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Supplemental Information for:

Local norms of cheating and the cultural evolution of crime and punishment

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Supplemental Information consists of one PDF with 15 pages, including two tables. This file also contains information on sampling of participants as well as components of the packets received by participants in *Study 1* and *Study 2*. Page 5 contains the questions participants in *Study 1* answered about injunctive and descriptive civic norms in their neighborhoods. On page 6 are the instructions for the game, followed by examples and test questions on pages 7 through 9. The instructions and test questions were used in *Study 1* and *Study 2*. Participants used pages 10, 11, or 12 to record their responses for the game; these pages appeared in packets for Players 1, 2, and 3, respectively. Page 11 was used by Player 2 in both *Study 1* and *Study 2*. Pages 13 and 14 contain the norms manipulations for *Study 2* participants in Neighborhoods A and B, respectively. Note that in the packet participants were given, we referred to Players A, B, and C rather than Players 1, 2, and 3. In the manuscript, we refer to Players 1, 2, and 3 to avoid confusion with Neighborhoods A and B, which are called such to maintain continuity with Nettle, Colléony & Cockerill (2011).

25   *Study 1 sampling*. A total of 562 packets were delivered to Neighborhood A and 819 packets to

26   Neighborhood B. We delivered packets to Neighborhood B at a higher rate because of the lower survey

27   return rate [1] observed in Neighborhood B. We delivered Player 3 packets at a higher rate in both

28   neighborhoods to increase statistical power for modeling *punitiveness*. Variation in the number of

29   successfully delivered packets arose from difficulties in finding the residence or safely accessing the

30   mailslot (particularly in Neighborhood B), as well as changes in residence. As expected, return rates

31   were lower in Neighborhood B (Table S1).

32   Fourteen participants were excluded from the game because the participant had not completed

33   the game component of the packet. Of these, twelve were from Neighborhood B, and all but one

34   (Player 2) were given the role of Player 3. Because we used the 'strategy method' for Player 3, Player 3s

35   were required to make 10 choices in the game, whereas Players 1 and 2 were required to make only one

36   choice in the game. Most of the potential participants who were excluded for not completing the game

37   circled a choice for only one of the 10 choices required to Player 3. After excluding these 14

38   participants for incomplete submissions, we have final sample sizes of 40, 44, and 49 for Players 1, 2,

39   and 3, respectively, in Neighborhood A, and 34, 43, and 50 for Players 1, 2, and 3, respectively, in

40   Neighborhood B.

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42   *Study 2 sampling*. A total of 200 Player 2 packets were delivered to Neighborhood A and 250 packets to

43   Neighborhood B. The return rate for Neighborhood B (16.0%) was within the range observed across

44   roles for *Study 1*. The return rate was slightly lower for Neighborhood A (21.5%) compared to the rate

45   for *Study 1*. We excluded three participants from the game. Of these, two were from Neighborhood A;

46   one participant was excluded for not circling a choice for the game, and the other was excluded because

47   she did not respond to the norms manipulation questions (ESM). We excluded the participant from

48   Neighborhood B because we suspected she had answered the questions randomly (e.g., she indicated

49   higher trust in people she met for the first time compared than those she knows personally); this did not

50   qualitatively change the results, and we note that she had indicated she expected 3PP. Thus, in *Study 2*

51   we have final samples sizes of 41 and 39 in Neighborhoods A and B, respectively (Table S3).

Table S1. Key sampling values for *Study 1*.

Role	Packets delivered	Response rate	Sample size female	Sample size male
Player 1	163 (241)	24.5% (14.1%)	24 (22)	16 (12)
Player 2	171 (231)	25.7% (19.1%)	22 (20)	22 (23)
Player 3	228 (347)	22.4% (17.6%)	26 (27)	23 (23)

Parentheses contain values for Neighborhood B. Discrepancies between return rates and final sample sizes are due to exclusion of incomplete packets.

Table S2. Key sampling values for *Study 2*.

