Supplementary Materials for:

Exploration of Social Reinforcement for Gambling in Single Case Designs

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Author Note

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Table 2

*Bigger bets within conditions*

| Conditions in Experiments I and II | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| A | B | A | B | C | D | B | E | F | E | F |

Participants

| | A | B | A | B | C | D | B | E | F | E | F |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | 3,23 | 4,16 | 4,23 | 5,27 | | | | | | | |
| 02 | 16,125 | 21,186 | 11,76 | 22,196 | | | | | | | |
| 03 | 9,60 | 12,58 | 11,60 | 9,33 | | | | | | | |
| 04 | 1,5 | 4,22 | 2,10 | 5,25 | | | | | | | |
| 05 | 11,83 | 21,197 | 5,39 | 8,75 | 10,97 | | 12,118 | | | | |
| 06 | 9,66 | 15,140 | 3,25 | 7,61 | | 7,65 | 9,82 | | | | |
| 07 | 9,59 | 14,117 | 5,41 | 7,63 | | | | 3,23 | 6,43 | | |
| 08 | 6,31 | 9,72 | | | | | | 11,45 | 13,82 | 5,24 | 7,50 |

| Conditions in Experiment III | | | |
|---|---|---|---|
| G | H | G | H |

Participant

| | G | H | G | H |
|---|---|---|---|---|
| 08b | 12,75 | 19,135 | 7,62 | 17,135 |

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*Note:* The numbers are the [number of bigger bets, total bigger bet amount] within each condition. The bigger bets are reported for each participant, with the exception of Participant 4, for whom the contingency was for lower bets. Participant 1 did not have a bigger bet contingency in place in the social conditions, but her progressive bets are reported here for informational purposes (For Participant 1, the contingency was on simply betting). The condition notations are as follows: (A) is Baseline, (B) is Social, (C) is Win Reduced, (D) is Sound off, (E) is Baseline Value, and (F) is Social Value. The subscripts indicate the presentation of the condition to a participant. The order (ABABCDBEFEF) is the appearance of the conditions in sequence and appearance in this article. The lower portion of the table includes the same information for Experiment III. The condition notations are as follows: (G) is Control Confederate, (H) is Familiar Confederate.

Effect Size calculations for participants with the Social Positive Reinforcement Contingency

*Effect Sizes of Social Positive Results*

|  | Pairwise Comparisons in Experiments I and II | | | | |
|---|---|---|---|---|---|
|  | $A_1B_1$ | $A_2B_2$ | $C_1/D_1B_3$ | $E_1F_1$ | $E_2F_2$ |
| Participants | | | | | |
| 02 | .275 | .747 | | | |
| 05 | .359 | .179 | .085 | | |
| 06 | .394 | .249 | .177 | | |
| 07 | .386 | .152 | | .506 | |
| 08 | .448 | | | .443 | .138 |

|  | Pairwise Comparisons in Experiment III | |
|---|---|---|
|  | $G_1H_1$ | $G_2H_2$ |
| Participants | | |
| 08b | .284 | .195 |

*Note*: Effect sizes are reported for the participants who experimentally replicated the social positive contingency effect. The pairwise comparisons are for all bets. The effect size is Ratio of Distances (RD; Carlin & Costello, 20018). The effect sizes are small; an established critical value from Carlin & Costello (2018) is not relevant to these data, because of the ceiling and floor effects of 0 and 10 (see discussion in Carlin & Costello, 2018). The condition notations are as follows: (A) is Baseline, (B) is Social, (C) is Win

Reduced, (D) is Sound off, (E) is Baseline Value, and (F) is Social Value. The subscripts indicate the presentation of the condition to a participant.

Data for dropped Participant.

This participant never contacted the contingency; they bet 1 credit for every trial. The

participant is labeled Participant 10 in the figure, this is an old numbering system for our

