Web Appendix for "When Harry Bet With Sally: An Empirical Analysis of Multiple Peer Effects in Casino Gambling Behavior"

A. Robustness check to peer construction criterion

A potential issue with inferring rather than observing the dyads is that there could be individuals being incorrectly classified as peers. We therefore tested the robustness of our results by varying the common (overlap) visits to 2, 3, 5 or 6 (instead of 4) and find no material difference in our findings.

		overlap=4 sample=1626 dyads		overlap=2 sample=2340 dyads		overlap=3 sample=1937 dyads		overlap=5 sample=1402 dyads		overlap=6 sample=978 dyads	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Own Factors	$Intercept$	3.98	0.18	3.94	0.13	3.92	0.18	3.89	0.18	3.83	0.22
	$ln(q_{At-1}+1)$	0.17	0.01	0.19	0.01	0.18	0.01	0.17	0.01	0.16	0.01
	$Earn_{At-1}$	0.02	0.04	0.03	0.03	0.02	0.04	0.04	0.04	0.05	0.05
	$Jackpot\ self_{At-1}$	0.19	0.10	0.18	0.08	0.21	0.09	0.20	0.11	0.25	0.10
	$Promo_{At}$	0.56	0.06	0.55	0.05	0.57	0.06	0.58	0.08	0.58	0.07
Endogenous Peer Effect	$ln(q_{Bt}+1)$	0.78	0.01	0.74	0.01	0.77	0.01	0.80	0.01	0.81	0.01
Exogenous Peer Effect	$Earn_{Bt-1}$	0.01	0.02	0.01	0.02	0.01	0.02	0.00	0.03	0.01	0.03
	$Jackpot\ self_{Bt-1}$	-0.06	0.05	-0.06	0.05	-0.05	0.06	-0.07	0.07	-0.07	0.07
	$Promo_{Bt}$	-0.24	0.07	-0.26	0.03	-0.25	0.03	-0.26	0.04	-0.28	0.04
Peer Presence Effect	$Intercept$	-3.64	0.10	-3.44	0.09	-3.54	0.10	-3.70	0.10	-3.85	0.12
	$ln(q_{At-1}+1)\_I_{Bt}$	-0.11	0.01	-0.12	0.01	-0.12	0.01	-0.12	0.01	-0.10	0.02
	$Earn_{At-1}\_I_{Bt}$	0.03	0.05	0.03	0.03	0.04	0.04	0.03	0.05	0.02	0.05
	$Jackpot\ self_{At-1}\_I_{Bt}$	-0.04	0.13	-0.03	0.09	-0.08	0.10	-0.07	0.13	-0.09	0.12
	$Promo_{At}\_I_{Bt}$	-0.24	0.07	-0.22	0.06	-0.26	0.07	-0.27	0.09	-0.25	0.08
Excluded Variable	$Jackpot\ stranger_{At}$	0.33	0.02	0.36	0.02	0.34	0.02	0.34	0.02	0.33	0.02
Environmental factor	$EnvCtrl-(A)-(B)t$	0.07	0.02	0.08	0.02	0.08	0.02	0.08	0.02	0.11	0.03
Counterfactual Estimates	*Scenario 1*	22%	7%	25%	5%	24%	5%	22%	7%	25%	9%
	Scenario 2	6%	2%	6%	2%	6%	2%	6%	2%	6%	3%

Scenario 1: Total bet money increase due to the elimination of negative exogenous peer effect on promotion.

Scenario 2: Total bet money increase due to the reallocation of promotion to more influential person.

B. Robustness check to zero bet amount observations

Based on our conversations with the casino management, our understanding is that sometimes people sign in, get distracted and forget to sign out for a while. Additionally, gamblers sign in sometimes if they are unfamiliar with a particular machine, examine the specific games available on this machine and then decide to not play. In both cases, these events get recorded as zero amount played. It is important to note that such observations represent less than 2.5% of observations and 0.67% of linkages in our estimation sample. We therefore do not think that our chosen sample includes spurious linkages. We tested this by deleting these observations and linkages from our sample and find that our results on peer effects do not change in any material sense (see table below).

(20,000 iterations with 15,000 burn in)

		Sample size: 1,626 dyads			Sample size: 1,615 dyads	
		With observations of zero bet			**Without** observations of zero bet	
		Mean	SD		Mean	SD
Own Factors	$Intercept$	3.98	0.18		4.78	0.18
	$ln(q_{At-1}+1)$	0.17	0.01		0.15	0.01
	$Earn_{At-1}$	0.02	0.04		0.00	0.04
	$Jackpot\ self_{At-1}$	0.19	0.10		0.29	0.11
	$Promo_{At}$	0.56	0.06		0.44	0.06
Endogenous Peer Effect	$ln(q_{Bt}+1)$	0.78	0.01		0.79	0.01
Exogenous Peer Effect	$Earn_{Bt-1}$	0.01	0.02		0.02	0.03
	$Jackpot\ self_{Bt-1}$	-0.06	0.05		-0.03	0.05
	$Promo_{Bt}$	-0.24	0.07		-0.24	0.03
Peer Presence Effect	$Intercept$	-3.64	0.10		-4.07	0.09
	$ln(q_{At-1}+1)\_I_{Bt}$	-0.11	0.01		-0.10	0.01
	$Earn_{At-1}\_I_{Bt}$	0.03	0.05		0.06	0.05
	$Jackpot\ self_{At-1}\_I_{Bt}$	-0.04	0.13		-0.19	0.12
	$Promo_{At}\_I_{Bt}$	-0.24	0.07		-0.15	0.07
Excluded Variable	$Jackpot\ stranger_{At}$	0.33	0.02		0.28	0.02
Environmental factor	$EnvCtrl-(A)-(B)t$	0.07	0.02		0.02	0.03

C. Robustness check to inclusion of peer presence effect

We also ran our model without the peer presence effect just to ensure that its inclusion was not biasing the other effects. The results below suggest that the inclusion of the peer effect does not have a material effect on our other results.

		Model **with** Peer Presence Effect			Model **without** Peer Presence Effect	
		Mean	SD		Mean	SD
Own Factors	$Intercept$	3.98	0.18		0.55	0.20
	$ln(q_{At-1}+1)$	0.17	0.01		0.06	0.01
	$Earn_{At-1}$	0.02	0.04		0.04	0.03
	$Jackpot\ self_{At-1}$	0.19	0.10		0.13	0.06
	$Promo_{At}$	0.56	0.06		0.31	0.04
Endogenous Peer Effect	$ln(q_{Bt}+1)$	0.78	0.01		0.77	0.01
Exogenous Peer Effect	$Earn_{Bt-1}$	0.01	0.02		0.02	0.03
	$Jackpot\ self_{Bt-1}$	-0.06	0.05		-0.06	0.07
	$Promo_{Bt}$	-0.24	0.07		-0.25	0.04
Peer Presence Effect	$Intercept$	-3.64	0.10		NA	NA
	$ln(q_{At-1}+1)\_I_{Bt}$	-0.11	0.01		NA	NA
	$Earn_{At-1}\_I_{Bt}$	0.03	0.05		NA	NA
	$Jackpot\ self_{At-1}\_I_{Bt}$	-0.04	0.13		NA	NA
	$Promo_{At}\_I_{Bt}$	-0.24	0.07		NA	NA
Excluded Variable	$Jackpot\ stranger_{At}$	0.33	0.02		0.30	0.04
Environmental factor	$EnvCtrl-(A)-(B)t$	0.07	0.02		0.06	0.03