Culture and Risk Perception: The Effect of Risk Framing on Financial Deception

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Abstract

This study examines the role of culture in risk perception and unethical behavior. Chinese and American participants played a competitive game with multiple rounds where they had to self-report tax at each round. They were randomly assigned to conditions where they were told that they may be audited randomly or systematically. All received feedback that they are losing. Chinese participants engaged in riskier behavior in the systematic condition than in the random condition. Americans' risky behavior did not differ by condition when facing loss.

Introduction

- Previous studies have shown that East Asians differ from Americans in cognitive styles. Americans tend to perceive more personal control than East Asians do in explaining social events (Nisbett et al., 2001). The current study aims to investigate how Americans and East Asians respond to different types of risk framing in their decision on performing dishonest behavior.
- Hypotheses: Americans would cheat more when the auditing is systematic because they tend to believe in personal control, whereas the Chinese would not differ between the conditions. This study extends previous work (Andreoni et al. 1998) and may reveal cultural differences in risk framing and cheating behaviors under different situations.
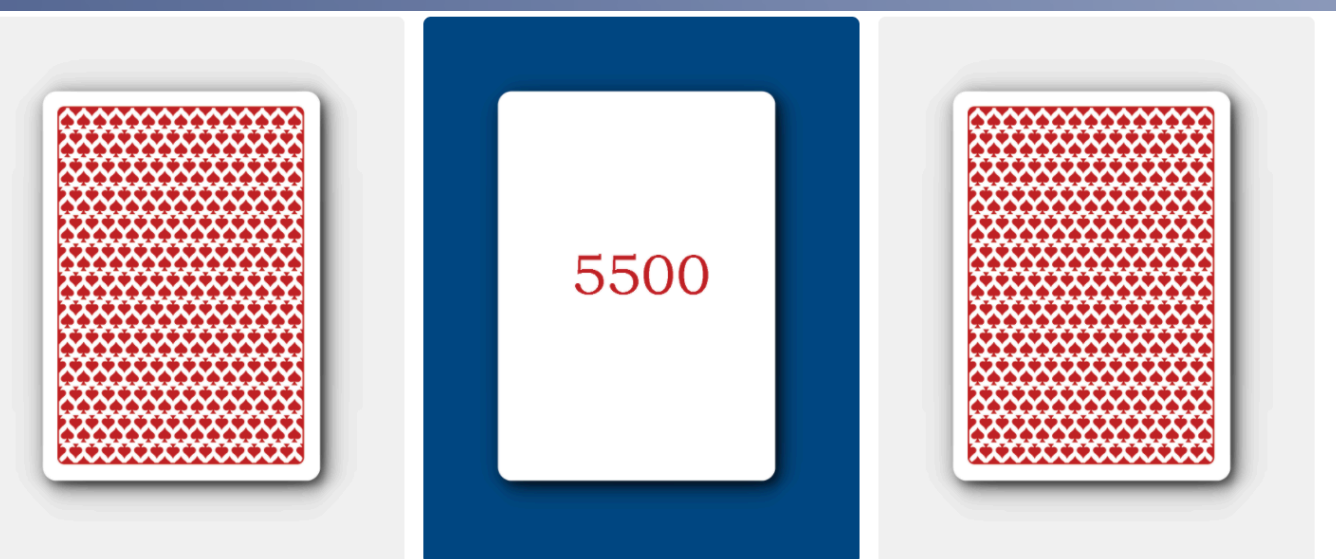
Figure: Participants flip a card to determine their earning and make the tax-report
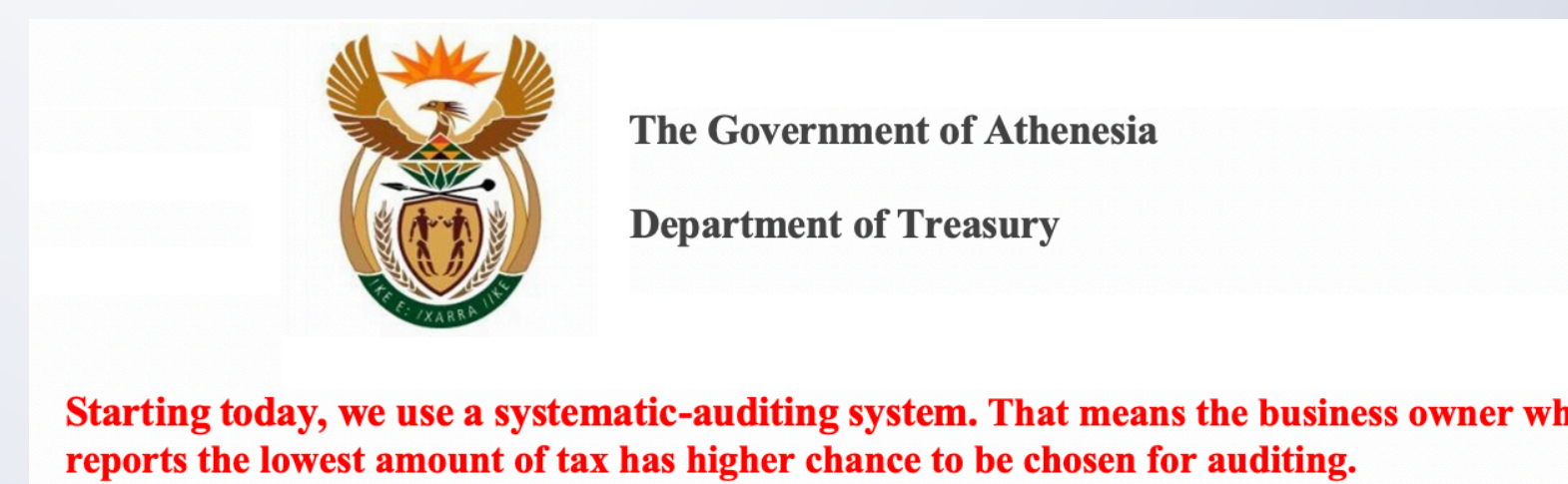* Special Thanks to Ye Jiaxi for developing the game.