Role	Packets delivered	Response rate	Sample size female	Sample size male
Player 2	200 (250)	21.5% (16.0%)	20 (23)	21 (16)

Parentheses contain values for Neighborhood B. Discrepancies between return rates and final sample sizes are due to exclusion of incomplete packets.

Here, we ask some questions about certain behaviours. For part 'a' of each question, please tell us whether you think the behaviour is Never OK, Always OK, or somewhere in between. Circle a number from 1 to 10, where 1 is Never OK and 10 is Always OK. Then, for part 'b' of each question, please tell us whether you think No one in your neighbourhood would do this, Everyone in your neighbourhood would do this, or somewhere in between. Circle a number from 1 to 10, where 1 is No one would and 10 is Everyone would.

1. Cheating the benefits system.
    a. Do you think it's Never OK, Always OK, or somewhere in between?

1	2	3	4	5	6	7	8	9	10

Never OK   *Always OK*

    b. Do you think many people in your neighbourhood would do this?

1	2	3	4	5	6	7	8	9	10

No one would   *Everyone would*

2. Avoiding a fare on public transport.
    a. Do you think it's Never OK, Always OK, or somewhere in between?

1	2	3	4	5	6	7	8	9	10

Never OK   *Always OK*

    b. Do you think many people in your neighbourhood would do this?

1	2	3	4	5	6	7	8	9	10

No one would   *Everyone would*

3. Cheating on taxes.
    a. Do you think it's Never OK, Always OK, or somewhere in between?

1	2	3	4	5	6	7	8	9	10

Never OK   *Always OK*

    b. Do you think many people in your neighbourhood would do this?

1	2	3	4	5	6	7	8	9	10

No one would   *Everyone would*

124 *Now we explain the game to you. You will play the game with other people in your neighbourhood.*

