled condition or...
(b) in the disclose unveiled condition.
