



公共財自願捐獻  
Public Goods Game

### Game Rules (遊戲規則)

- There will be **SEVERAL** rounds (本活動將進行 **多** 個回合)
- Each group receives **4** cards (same number, **2B2R**)  
(各組會發到 **4** 張牌面數字相同的撲克牌: 兩**紅**/兩**黑**)
- In each round, each group gives me **2** cards  
(每回合開始時, 主持人會去跟各組收取 **2** 張撲克牌)
- You have to decide which 2 cards to **DONATE**  
(各組要決定繳交哪兩張牌給主持人以存入 **公庫**)
- Donate cards **faced down** so others cannot see  
(繳交撲克牌時注意 **牌面朝下** 以確保他組無法看到你們繳出的牌組內容)

## Game Rules (遊戲規則)

- Payoff depends on number of **red** cards **donated**  
(各組的報酬決定於繳出多少張 **紅** 牌給 **公庫**)
- Value of **Red** cards **kept differ** from that **donated**  
(**紅** 牌留在手中 (**私庫**) 跟存入 **公庫** 的報酬 **不同**)
- In the beginning, each **Red** card kept yields **5** Ecoins  
(在前幾個回合中，每張 **私庫** 中的 **紅** 牌價值 **5** Ecoins)
- **Red** card **donated** yields **10** Ecoins for all groups  
(**公庫** 中每張 **紅** 牌價值 **10** Ecoins，**各組** 都能得到)

## Game Rules (遊戲規則)

- Ex: 8 groups each donate 1**R**1**B** and keep 1**R**1**B**  
(有 8 組參與遊戲，每一組都繳出一**紅**一**黑**存入公庫，並留下一**紅**一**黑**在手上)
- ➔ **8** cards donated (=80 Ecoins); each group earn **85**  
(公庫中共有 **8** 張紅牌總價值 **80** Ecoins，各組得分 **85**)
- Your cards will **not** be revealed when counting and be returned **faced down**. (主持人在計算公庫中有多少紅牌時，**決**不會透露各組所繳出的牌組內容，發回牌組時也會嚴守 **牌面朝下** 原則)
  - **Black** cards are **worthless** & exist only to **conceal**.  
(**黑牌** **完全沒有** 點數價值，其存在目的僅在於 **保密**)



# Practice Round (練習回合) 2

$$\text{Group Earnings (小組報酬)} = 150 * \mathbf{R} \text{ kept} + 10 * \text{Total } \mathbf{R} \text{ donated}$$

(私庫紅牌數) (公庫紅牌 **總**數)

# Round (回合) 1

$$\text{Group Earnings (小組報酬)} = 20 * \mathbf{R} \text{ kept} + 10 * \text{Total } \mathbf{R} \text{ donated}$$

(私庫紅牌數) (公庫紅牌 **總**數)

## Round (回合) 2

$$\text{Group Earnings (小組報酬)} = 20 * \text{R kept} + 10 * \text{Total R donated}$$

(私庫紅牌數) (公庫紅牌 總數)

Allow 2 min Discussion  
(開放組間討論 2 分鐘)

## Round (回合) 3

$$\text{Group Earnings (小組報酬)} = 20 * \text{R kept} + 10 * \text{Total R donated}$$

(私庫紅牌數) (公庫紅牌 總數)

Allow 2 min Discussion & Reveal  
Donation (開放組間討論 2 分鐘，資訊公開)  
Round (回合) 4

$$\text{Group Earnings (小組報酬)} = 20 * \text{R kept} + 10 * \text{Total R donated}$$

(私庫紅牌數) (公庫紅牌總數)

Calculate Total Earnings  
(計算總得分)

## Discussion (小組討論)

- What did your group do in the real round?  
How many cards did you donate?  
(你們這一組在正式回合做了什麼的決策(繳出幾張紅牌到公庫)?)
- Explain your reason for this decision.  
(請解釋這些決策背後的思考邏輯或理由為何?)

## Discussion (小組討論)

- Did you discuss other considerations or have disagreements on how much to donate?  
(小組討論時你們有提及哪些考量? 在繳出幾張牌的決策上有出現不一致的看法嗎?)
- Did your decision differ from that of other groups?  
(請比較你們的決定跟其他各組的整體情況, 有沒有什麼不同?)

## Discussion (小組討論)

- What is the cost of donating one **R**?  
(繳出一張紅牌到公庫的代價是什麼?)
- What is the rate of return donating one **R**?  
(繳出一張紅牌到公庫的投資報酬率是多少?)
- Is it good for groups to donate (from a social standpoint)? Explain. (從所有組別的整体觀點來看，單一組別繳出紅牌到公庫是好事嗎？請解釋你的推理。)

## Discussion (小組討論)

- Some goods are non-rival (非敵對/共享), so adding another consumer does not reduce the utility of others consuming it.
- What are examples of non-rival goods in the real world? Do reds cards donated in the experiment count? Why or why not? (那些現實中的商品具有「非敵對性」？公庫的紅牌算嗎？為什麼?)



## Discussion (小組討論)

- Some goods are non-excludable (非排他), so one cannot prevent free-riders from enjoying it.
- What are examples of non-excludable goods in the real world? Do reds cards donated in the experiment count? Explain. (那些現實中的商品具有「非排他性」?公庫的紅牌算嗎? 請解釋。)

## Discussion (小組討論)

- If a firm produces something that is both non-rival and non-excludable, what problem will it face?
- (如果一家廠商生產的商品同時具有「非敵對」與「非排他」兩種特性，你認為這家廠商會面臨什麼樣的問題?)

## Discussion (小組討論)

- What did you discuss in the next-to-last round (when the experimenter left the room)? Did it affect your decision? Was the result of that round surprising to you? Why or why not?
- (在倒數第二回合主持人離開現場時，各組之間討論了些什麼？你們在決策時有受到這些討論的影響嗎？這個回合最後的結果有讓你感到驚訝嗎？如果有的話，為什麼驚訝呢？)

## Discussion (小組討論)

- Did your decision change in the last round (compared to the next-to-last round)? Why or why not? Was the result of this round surprising?
- (相較於倒數第二回合，你們在最後一回合的決策有沒有不同呢？有的話又是為什麼呢？這回合其他組的決策有讓你感到驚訝之處嗎？)

# Discussion (小組討論)

- What happens if donations are revealed?  
(當資訊公開的時候發生甚麼事情?)
- [Irrigation Game] How will things change if groups took Ecoins from the pool 1-by-1?  
(灌溉賽局: 如果改成讓各組輪流一個個從公庫中拿走任何數量的Ecoin?)
- Are there other ways to promote donations?  
(有其他辦法鼓勵更多捐獻嗎?)