125 **About the Game**
126 You can get real money from the game. Any money you make will be delivered to you in cash, in a
127 sealed envelope, along with the £5 thank-you money. We will not keep any information linking your
128 name or address to the choices you made in the game. We assure you the money is real, will be
129 delivered in cash within one week from when we get your packet, and carries no conditions.
130
131
132
133 **The Game**
134 You will play this game with 2 other people who also got this packet in the post. These people are
135 from your neighbourhood. You will never know who they are. They will never know who you are
136 either. Each player is given a role in the game. The roles are: Player A, Player B, and Player C. The
137 role you will play is given by the packet you got. The same is true for the other players in the game.
138
139
140
141 **How the game is played in the post:**
142 We provide an initial amount of £10 to **each** Player. Players A and C each make a choice about what to
143 do with their money. They write this choice in their packets. The game is played once the packets have
144 been returned to the university by post. Then, we deliver in cash the money each of the players got
145 from the game. With the cash, we give each player a sheet showing what the other players chose to do.
146
147
148
149 **This is what happens in the game:**
150 Players A, B, and C **each** get £10 to start the game with. Player A must decide whether to take none,
151 some, or all of the £10 that Player B would have gotten. If Player A takes money from Player B, then
152 Player A will have it for themselves and Player B will not have it. Then, Player C must decide whether
153 to use some of their money to make Player A lose money.
154
155 For each possible amount Player A might take from Player B (from £1 to £10), Player C makes a
156 decision. Player C must decide whether to pay £2 to reduce the money Player A gets by £6 **or** to "do
157 nothing". If Player C decides to do nothing, they keep their full £10.
158
159
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161 **Note:**
162 If Player A chooses to take £0 from Player B (that is, they choose not to take money from Player B),
163 Player C cannot pay to make Player A lose money. Also, whatever Player C chooses, Player B will not
164 get back the money Player A took from them if Player A chose to do so.
165
166 Because Player B cannot make a choice in the game, we ask Player B what they think Player C will do.
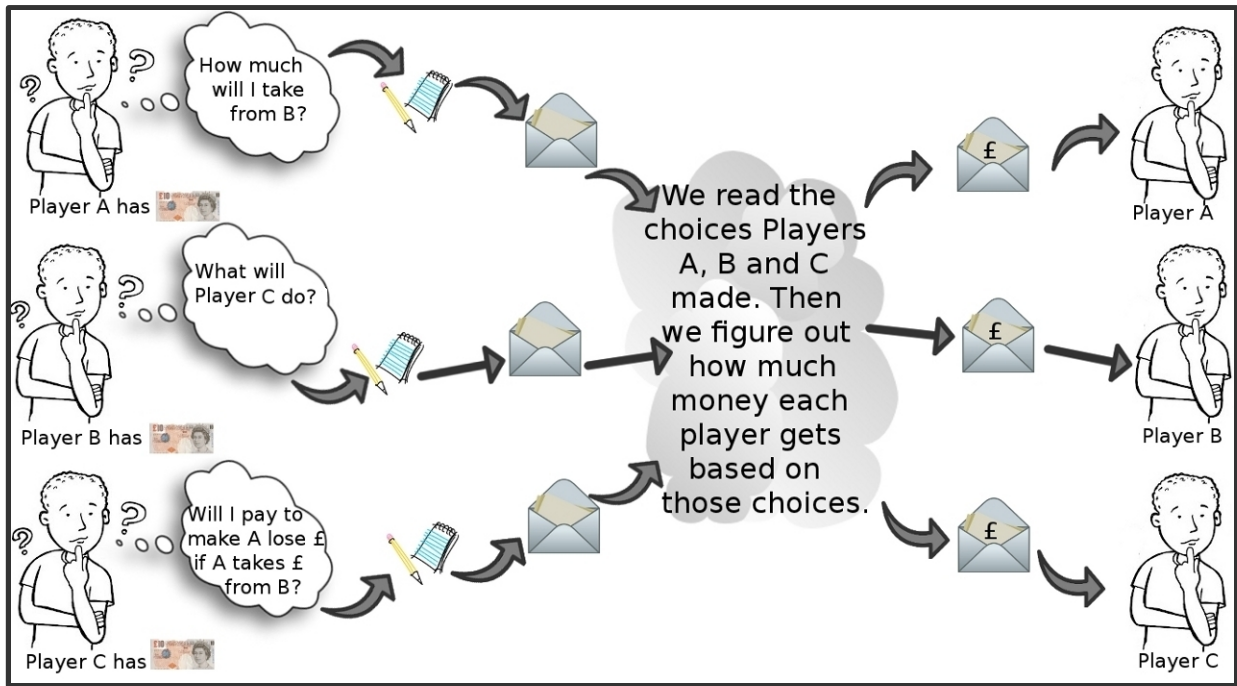167
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195 *On this page and the next 3 pages, we go over examples. In Examples 3-5, we ask you questions to*
196 *show you understand the game. The questions are in boxes.* **Make sure you answer all the questions**
197 **before playing the game for real!** *Then we tell you which role you will play and you will play for real.*
198
199
200 **Example 1.**
201 Players A, B, and C each start with £10.
202
203   *Player A*   *Player B*   *Player C*

205 Suppose Player A decided to take £0 from Player B.
206
207 In this case, Player A still has £10. Player B still has £10 as well. And Player C cannot pay to make
208 Player A lose money, so Player C also still has £10.
209

210   *Player A*   *Player B*   *Player C*
211
212
213

214 **Example 2.**
215 Players A, B, and C each start with £10.
216   *Player A*   *Player B*   *Player C*

218 Suppose Player A decided to take £1 from Player B. Now Player A has £11 and Player B has £9.
219   *Player A*   *Player B*   *Player C*