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Method

- 401 participants (both Chinese & American) were recruited online to engage in a simulated business game under partial deception.
  - They were randomly assigned to one of two conditions: Systematic vs. Random auditing conditions.
  - A simulated government instruction notified the participants that it applied an auditing system that may discern who has cheated.
- **Systematic condition**: participants were told that the audit would select out two players according to the amount of their reported tax.
- **Random condition**: the audit would randomly select out two players.
- During the simulation game, participants were told to flip a card to determine their earning score in the round.
  - All the earning scores are pre-assigned.
  - The system would show them all participants' average earnings.
  - In round 1 & 2, the participant may earn lower than the average score.
  - Start from round 3, their cumulative score would reach the average, and finally stop at 20% higher than the average.
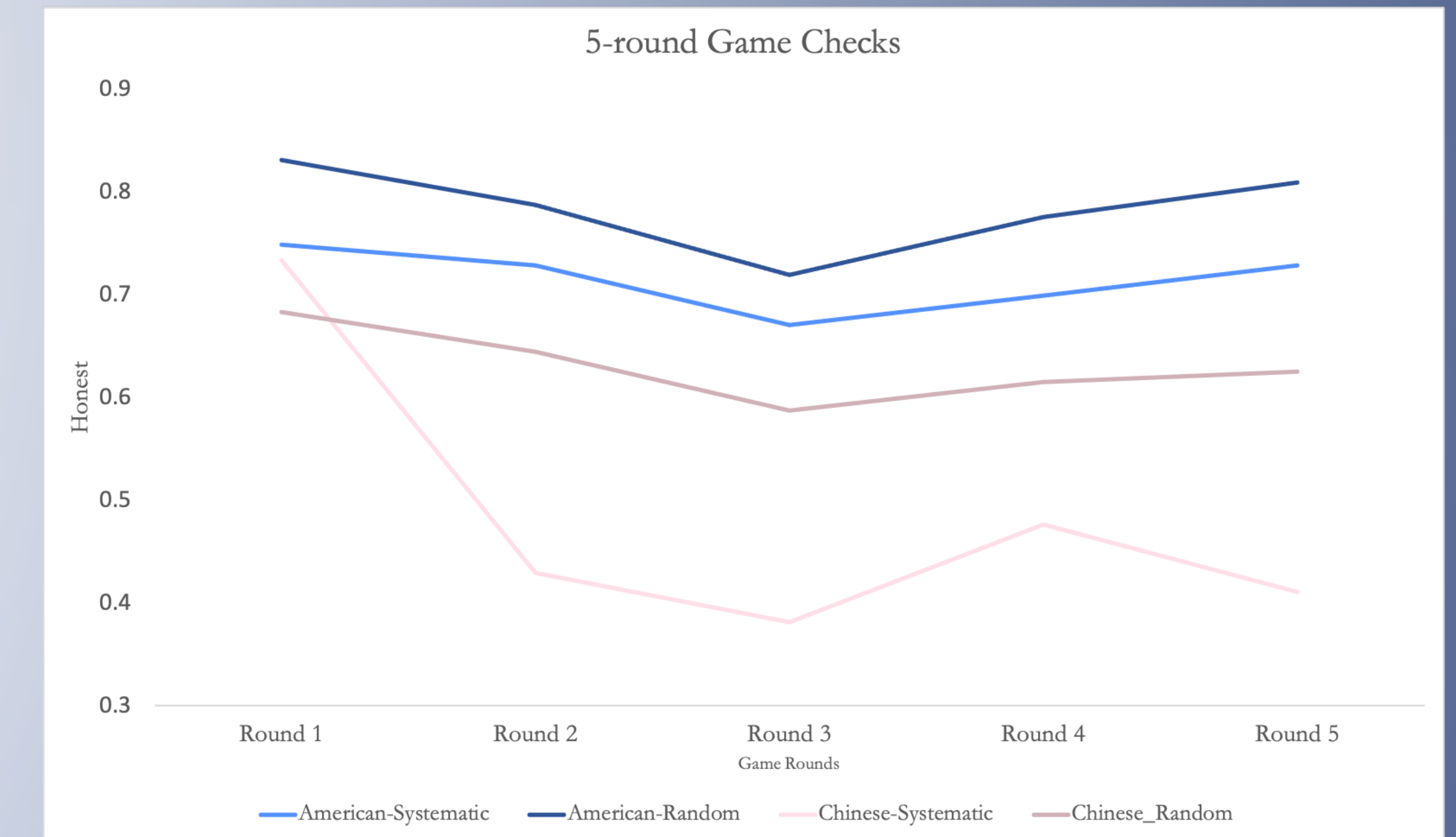
Results (Main Effect)

