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# **Leadership without Leaders? Starters and Followers in On-line Collective Action**

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# Structure

- Background
- Hypotheses
- Experimental design
- Results
- Implications

# Background

- Much collective action takes place on-line – or has on-line element – lowers co-ordination costs – and need for well-resourced ‘leaders’
- But most on-line mobilizations fail (eg. e-petitions)
- Those that succeed depend on ‘starters’ – people with low thresholds for joining (Schelling, 2005)
- Revival of personality as explanatory variable for political behaviour (Mondak and Halperin, 2008; Mondak, 2010; Gerber et al, 2010; Margetts et al, 2011)
- Can we identify ‘starters’ - personality types consistently more likely to ‘start’ collective action – and ‘followers’?

# Petition mobilization curves

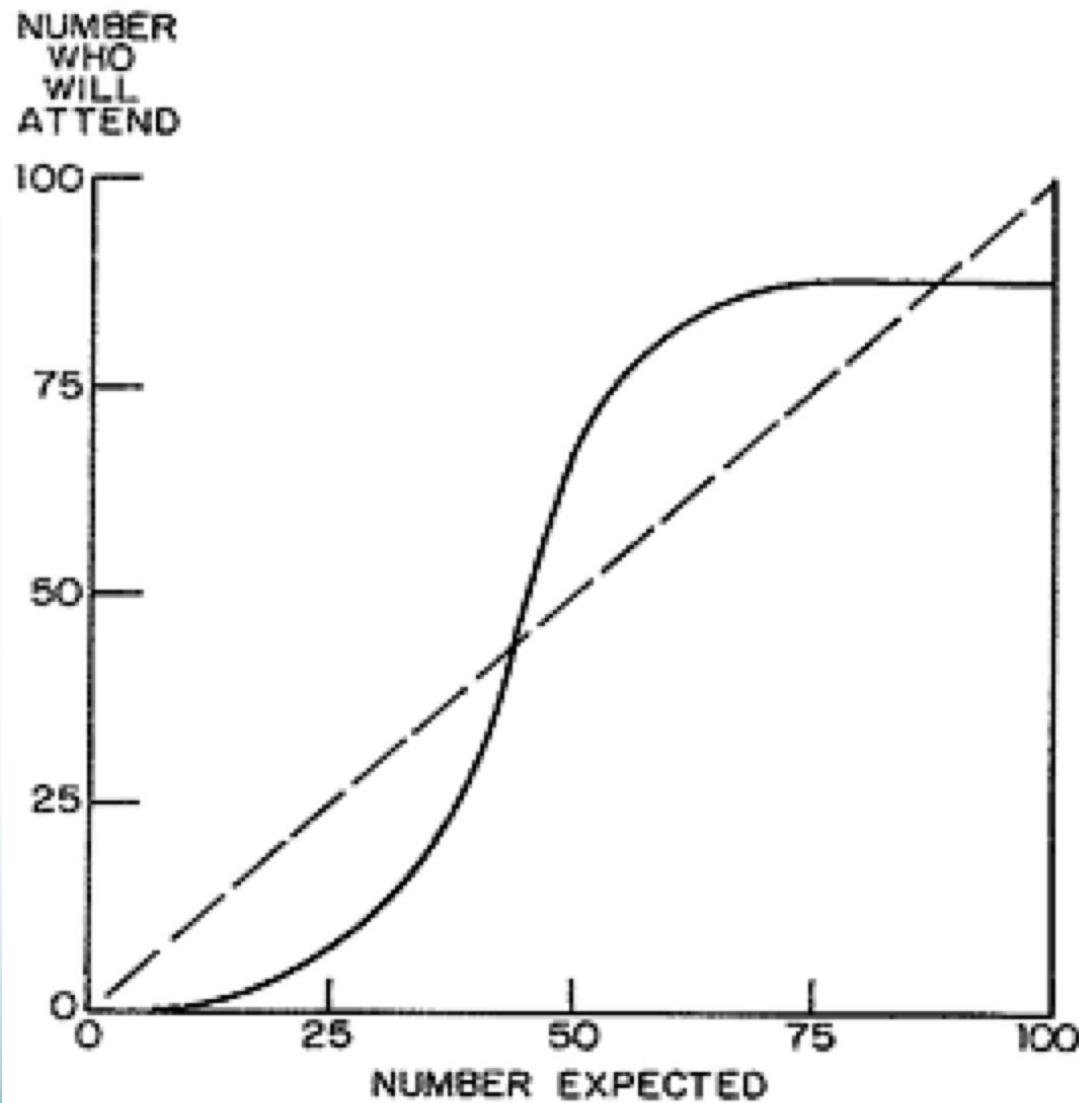


- *Collected from [petitions.number10.gov.uk](http://petitions.number10.gov.uk) for 6 months before it closed in May 2010 - relating to 8,326 petitions*
- *94 % petitions failed to attain 500 signatures required to elicit official response*
- *Signatures on day 1 is most important factor predicting success*

# Hypotheses

- People have heterogeneous **thresholds** (minimum number of other participants) for joining collective action
- **Thresholds** and **willingness to start** will vary according to personality
- People with high **internal locus of control** – will have lower thresholds than other personality types – but other personality traits could be important too ('Big 5' personality traits, social value orientation)

**Relationship between participation and expected participation according to Schelling, *Micromotives and Macrobehaviour* (1978, 2005)**