221 Now, suppose Player C had decided to "do nothing" if Player A were to take £1 from Player B. Then,
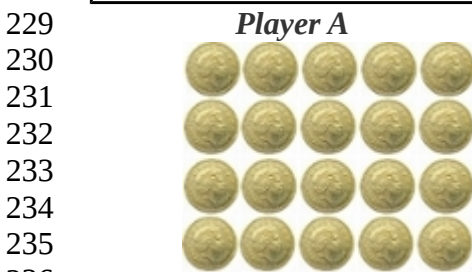222 Player A still gets £11. Player B still gets £9. And Player C still gets £10.
223   *Player A*   *Player B*   *Player C*

224 **Example 3.**
225 Players A, B, and C each start with £10.
226   *Player A*   *Player B*   *Player C*

228 Suppose Player A decided to take £10 from Player B. Now Player A has £20.

   QUESTION: How many £ does Player B have now (fill in the blank)? £____

229   *Player A*   *Player B*   *Player C*
230
231   **?**
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236
237 However, suppose Player C had decided that if Player A were to take £10 from Player B, they would
238 pay to make Player A lose money.
239 Then, Player C pays £2 to subtract £6 from the money Player A was going to get. Player C would then
240 get £8 (£10 minus £2 equals £8). Player B would still get £0.

   QUESTION: How many £ does Player A get? £____

241   Player A   Player B   Player C
242   **?**   **0**

243 **Example 4.**

244 Players A, B, and C each start with £10.

245   *Player A*   *Player B*   *Player C*

247 Suppose Player A decided to take £1 from Player B. Now Player A has £11 and Player B has £9.

248   *Player A*   *Player B*   *Player C*

250 However, suppose Player C had decided that if Player A were to take £1 from Player B, they would pay
251 to make Player A lose money.
252
253 Then, Player C pays £2 to subtract £6 from the money Player A was going to get. Player A would get
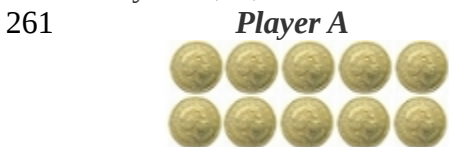254 £5 (£11 minus £6 equals £5). Player B would still get £9.

QUESTION: How many £ would Player C get? £____

255   *Player A*   *Player B*   *Player C*
256   ?
257
258

259 **Example 5.**

260 Players A, B, and C each start with £10.

261   *Player A*   *Player B*   *Player C*

263 Suppose Player A decided to take £10 from Player B. Now Player A has £20 and Player B has £0.

264   *Player A*   *Player B*   *Player C*
265   0
266
267
268
269
270
271

272 Now, suppose Player C had decided to "do nothing" if Player A were to take £10 from Player B.

QUESTIONS: How many £ would Player A get? £____   Player B? £____   Player C? £___

273   *Player A*   *Player B*   *Player C*
274   ?   ?   ?

*We have gone over examples of the game. **Be sure you filled in answers to all the questions in boxes that tested your understanding of the game!** On this page, you will **NOW** play the game **for real**.*

THE GAME

Your role is: **Player A**.

You are starting the game with £10. Players B and C are starting the game with £10 as well. Along with any money from the game, each player will receive a sheet that explains what decisions were made in the game and the outcomes.

How many pounds do you choose to take from Player B?

Instructions: **Circle** an amount.

£0

£1

£2

£4

£5

£6

£7

£8

£9

£10

Check – **Be sure** you circled your choice! To play the game, you need to make a decision!

