Appendix 1: Subject instructions

We provided these written instructions to subjects when they were seated in the computer laboratory. Before experiments with subjects who had not previously played, we reviewed the instructions verbally, emphasizing: the procedure of the game; use of the chat room. eg. do not close the chat rooms in between rounds; that subjects should try to make as much money as they could; ethical considerations such as consensual participation, equal potential for all participants to earn money, the possibility of earning nothing; that there should be no communication outside of the chat room or between rounds; and that all proposals could be changed to the advantage of a new coalition of players, and that the purse is really $15 per round in contrast to the written directions.

Player Instructions for the Power Index Game

You're about to become a 'player' in an experimental game that investigates the influence that voting power of electoral groups has on democratic decisions. Confusing? A player could represent a political party and all its voters or a corporate board member where votes could be the number of your shares. The procedures are really quite simple and you get to make some big money!

The Game is as Follows:

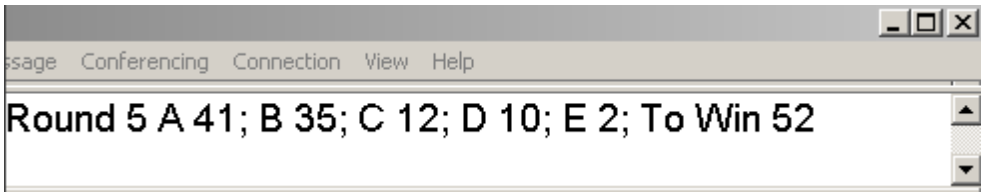
- You will be divided into groups, but you won't know whom you're playing against.
- You will communicate only through open First Class chat rooms (not private).
- You will be given a username such as player **A,** or **B**.
- A game consists of twelve rounds.
- In each round you are allocated a different number of votes, e.g. 12 or 2 votes.
- In each round your group has $15 to divide democratically.
- Division of money is done by offering a proposal, and accepting the proposal.
- Each round goes for a maximum of 5 minutes.
- At the end of all the rounds you get the sum of what you earned in CASH.

Your job is to be GREEDY and get as much money as possible!

Game Notation:

It is difficult to grasp the relationship between votes and power and so is getting used to the game's notation.

You will see a 'vote vector' like this:



This tells us that:

- We are in round 5
- Player A has 41 votes
- Player B has 35 votes etc…
- To win this game the players who agree on a proposal must have at least 52 votes combined to win.

Lets say you are playing for $10 in this round. To offer a proposal in the open chat room you could use the following notation:

Prop B1: A5 B5

This tells us that:

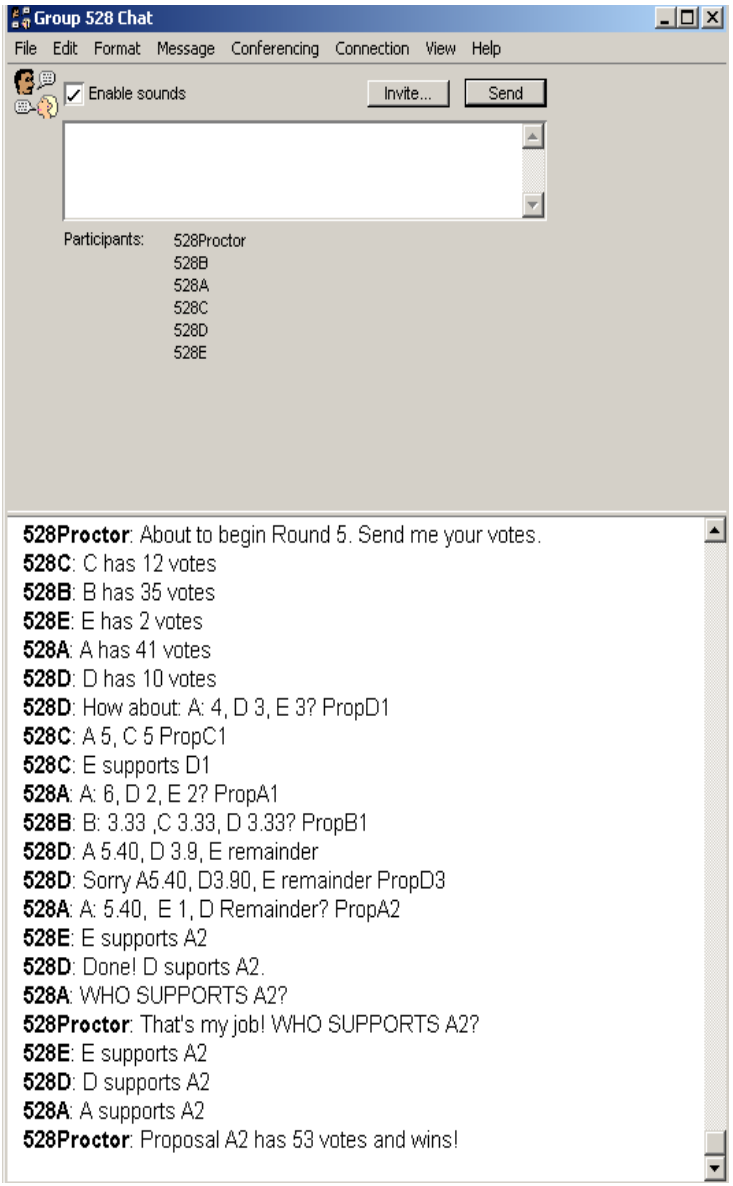
- Player B is making his/her first proposal (prop B1)
- Player B offers A $5 and B $5
- The combined votes (if A accepts) is 76, this proposal has majority votes and is hence accepted.