# Experimental Design I

- Laboratory-based experiment
- Subjects divided into small groups (typically 10)
- Public goods game
  - Subjects get 10 tokens for every round
  - Presented with local public goods scenarios (eg. clearing snow)
  - Extra pay out when 60% reached - highest payout if free-ride
  - Pay out on one round only - lottery
- Control - no information
- 2 treatments – **social information** and visibility
- Subjects randomly assigned across groups (never know which group in) and across treatments and control


# Experimental Design II

- Social Information Treatment (proxy for 'number expected') - subjects given real-time information as to how many others have contributed
- Post-experiment questionnaire includes demographics, agreement with and importance of issue – and personality
  - Locus of control (Rotter score; internal/external)
  - Social value orientation (individualistic/co-operative)
  - 'Big 5' personality traits (extraversion, openness, conscientiousness, agreeableness, emotional stability)

***Examine interaction between contribution amount, rank, personality***

# Experimental interface

## OxLab Experiment




Round 3

Your hospital trust is planning to close the Accident and Emergency department of your nearest hospital, so everyone in your area will have to travel much further if they require emergency assistance. A local group is campaigning to reverse the decision and are seeking funds to help them achieve their goals.

Time left: 33 seconds


So far, 3 participants have contributed.

Total Raised: 18  
Total needed for bonus payment: 30

 30%

How many tokens would you like to contribute?

0  1  2  3  4  5  6  7  8  9  10

Experiment Progress: 

## Building on

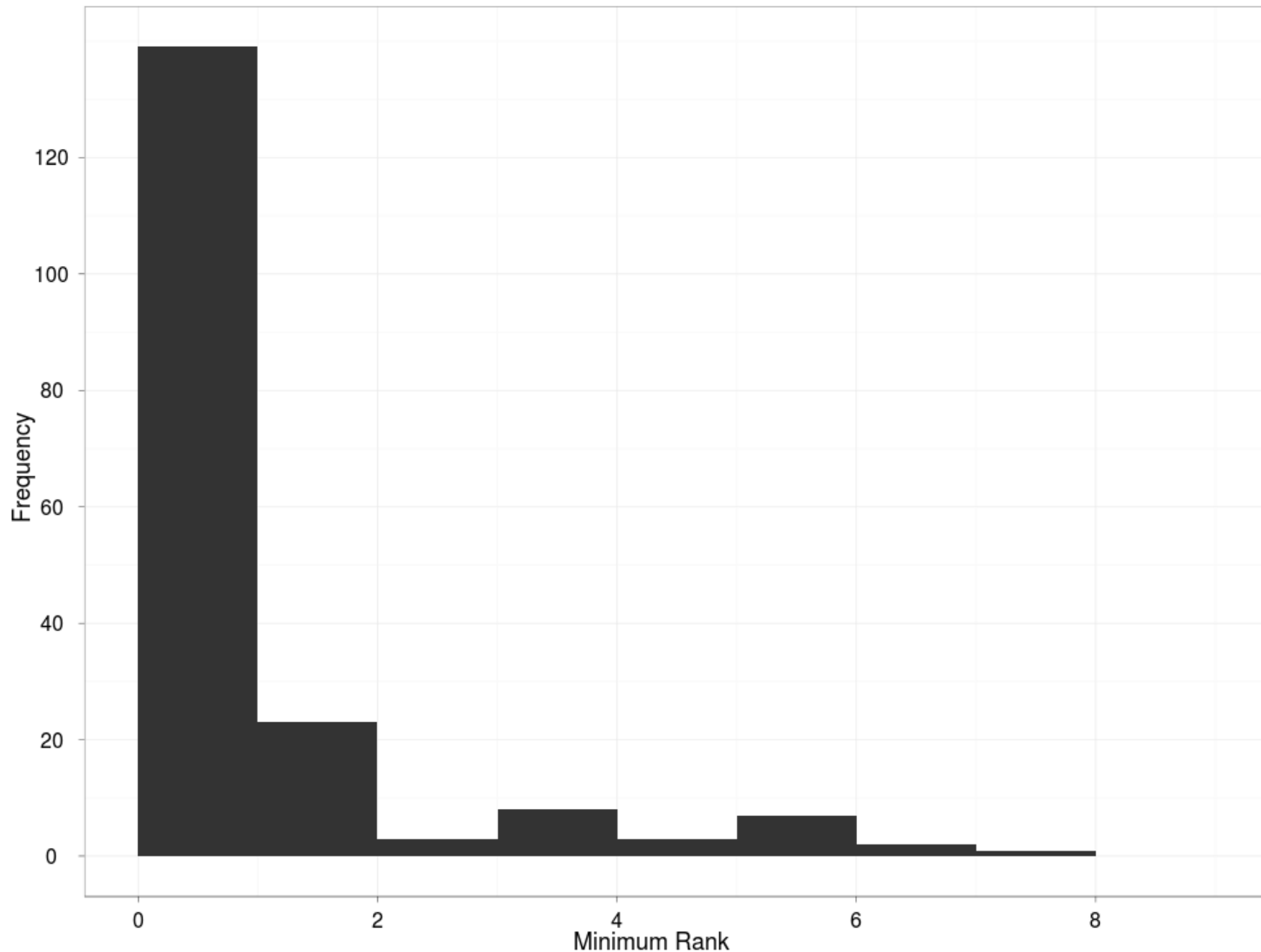
Margetts, H. John, P., Escher, T. and Reissfelder, S. (2011) 'Social Information and Political Participation on the Internet: an Experiment', *European Political Science Review*

