

# Q Methodology

## *An introduction (1/2)*

Aiora Zabala

[az296@cam.ac.uk](mailto:az296@cam.ac.uk) / [aiora.zabala@gmail.com](mailto:aiora.zabala@gmail.com)

Environmental Policy, Department of Land Economy



**UNIVERSITY OF  
CAMBRIDGE**

# Q Methodology: outline

## Session 1:

- **Theory**
- **Research design**
- **Data collection**

## Session 2:

- **Analysis**
- **Interpretation**
- **Report writing**

# 1. What can I use Q Methodology for?

- Understand subjectivity: viewpoints, perspectives, attitudes...
- Identify and describe the distinct perspectives existing within a group, about a topic of interest
- Is it really **qualitative**?

# Q at a glance...

<http://www.youtube.com/watch?v=0AejeH6jw2c>

Think of a **research question** ...

or a **topic of concern** in your discipline

What types of perspectives  
could you identify?

# For example...

- *Cultural conceptions of partnership love*
- *Senses of stewardship towards land conservation among UK farmers*
- *Values on democracy*
- *Gender inequality in the work place*
- *Behaviour of internet consumption*
- *Social entrepreneurship styles*
- *Discourses on environmental governance*
- *Styles of knowledge acquisition in mathematics by A level students*

# What can I get out of a Q methodology study?

- A QM study can be used for:
  - a **chapter** of a PhD thesis
  - a whole **PhD** thesis
  - a Master **dissertation**
  - ...
- **Why?**
  - **Small samples** can provide enough substance for discussion (we'll see that later)
  - **Exploratory** and **semi-quantitative** (or semi-qualitative? Or mixed?)
  - The interpretation makes thorough use of theory. Hence **the description of each typology can be as concise or as expanded** as you wish and to the extent to which your design allows it

## 2. A bit of history...

- Proposed by Stephenson, an assistant of Spearman in the 1930s, in the lab where Factor Analysis was developed
- Factor analysis looks at similarities between variables
- Stephenson thought: *Why not correlate people instead of variables?* He then sent a letter to Nature (1934)
- **Q** versus **R** (not the software!) methodologies:
  - In factor analysis (R), variables are correlated: *What variables represent the same concept?*
  - In Q methodology, people are correlated: *What people are more alike?*
- (We'll see this distinction clearer when doing the analysis)



# 3. The *nature* of Q methodology

- Ongoing theoretical/philosophical discussions about QM:
  - Concourse theory
  - The relation between QM and:
    - Quantum theory (yes, the quantum theory in Physics)
    - Abduction (as in Psychology)
    - Social constructionism
- We won't go deeper on these because the aim of the course is that you learn how to implement QM in practice.
  - If you're interested: Watts & Stenner 2013 *Doing Q Methodological Research* Sage, Chapter 2 (contents of the chapter on the **right image**)

Introduction

**Operant subjectivity**

**Stephenson's subjectivity: a process of transition**

Subjectivity deconstructed: William James and William Stephenson

A science of the subjective

**Self-reference and concourse theory**

Projected feeling and self-referent statements

Concourse theory: consciring and communicability

Concourse in practice: a methodological definition

**Q methodology and quantum theory**

Quantum theory and factor analysis: a mathematical connection

Q methodology: psychological experimentation in the quantum image

**The logic of abduction**

Abduction and Q methodology

Abduction and factor rotation

Abduction and factor interpretation

**Social constructionism**

Constructivism versus constructionism

Q methodology and social constructionism

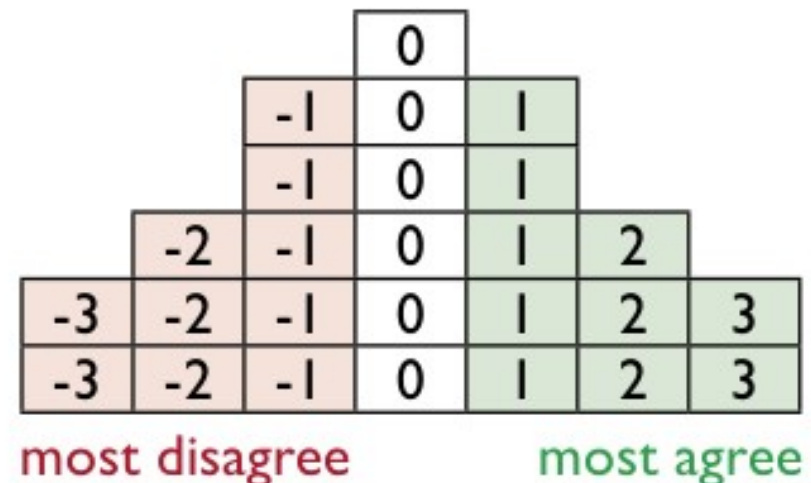
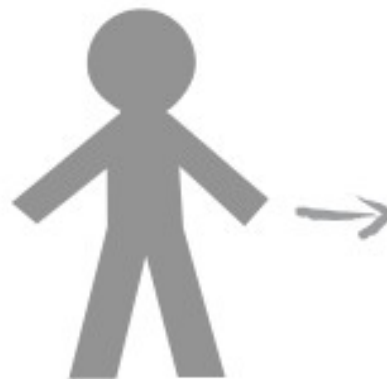
The emergence of Q methodological factors: a social constructionist and abductive explanation

**Chapter summary**

## 4. How do I investigate ...

... what are the perspectives within a group on a topic of concern?