- This study used a 2 (culture: American vs. Chinese) X 2 (regulation: systematic vs. random) between-subjects design.
- Pairwise comparison among all five rounds honesty checks: An order effect on participants' cheating behavior in all five game rounds, $F = 14.726$, $p < .000$.
- There is no main effect between culture and condition $F = .947$, $p = .331$, but there is a significant effect between game honesty checks by culture, $F = 24.377$, $p = .000$, and by regulation type, $F = 7.691$, $p = .006$.

Figure: The example of instruction in systematic auditing condition.

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Starting today, we use a systematic-auditing system. That means the business owner who reports the lowest amount of tax has higher chance to be chosen for auditing.

Results (Between Conditions)

- A repeated measures ANOVA was used by the type of regulation (Systematic vs. Random) and culture (American vs. Chinese) as Between-Subjects Factors and having all game honesty checks (round1-5) as Within-Subjects Variables.
  - After completing a Multivariate Tests: A significant three-way interaction among regulation type, culture, and honesty checks $F = 4.700$, $p= .001$.
- In order to unpack the three-way interaction, researchers have split the file by culture to determine how the order is affected by the regulation within a given culture. Researchers found the game honesty check significantly affected by the regulation type, $F = 7.691$, $p = .006$, and culture, $F = 24.377$, $p = .000$.
- Researchers split data files by culture. The General Linear Model was used.
  - Americans were not influenced by the regulation type. For American participants. No significant interaction between game check and regulation, $p = .932$ indicates that regulation type does not have impact on Americans' dishonest behavior.
  - Chinese participants were more likely to be influenced by the regulation type. There is a highly significant interaction between game round check and the regulation type. $F = 6.016$, $p = .000$.

American Sample demographics: $N_{Total} = 192$	Recruited from UCSB SONA
Age	**Ethnicity**
Mean: 23.03; SD: 4.11	White: $N = 98$ (51.0%)
Gender	**Manipulation**
Male: $N = 83$ (43.2%)	Systematic auditing: $N = 103$ (53.6%)
Female: $N = 108$ (56.3%)	Random auditing: $N = 89$ (46.4%)

Chinese Sample demographics: $N_{Total} = 209$	Recruited via We-Chat Official Platform
Age	**Ethnicity**
Mean: 21.42; SD: 2.30	Han: $N = 203$ (97.1%)
Gender	**Manipulation**
Male: $N = 64$ (30.6%)	Systematic auditing: $N = 105$ (50.2%)
Female: $N = 143$ (68.4%)	Random auditing: $N = 104$ (49.8%)

5-round Game Checks

— American-Systematic — American-Random — Chinese-Systematic — Chinese_Random

Conclusions

1. Regulation type impacts Chinese participants' dishonest behavior more than American participants. Chinese participants tend to do more dishonest behavior in the systematic condition than random condition, especially for game rounds 2, 3, and 5.
2. Contrary to our hypothesis, American participants do not show any significant difference in dishonest behavior between two regulation types (systematic vs. random).
3. Chinese participants, instead of showing more dishonest behavior in random regulation, show more dishonest behavior in systematic regulation.
4. Only Chinese participants in the systematic auditing system tend to cheat more in the last round of the game .
5. Overall, participants tend to take more dishonest behaviors in the conditions that their earning score is behind the average (round 2 & 3).

Discussions and Future Directions

- Participants might do more dishonest behavior in rounds 2 & 3 than the other rounds due to loss aversion effect. At the end of round 1 & round 2, participants were shown their performance compared to others, and their performance score is always lower than the average. However, in the current study, researchers do not have any measure on loss aversion effect.
- A possible explanation of Chinese participants are more deceitful in systematic than random condition might be because they feel the systematic auditing system is more self-controllable than random auditing

- **Future directions**: Future researchers may include a measurement on testing the loss aversion effect's influence on participants' dishonest behavior. Researchers may also explore further on participants' individual differences (ex. Free will belief)'s impact on their dishonest behavior.

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