Margetts, H. John, P. Reissfelder, S. and Hale, S. 'Applying Social Influence to Collective Action: Heterogeneous Personality Effects' (July 19, 2011). Available for comment at SSRN

### Key findings

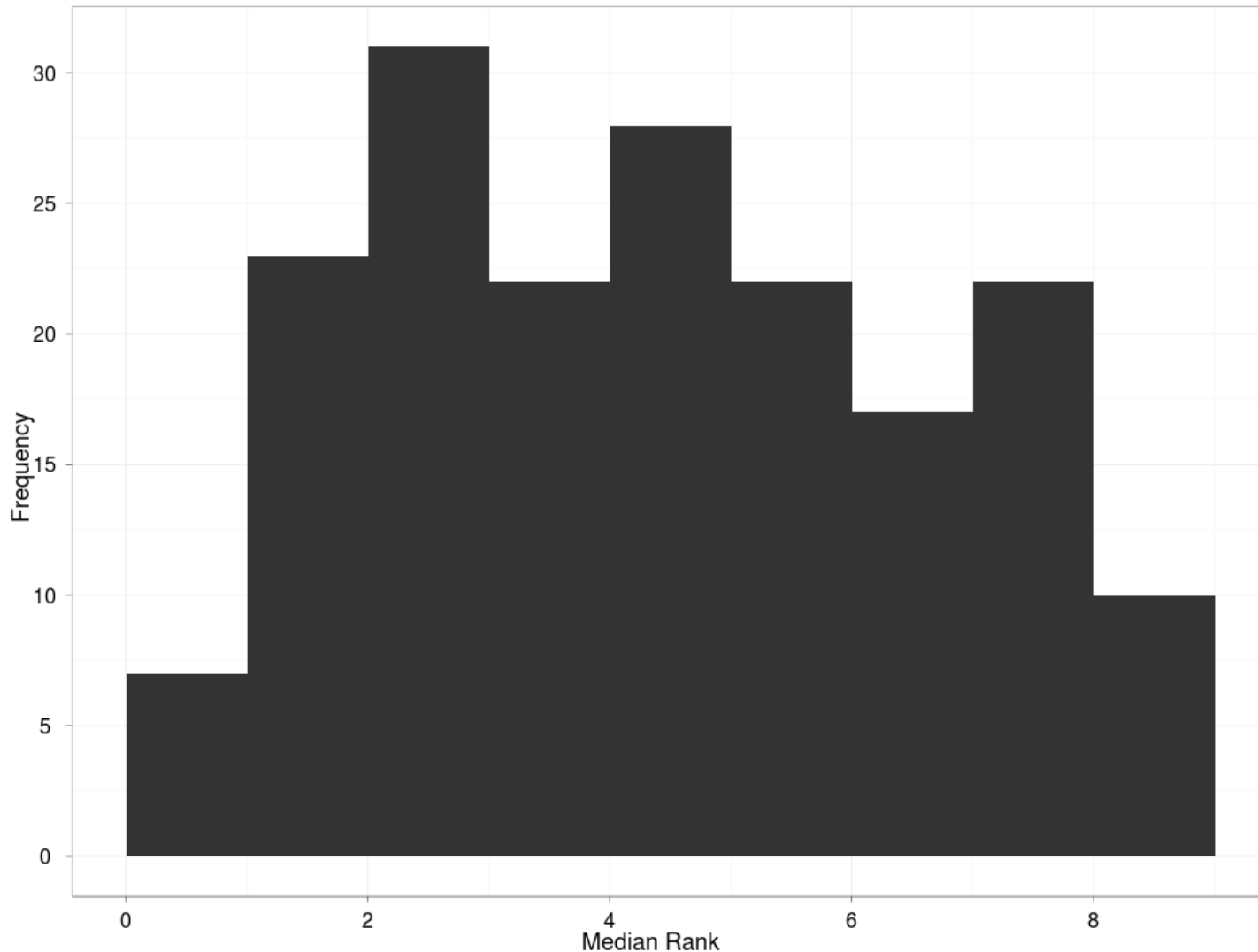
- Evidence of 'tipping point'/critical mass when social information available
- Social information no overall effect at the individual level – because affects different people differently
- But, rounds more likely to be funded under both social information and visibility treatments
- Personality is the mediating variable
  - Co-operatives give more, individualists give less overall
  - Individualists give more with visibility and social information, co-operatives give less