- In brief:  
respondents (the **P-set**) rank  
a set of statements (the **Q-set**) on a grid,  
usually from *most disagreement*,  
to *most agreement*



# The 'sample' of **statements** (the Q-set)

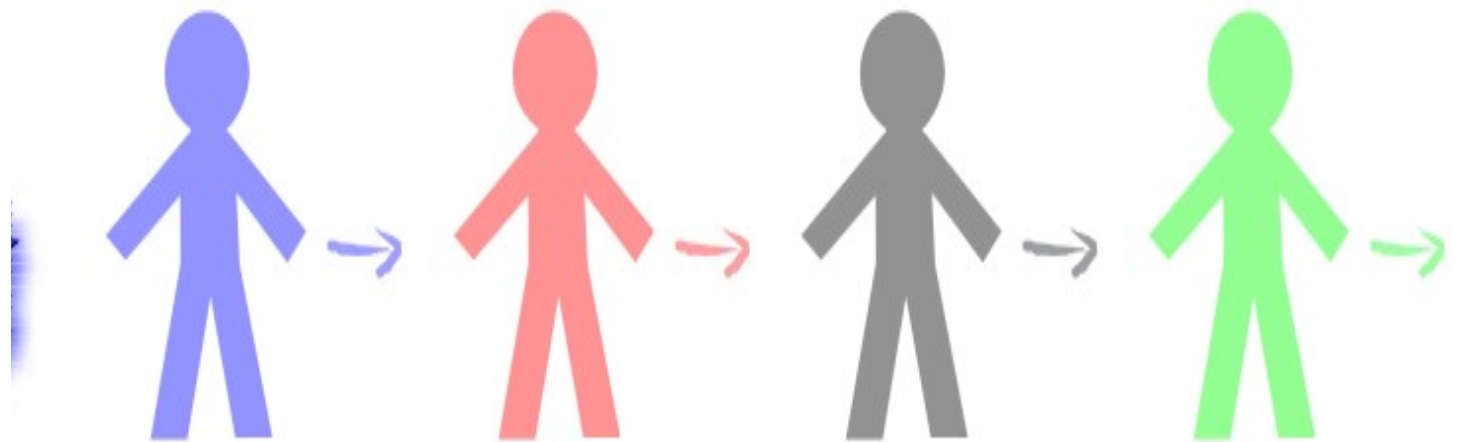
- A **concourse** is the whole set of possible expressions on a topic, gathered from all possible points of view (in theory, a concourse would be infinite)
- The **statements** that we select should be a representative sample of the concourse





# The sample of **participants** (the P-set)...

- Needs not be representative of the population, neither large, but rather...

*...Diverse!*



# 5. The process at a glance

- 
- A. Research question
  - B. Q-set – statements
  - C. Shape of the distribution
  - D. Condition of instruction
  - E. P-set – participants
  - F. Piloting
  - G. Administering
  - H. Data introduction
- 
- I. Analysis (the number of types and other analytical decisions)
  - J. Interpretation
  - K. Write up

# A. Research question

Some examples...

- *“whether a group of junior conservation professionals share a set of core conservation values and the extent of disagreement over these values”*
- *“the criteria adolescents use when evaluating their musical compositions”*
- *“the construction of political agency of indigenous peoples and their participation in international policy-making”*
- *“the social and economic implications of mobile telephone use in the developing world”*

## B. Q-set – the statements

- Types of stimuli: written (most common), images, colours...
- SOURCES: interviews, review of popular/academic literature, expert consultation, participant observation ...
- How many?
- Ways of classifying the statements (*structured or unstructured*)
- Testing, and things to avoid