322 *We have gone over examples of the game.* **Be sure you filled in answers to all the questions in boxes**
323 **that tested your understanding of the game!** *On this page, you will* **NOW** *play the game* **for real**.
324
325 **THE GAME**
326 Your role is: **Player B**.
327
328
329 You are starting the game with £10. Players A and C are starting the game with £10 as well. Along with
330 any money from the game, each player will receive a sheet that explains what decisions were made in
331 the game and the outcomes.
332
333
334 You cannot make a choice in this game. The amount of money you make in the game will depend on
335 what Player A does. **However**, **we would like to know what you think Player C would choose to do.**
336 Please fill out Question 1.
337
338
339 **Question 1.** Suppose Player A decided to take **£5** from Player B (you). If Player A took £5 from you,
340 do you think that Player C would choose to pay £2 of their £10 to make Player A get £6 less?
341
342
343 Instructions: **Circle** the choice you **think** Player C would make **if Player A took £5 from you**.
344
345
346   Do nothing   **OR**   Pay £2 so Player A gets £6 less
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370   *We have gone over examples of the game.* **Be sure you filled in answers to all the questions in boxes**
371   **that tested your understanding of the game!** *On this page, you will* **NOW** *play the game* **for real***.*
372
373   <u>**THE GAME**</u>
374   Your role is: **Player C**.
375
376   You are starting the game with £10. Players A and B are starting the game with £10 as well. Along with
377   any money from the game, each player will receive a sheet that explains what decisions were made in
378   the game and the outcomes.
379
380   We will not know how many pounds Player A will take from Player B until the packets are received at
381   the university. So, you must decide ahead of time what you choose to do for each decision Player A
382   could make.
383
384   <u>Instructions:</u> For **EACH possible amount Player A could take** from Player B, **circle one of the**
385   **options**. There are **10 choices for you to make**.
386   *Note: If Player A does not take any money from Player B, you cannot pay to reduced the amount of*
387   *money Player A gets. So, there is no choice for you to make if Player A takes £0.*
388

|	IF . .	I CHOOSE TO . .	
Choice 1.	Player A takes **£1** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 2.	Player A takes **£2** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 3.	Player A takes **£3** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 4.	Player A takes **£4** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 5.	Player A takes **£5** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 6.	Player A takes **£6** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 7.	Player A takes **£7** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 8.	Player A takes **£8** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 9.	Player A takes **£9** from Player B	Do nothing	Pay £2 so Player A loses £6
Choice 10.	Player A takes **£10** from Player B	Do nothing	Pay £2 so Player A loses £6

389
390   <u>***Check – Be sure you circled an option for each of the 10 choices! To play the game, you need to***</u>
391   <u>***make a decision for each of the 10 choices!***</u>

392 *As a part of the Tyneside Neighbourhoods Project, we recently asked 10 people in your neighbourhood*
393 *how common they think certain behaviours are in your neighbourhood. For each behaviour, we asked*
394 *them to circle a number from 1 to 10, where 1 is No one in your neighbourhood would do this and 10 is*
395 *Everyone in your neighbourhood would do this.*
396
397 *We then averaged their answers to get an idea of how common people think certain behaviors are in*
398 *your neighbourhood. Below we show you what they think. What do you think of their answers?*
399
400 **1.**   **We asked: <u>Would many people in your neighbourhood cheat the benefits system</u>?**

401   **People in your neighbourhood think:**
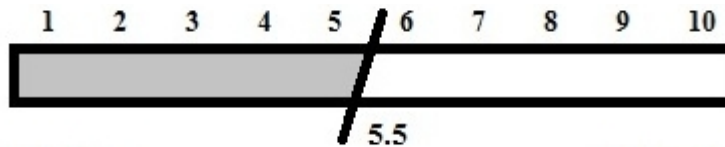
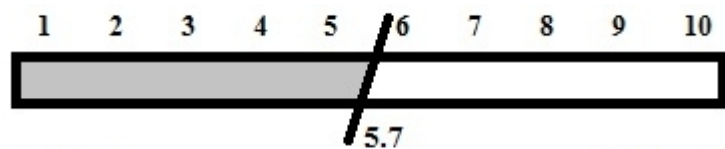402   *No one would*   *Everyone would*
403
404   **What do you think?** (circle one)

405 Fewer people would do this   This is about right   More people would do this
406
407
408 **2.**   **We asked: <u>Would many people in your neighbourhood avoid a fare on public transport</u>?**