# Distribution of 'minimum rank' (threshold?) in individual subject behaviour across rounds



*Most subjects willing to start at some point*

## Distribution of 'median rank' in individual subject behaviour across rounds



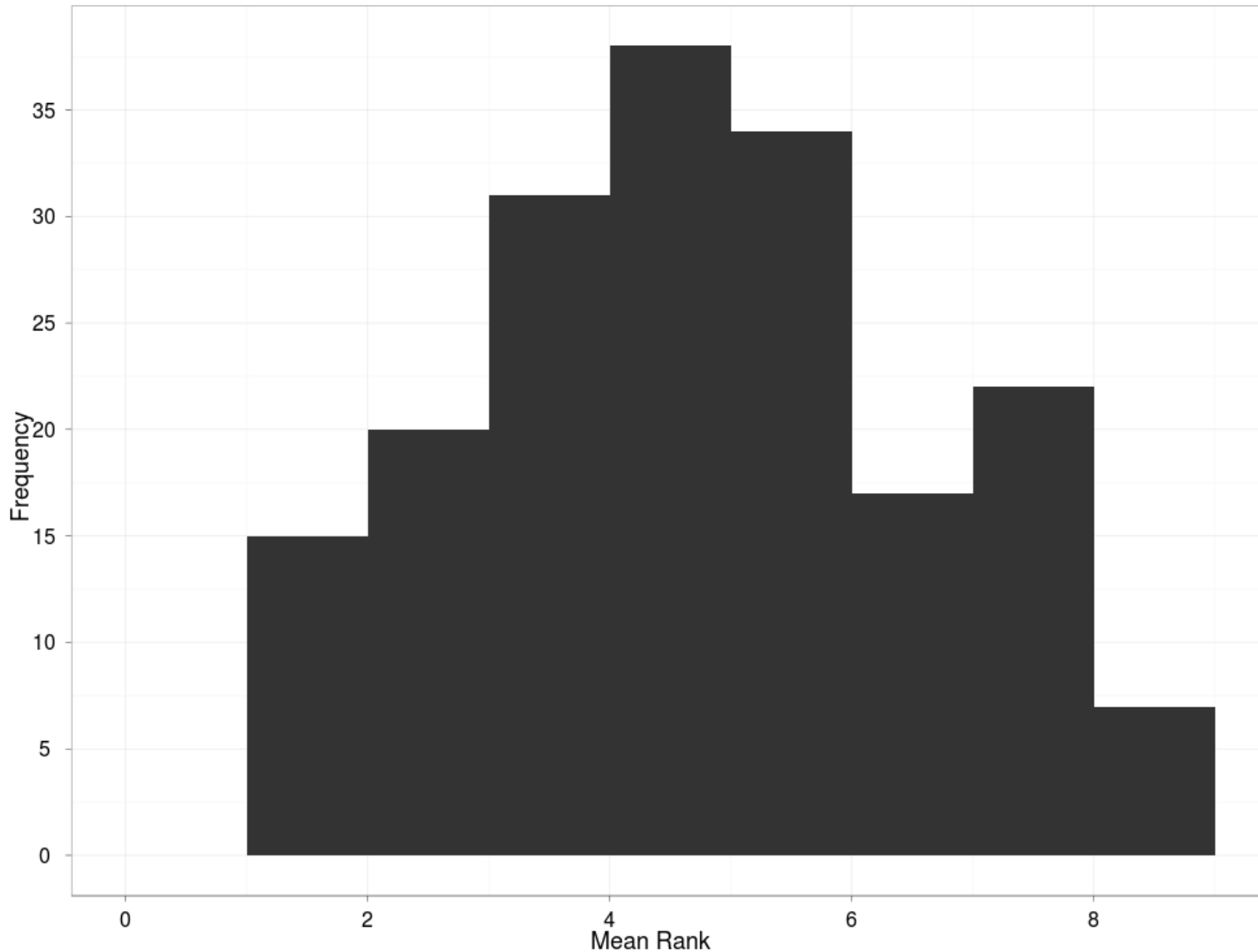
*Median rank more evenly distributed – could be better approximation to threshold?*