laboratory – this is not indicative of being the 10$^{th}$ participant in the present study.
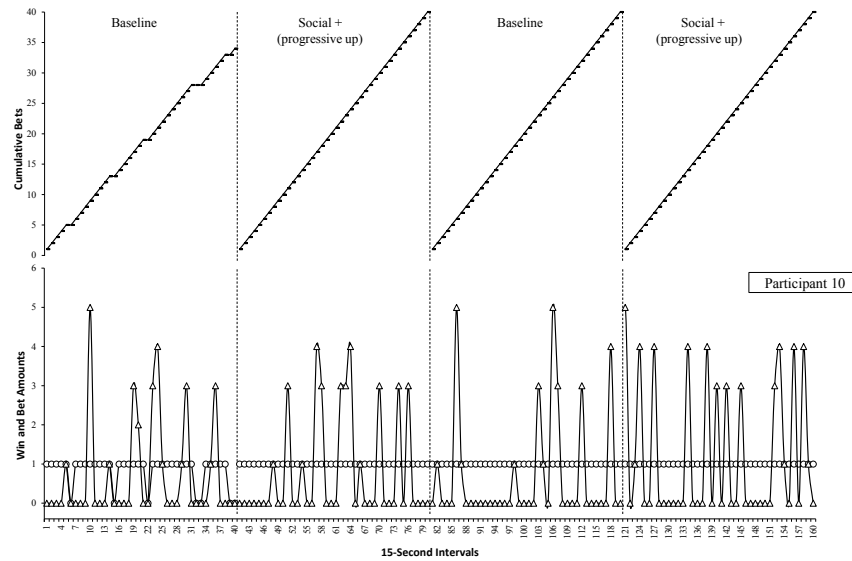
Study Protocol for training

**Social 21 protocol, Dr Costello                    Behavior Analysis Lab**
If you are running participants on a Saturday, you will need to prop a door to SCI open and inform people of where to get into the building. Be sure they can contact you easily via email if they have trouble getting into the building.

In the Applied Psychology Center; in Dr. Costello's Gambling Laboratory:
Use a consent and forms packet. Go through the consent with the participant. Offer to let them have the first two pages of the consent form, keep the signature page. **Write the participant ID on the signature page**.

The participant may sit in the waiting room and fill out the questionnaires after consent.

During this time, set up the slot machine program at Station 1 in the session room.

Station 1 is on the right, Station 2 is on the left.

On the desktop, open 'Concurrent Slot Earn M1' program and set up appropriately:
use your initials and appropriate participant ID, and write the correct condition, use session 2/3 (session 1 will present unnecessary blank instruction screen).
Example:
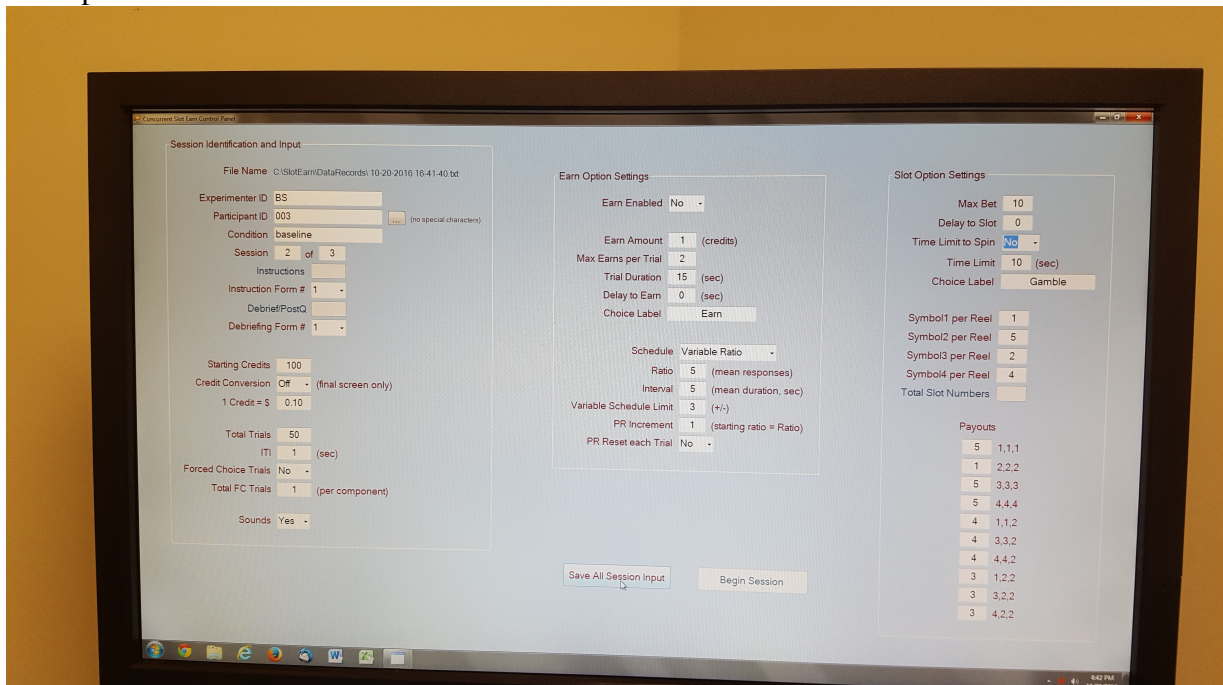


Key points – left column – starting credits 100, total trials 50 (enough that it wont run out before time runs out; session will end at predetermined time [or as data stabilize], not via number of trials)
Middle column: earn enabled: no
Right column: Max bet: 10, no delay, no time limit, standard for the rest

Once the screen is set up, push ' Save All Session Input' then 'Begin Session'. The next screen will be blank except for a button that says BEGIN.