409   **People in your neighbourhood think:**

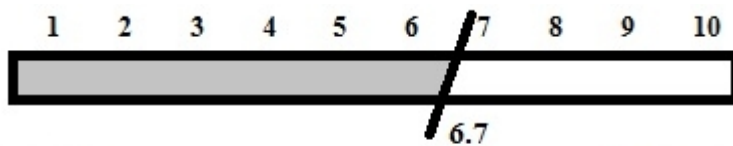410   *No one would*   *Everyone would*
411
412   What do you think? (circle one)
413
414 Fewer people would do this   This is about right   More people would do this
415
416
417 **3.**   **We asked: <u>Would many people in your neighbourhood cheat on taxes</u>?**

418   **People in your neighbourhood think:**

419   *No one would*   *Everyone would*
420
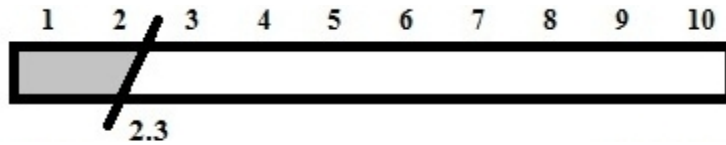421   **What do you think?** (circle one)

422   Fewer people would do this   This is about right   More people would do this

423 *As a part of the Tyneside Neighbourhoods Project, we recently asked 10 people in your neighbourhood*
424 *how common they think certain behaviours are in your neighbourhood. For each behaviour, we asked*
425 *them to circle a number from 1 to 10, where 1 is No one in your neighbourhood would do this and 10 is*
426 *Everyone in your neighbourhood would do this.*
427
428 *We then averaged their answers to get an idea of how common people think certain behaviors are in*
429 *your neighbourhood. Below we show you what they think. What do you think of their answers?*
430
431 **1.   We asked: <u>Would many people in your neighbourhood cheat the benefits system</u>?**

432 **People in your neighbourhood think:**

```
      1    2   3   4   5   6   7   8   9   10
    ┌────────────────────────────────────────────┐
    │▓▓▓▓│                                        │
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        / 2.3
```

433 *No one would*   *Everyone would*
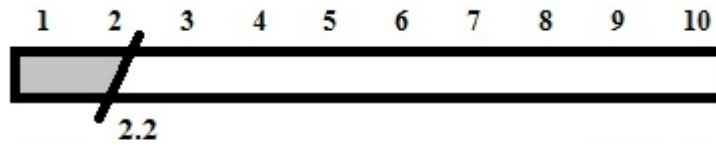434
435 **What do you think?** (circle one)

436 Fewer people would do this   This is about right   More people would do this
437
438
439 **2.   We asked: <u>Would many people in your neighbourhood avoid a fare on public transport</u>?**

440 **People in your neighbourhood think:**

```
      1    2   3   4   5   6   7   8   9   10
    ┌────────────────────────────────────────────┐
    │▓▓▓▓/                                        │
    └───/────────────────────────────────────────┘
       / 2.2
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441 *No one would*   *Everyone would*
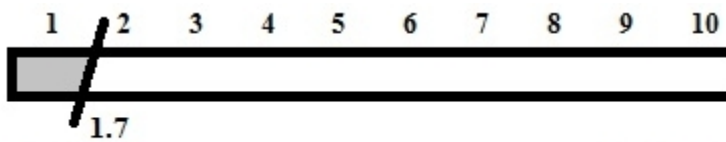442
443 What do you think? (circle one)
444
445 Fewer people would do this   This is about right   More people would do this
446
447
448 **3.   We asked: <u>Would many people in your neighbourhood cheat on taxes</u>?**

449 **People in your neighbourhood think:**

```
      1   2   3   4   5   6   7   8   9   10
    ┌────────────────────────────────────────────┐
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450 *No one would*   *Everyone would*
451
452 **What do you think?** (circle one)

453   Fewer people would do this   This is about right   More people would do this

454 **References.**

455 Nettle D, Colléony A, Cockerill M. 2011 Variation in cooperative behaviour within a single city. *PloS*
456   *One* **6**:e26922. doi:10.1371/journal.pone.0026922.

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