# Ordered Logit showing relationship between Median Rank and personality traits

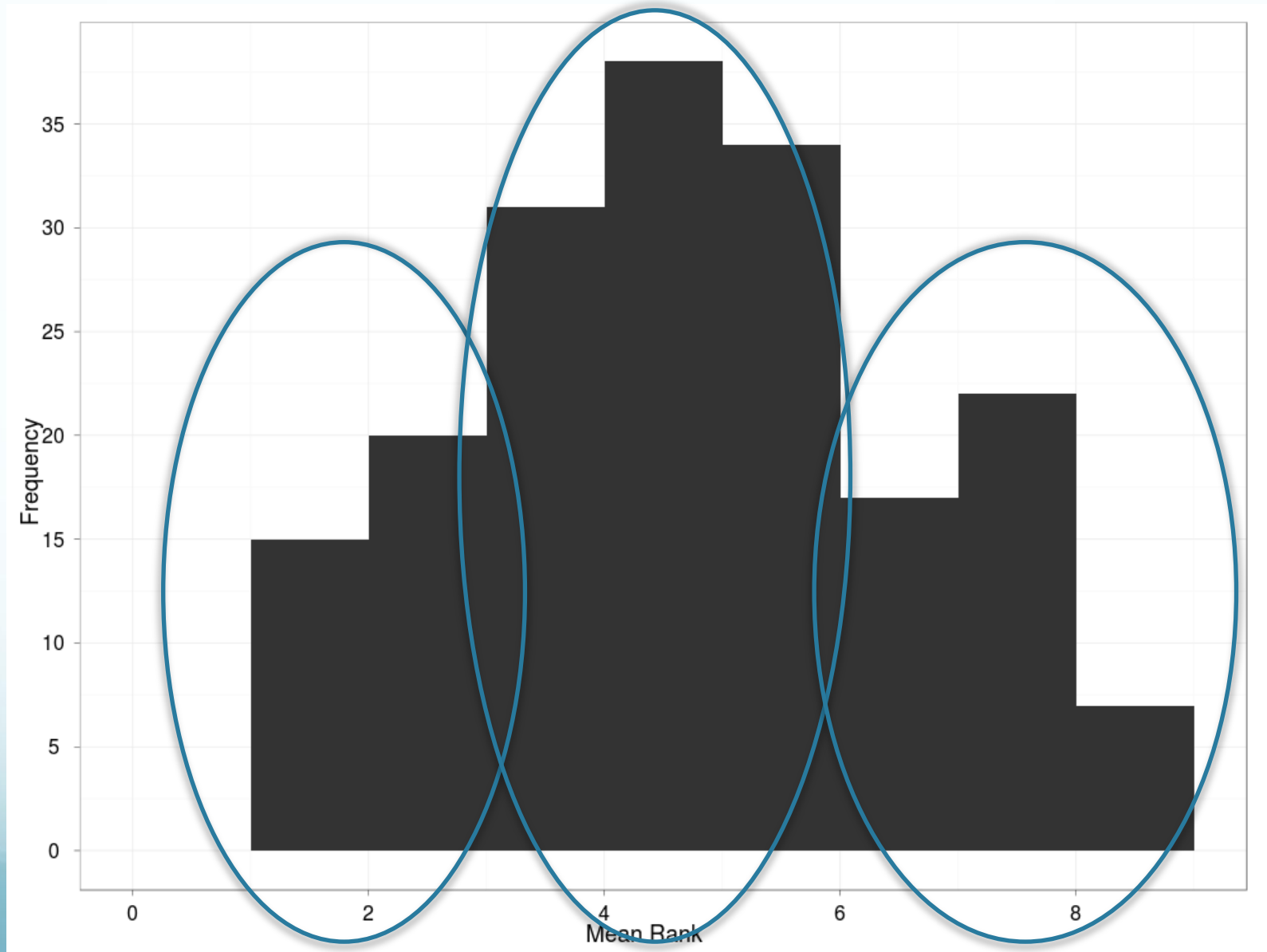
Variable	Coefficient
Rotter Score	-2.52**
Extravert	-1.47**
Agreeable	2.22**
Conscientious	0.03
Emotionally Stable	0.76
Open	0.50
Cooperative SVO	0.12