Set up a game at Station 2, but this is for the confederate, use similar settings.

Participants will then be brought into the session room from the waiting room (when they finish filling out the forms) and will sit at Station 1.

Bring in a confederate from the next room. Settle them at Station 2, introduce the two.

Tell the participant that you will start in a moment, but first you will read and explain some instructions to them.

"You are about to play a simulated gambling game. Do not press "begin" until I tell you it is okay. Once you push "begin" you will see a slot machine interface on screen. You may bet up to 10 credits at a time. The credits are imaginary, please act as if they are real. You will start with 100 credits. To play the game, you must set an amount to bet, press the "set bet" button, and then press the "spin" button with your mouse. When you press "spin," the game will play like a regular slot machine, and you will win or lose credits. Play as much or as little as you like. I will monitor the game for 10 minutes, then we will take a break. If you run out of credits, let me know. Do you have any questions?"

When ready to begin, walk slightly out of the door tell the participant and confederate they may push the 'begin' button. You may sit at a waiting room chair, just be able to observe and take notes.

When the participant hits begin, begin timing 10 minutes.

The participant must add credits, set bet, then click 'Spin'. When the participant clicks Spin, note the bet amount (example tracking form at the end). Note every 15 seconds if an interaction occurs. (If two observers, observe independently)

If the session has to stop mid-session for any reason, pause a timer and continue when ready to finish the 10 minutes.

After the session, ask the participant to wait in the waiting room or go to the bathroom if they need to, and send the confederate into a different room off of the waiting room.

Then go to station 1, and push 'cntrol alt delete' and log off or use one of the other shortcuts. Promptly log back in (no password), and go to C – Slotearn – DataRecords. Your game data is there. **Rename the file to** "Participant ID Session condition". For example, "01 01 baseline".

Note the bet amounts, and decide if there is room to go up, the next session will be contingent progressive for more bets. If theres no room (mostly high bets), make the next condition contingent on betting less progressively.

Then reopen the 'Concurrent Slot Earn M1' program, and set up the same as before. Reset the game at station 2 as well.

When ready discuss the next session (contingent on higher or lower bets) with confederate quietly in side room. Then, bring the participant and confederate back in the session room.

Next is the contingent social condition.

Bring in a confederate like before, ideally the confederate will be a different person, if not possible that is fine, but note if the confederate is the same or not.

Same set up as before, and this time, Tell the participant that you will start in a moment, but first you will read and explain some instructions to them.

The instructions are the same, just frame as 'same as before' and re-read.

When this session is over, take another break, then run baseline again. Then run social again.

When you are finished, thank the participant, debrief, and make sure they know how to get out of the building. Walk them if needed.

Now, open the excel sheet 'data template', and the two data files on station 1. Fill in the data template with bets and bet amounts, and wins when they occur from the data files. In the 'assessment' tab, fill in the information from the forms after consent. Note the observer form numbers (place those with the other hard copy materials in the Participant's physical folder).
Create a Save the excel file with the participant ID and save it in the Participant Files folder.

Training notes

Baseline:
Confederate – come in, say hello, sit at station with eyes on your computer, note the timer location or use your watch timer covertly. As session starts: Respond to questions briefly (yes, no, not sure), if no questions say a naturalistic variation on some observational phrase every 15 seconds.

"It's warm in here" (or something about temperature)

"I won" (variants fine – "there it is" etc)

"I lost" (variants fine)

"I should get a game like this"

"I like this game"

etc. (trivial observations or self-directed statements)


Contingent positive:
Interactions are contingent on progressive betting (described as higher). Progressive betting: A bet higher than the last bet results in interaction. Once the bet is at the ceiling (10), the same bet gets the consequence. If the bet then drops lower, no consequence is provided. Next bet must again be higher than the previous to receive consequence.

Approval (naturalistic variations):

"Nice"

"That's the way"

"Go big or go home"

"Just need one"

"Steady's the way"

etc. (approving, but not directing)