If Player A doesn't accept and player B wishes to make a second proposal it should be titled **Prop B2,** or just **B2.**

To accept a proposal Player A could write:

Supports B1

An example of a game for the above vote vector is as follows:



Note: Example is from the pre-study with a purse of $10.

Here you can see that the 'proctor' announces which proposal wins. Proposal A2 has since players A, D, and E all support A2 giving a total of exactly 53 votes. Whereby, **A** receives $5.40, **E** $1 and **D** $3.60. i.e. A 5.40, E 1, D remainder Prop A2

It is also interesting to note that just because you're allocated are large amount of votes doesn't necessarily mean you will get the biggest earnings! Player B with 35 votes completely missed out! On one hand, Player B should have (once he realised that he may not get anything) offered a proposal like; Prop B2: A 8, B 2. He could then get $2 instead of **0.** In this case player A could be greedier and accept this proposal, forgetting any proposals that included players C, D, or E!

Playing the Game

At the start of the game, the proctor will send a message:

"About to begin round 1. Send me your votes."

Reply stating your letter and number of votes:

"A has 41" or **"B has 35"** etc.

Then the proctor will announce the beginning of the round:

"Start round 1"

And the end of the round or when sufficient support is shown before a proposal:

"End of round Prop ## wins. Stop voting" At this point no more proposals can be offered or accepted

If a proposal appears to have enough votes to win, the proctor will call a vote. (If the proctor has not noticed support for a proposal, you may send a message pointing out that a proposal has received enough support.) The proctor will say, for example, 'Call for votes.' At that time you cast a vote for one proposal: 'I vote for PropE89'. There is no need to vote against a proposal because the Proctor will count no reply as a vote against. So, if you want a proposal to pass, vote for it even if it is your proposal. Proctors will declare if a proposal has passed or not.

- It is also not imperative that you stick to the notation examples, plain English is fine, however we have found that short hand is easily understood.
- A good message could be 'Prop F43 is nearly winning. Hey F, C&D and I will give you more. B 3.25 C 2.00 D 2.00 F 2.75: PropB46.'
- You can argue about a proposal, try to persuade other players to support your proposal…whatever gets you the most money!

You will want to find other players whose votes can be added to yours to equal or exceed the minimum votes required to divide the money. You get them to cooperate with you by offering them some of the money. Of course, you want to keep as much as you can for yourself. Other players will propose deals that give you nothing. Perhaps you can get some of them to share with you by offering them more than their current deal.

Once the game is over, wait for the proctor to give you instructions to begin a new game.

Game Rules:

- No Private Chat rooms are allowed!

- You are not allowed to make references to the world outside of the game. You may not use your names or any other real world identifier. You may not make side deals such as offers to do homework for or threats of violence to other players in the game. Players who violate these rules will forfeit their earnings and be removed from the game

- Be Greedy! Try to get as much money as possible. In previous experiments players have earned $60 after a couple of rounds! Don't feel sorry for players with a small amount of votes. You never know in the next round they could have the majority! Everyone has the same potential to earn money in the game.

- If you identify two proposals with the same number and one of them passes, we will give you the lower amount of money.

Summary:

Let us review. In each round of this game you will divide $15 between yourself and other players. You will get some votes which may change between every round. You will use a Group chat room to discuss how the money should be divided. You will vote on who gets the money in the Group chat. Whatever you earn in this game is yours to keep.

Consider some possible strategies. You could:

- Look at every player's votes to see what combinations can win.

- Who can help you? Who can you help?

- Are any players dependent on your votes in particular?

- Make offers quickly hoping to make big earnings before others catch on.

- If you are left out of a proposal, think of a way to divide the money so that some of the players in the proposal get more by voting with you and your votes are enough with theirs to create a majority. That is, break up coalitions that leave you out.

Please keep several points in mind:

- You are playing for real money.

- You may earn nothing in this experiment.

- You don't know who is in your group and you cannot speak during rounds

- Check the Votes Vector area because votes may change between rounds.

- Be careful not to close the group chat room or the vote vector.

- It is a majority of votes, not of players that decides how the money gets divided.

- You may not offer any deal that involves anything from outside of the game. That is, you cannot offer to do someone's homework or threaten them to make them cooperate with a deal.

- Every majority coalition of players can be broken.

- This game is divided into rounds. In each round, your group of players will divide $15 among yourselves.

- Each round will last up to five minutes, but may be shorter if players reach an agreement sooner. Any later and no one gets any money

- Keep an eye out for bogus proposals. Player B for example names a proposal 'D2'. This is technically possible, against the rules, probably pointless and silly, but it could cause confusion.

- Make sure that your proposals contain players that will give you at least the minimum amount of votes 'To win'. For example if B has 35 and C has 2 votes, To win is 52, then Prop B1 B5, C5 cannot work since the summation of the votes is only 37

- Make sure your proposals add up! If you're dividing $15, make sure that you don't offer A3 B9, C5. This adds up to $17…not $15