N: 180, Log-likelihood: -474.82

# Distribution of 'mean rank' in individual subject behaviour across rounds

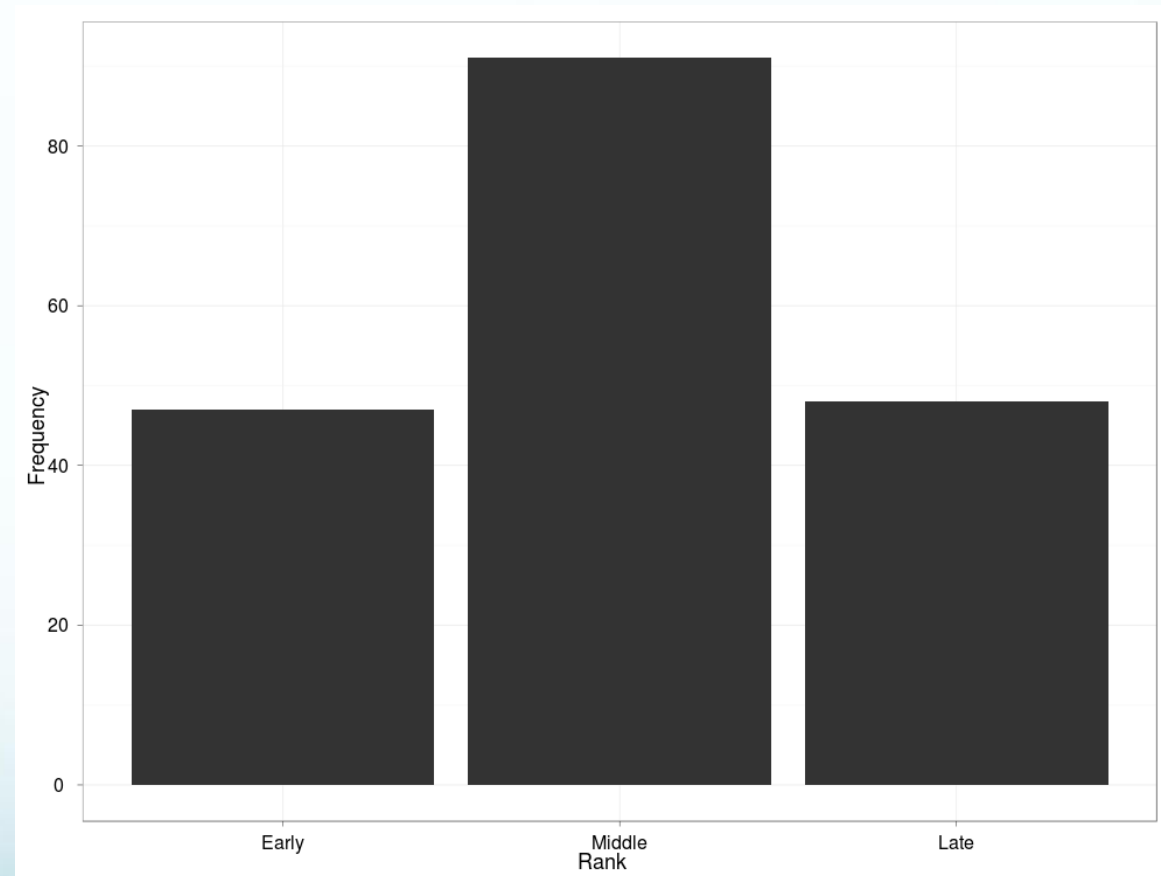


# Distribution of 'mean rank' in individual subject behaviour across rounds

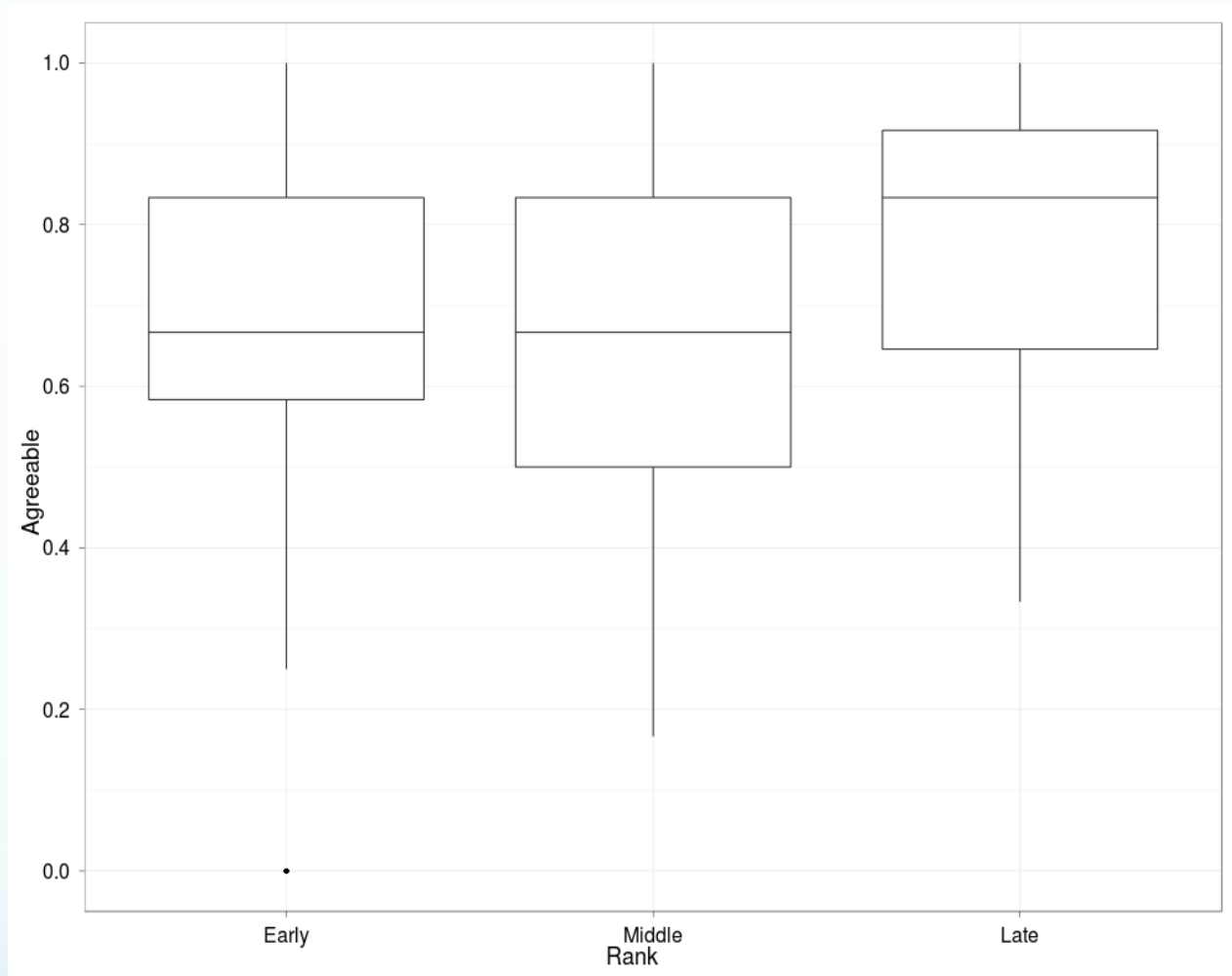


# Early, middle and late movers – grouped by mean rank

- Rounds are quick and rank may be influenced simply by reaction time – grouping mean rank helps smooth out these differences.
- Early: Mean rank is within first quartile
- Middle: Mean rank greater than first quartile and less than third quartile
- Late: Mean rank is greater than third quartile



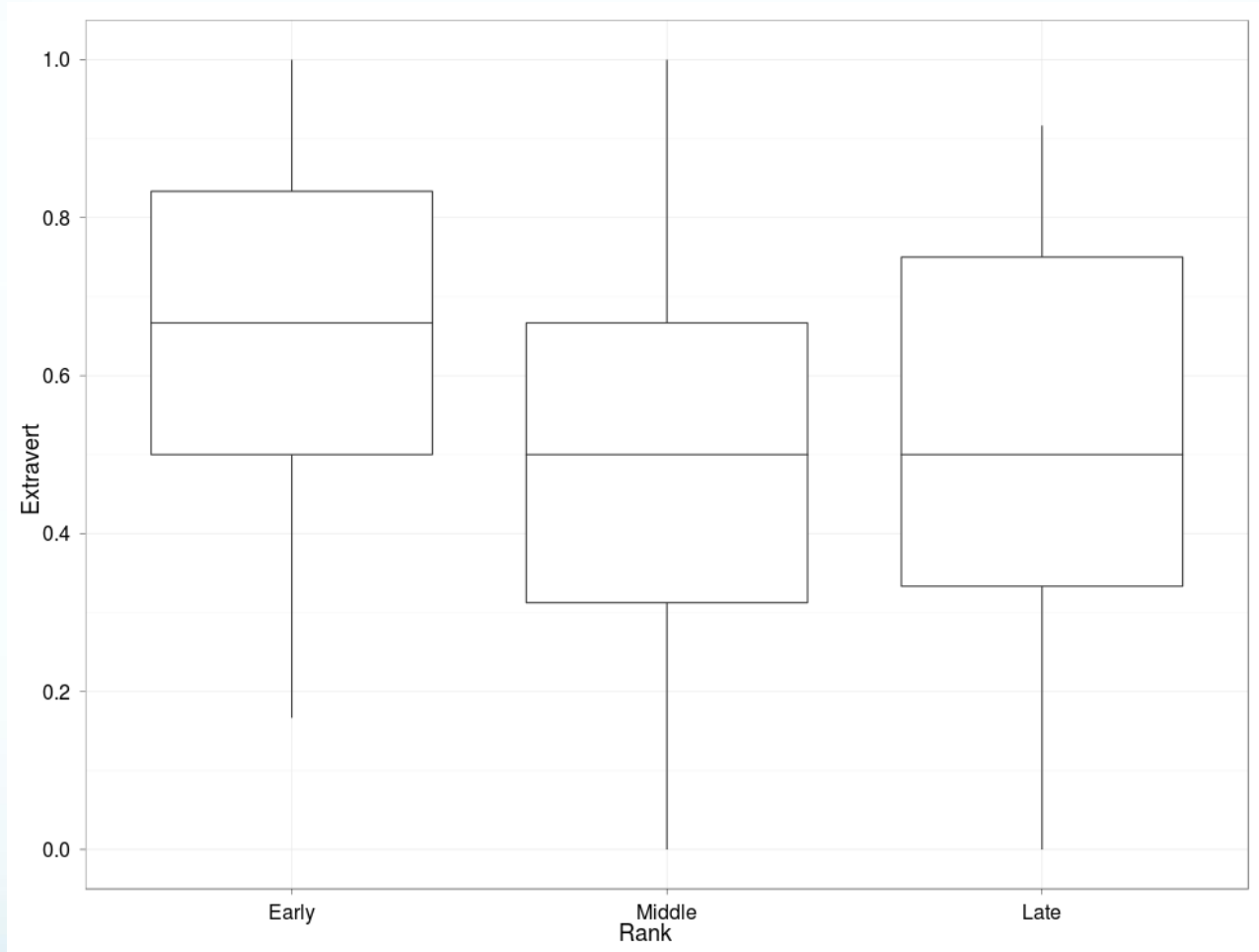
# Late movers are 'agreeable'



	Coefficient	Std Error	z	P> z	95% Confidence Interval	
<b>Agreeable</b>	1.78	0.67	2.68	<b>0.01</b>	0.48	3.09

Log likelihood: -188.89

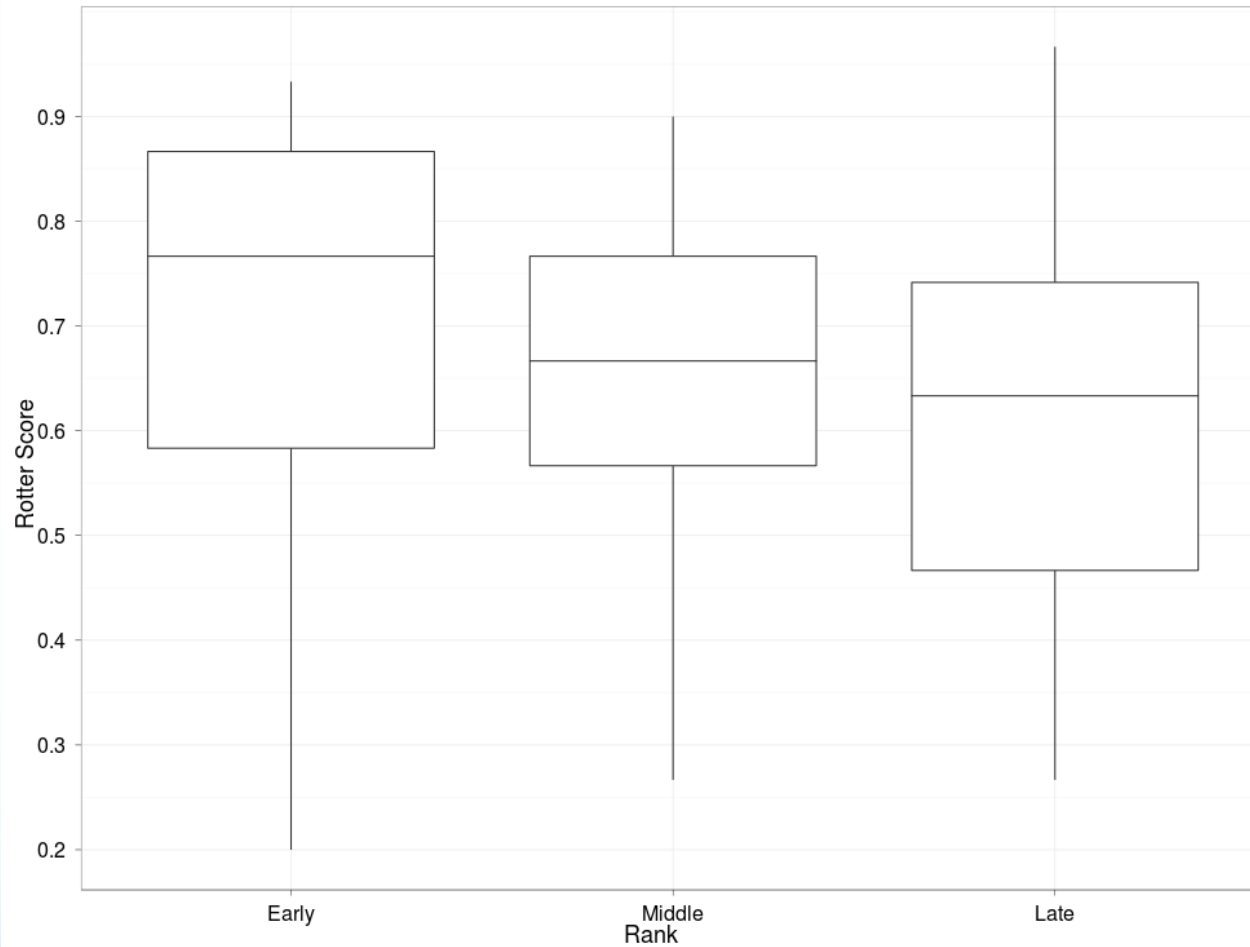
# Early movers are 'extravert'



	Coefficient	Std Error	z	P> z	95% Confidence Interval	
<b>Extravert</b>	<b>-1.02</b>	<b>0.52</b>	<b>-1.97</b>	<b>0.048</b>	<b>-2.03</b>	<b>-0.01</b>

Log likelihood: -190.60

# Early movers have 'internal' locus of control



	Coefficient	Std Error	z	P> z	95% Confidence Interval	
<b>Rotter Score</b>	-2.04	0.86	-2.37	<b>0.018</b>	-3.73	-0.35

Log likelihood: -187.48

## Ordered Logit showing relationship between 'mean rank' groups (Early, Middle and Late Movers) and personality traits together

Variable	Coefficient	
Rotter Score	-2.32*	
Extravert	-1.14	
Agreeable	2.06**	
Conscientious	0.88	
Emotionally Stable	0.72	
Open	-0.11	
Cooperative SVO	0.06	

N: 180, Log likelihood = -179.60

# Agreeable

	Coefficient	Std Error	z	P> z	95% Confidence Interval	
Ordered logit on groups	1.78	0.67	2.68	0.01	0.48	3.09
Ordered logit on median rank	1.62	0.62	2.60	0.01	0.40	2.85
Ordered logit on minimum rank	2.66	0.93	2.86	0.00	0.83	4.48

*Agreeable people less likely to start*

# Extravert

	Coefficient	Std Error	z	P> z	95% Confidence Internal	
Ordered logit on groups	-1.02	0.52	-1.97	0.048	-2.03	-0.01
Ordered logit on median rank	-1.10	0.48	-2.32	0.02	-2.04	-0.17
Ordered logit on minimum rank	-1.03	0.64	-1.61	0.11	-2.30	0.23

*Extravert people more likely to start*

# Locus of Control

	Coefficient	Std Error	z	P> z	95% Confidence Internal	
Ordered logit on groups	-2.04	0.86	-2.37	0.02	-3.73	-0.35
Ordered logit on median rank	-2.12	0.81	-2.63	0.01	-3.70	-0.54
Ordered logit on minimum rank	-2.94	1.00	-2.93	0.00	-4.90	-0.97

*People with 'internal locus of control' most likely to start*

# Rounds need some 'starters'

- Now investigating relationship between round getting funded and personality composition of group
- Nothing is significant so far apart from first contribution – which is highly significant
- Like the first day of signatures on a petition, the amount of the first contribution is critical in our experiment – commensurate with Economics research on charitable giving (eg. Huck and Rasul, 2008).

# Rounds need a good start

	Coef.	Std. Err.	z	P> z	95% Confidence Interval	
First Contribution	2.92***	0.47	6.23	0.00	2.00	3.84
Rotter Score (Mean)	1.56	2.69	0.58	0.56	-3.70	6.83
Extravert (Mean)	2.29	2.40	0.96	0.34	-2.41	6.99
Agreeable (Mean)	-2.39	2.26	-1.06	0.29	-6.81	2.04
Constant	-2.79	2.71	-1.03	0.30	-8.10	2.52

N: 200, Log likelihood: -104.52

# Hypotheses are partially confirmed

- H1: People have heterogeneous **thresholds** (minimum number of other participants) for joining collective action – although more starters than anticipated
- **H2: Thresholds and willingness to start** vary according to personality
- H3: People with high **internal locus of control** – have lower thresholds than other personality types – but 2 ‘Big 5’ personality traits are important too – ‘**agreeable**’ and ‘**extravert**’ - not **social value orientation**

# Implications

- Locus of control, extraversion, agreeableness are clue to thresholds (Schelling's 'k')
- Evidence that these personality traits are normally distributed would provide some substantiation to Schelling's claims for 'k'
- Mobilizations need some people with low thresholds to 'start' (or lead) – success will depend on context and distribution of key personality traits in constituent population