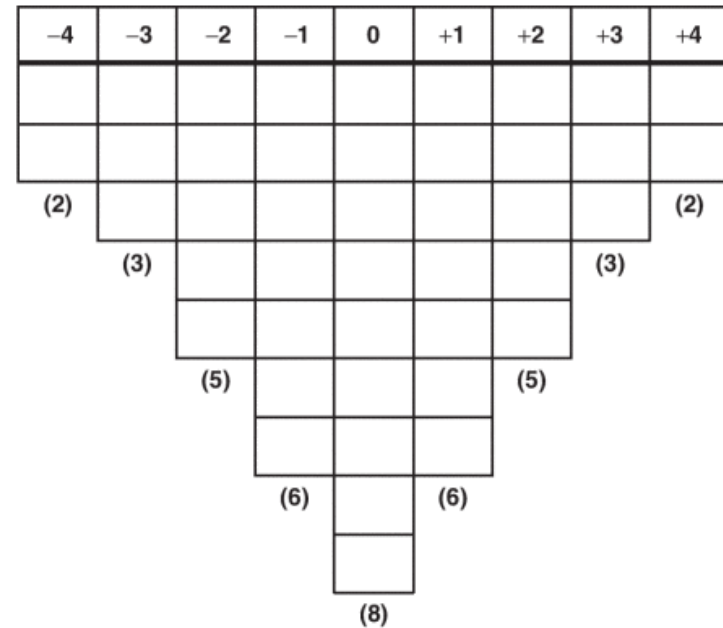


# C. Shape of the distribution

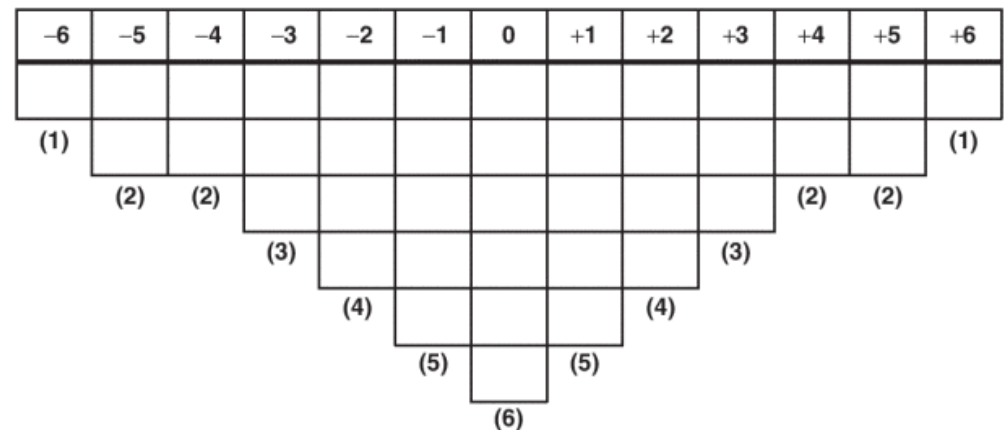
(or *board*, or *grid*...)

- There is total freedom
- Though a bell shaped ('*normal*') distribution is common. Why?
- *Forced* distribution or *not forced*?

(a)



(b)



## D. The condition of instruction

- '**Condition of instruction**' is the way in which participants are asked to respond (to rank the statements).
  - Usually, participants are asked to respond based on their own agreement from *most disagreement*, to *most agreement*.
  - However there may be other conditions of instruction, e.g.:
    - “How do you think that person X would respond?”, or
    - “From most dislike to most like”

# E. P-set – the participants

- A QM study can ask:
  - A **single participant** with different conditions of instruction
  - **Multiple participants** with the same condition of instruction (most common)
  - ...
- How to select the P-sample?
  - Gather as much info as possible about the potential participants, in order to select a sample
  - SOURCES: background information about the population, researcher's knowledge of the key actors about a topic...
- How many?

# F. Pilot!!



# F. Administering the method (I)

- Give some preliminar information to the participant
- Presentation of the statements  
(always in the same order VS randomly sorted)
- The respondent ranks the statements on the board  
(a process known as **Q-sorting**)
- Post sorting information and interview  
(optional but highly recommended):
  - Some background demographic information
  - Interview: the respondent to explain why she ranked statements Y and Z as *most agree* and *most disagree*  
This step is important, as it will help to interpret the final results

# F. Administering the method (II)

- Basic instructions (and some tips?)
- Formats:
  - Media: on paper, online (e.g. *FlashQ* or *HTMLQ*), by post?
  - Recording the results: for the paper version, annotate the results in a score card or take a photograph (recommended!)
- Each participant's response is known as ***Q-sort***





# Example of finished Q-sort

**Nombre** D. Lázaro

**DESACUERDO** 8

**NEUTRAL/NO RELEVANTE** 4

**DE ACUERDO** 14

*en desacuerdo*

*de acuerdo*

*muy en desacuerdo*

*muy de acuerdo*

14. El matarón y el guash para forraje tardan demasiado en crecer

11. Hago las cuentas de lo que mejor me sale y me dedico a ello

20. Me conviene deshierbar mi parcela de matarón o guash aunque tenga mucho trabajo, para tener más forraje

6. Podría obtener más ganancias de criar ganado sin por ello estropear la tierra

17. Si tuviera más terreno, le sembraría matarón o guash en lugar de aumentar mis vacas

25. Puedo ganar más como ganadero si dejo vivir a los otros animales del bosque

26. Para excluir una hectárea de matarón o guash por dos años, necesitaría más terreno del que tengo

7. Sembrar bastante matarón o guash significa mucho esfuerzo y poco beneficio

8. Participo en todos los programas que traen recurso

2. Prefiero 2 hectáreas de pasto de corte que 1 hectárea de matarón o guash

10. Conservar el bosque es responsabilidad del dueño del terreno

23. Prefiero vivir de los subsidios que del trabajo en mis tierras

18. En secas no hay otro remedio que soltar las vacas al monte

13. Lo que da el ganado es mucho más de lo que pierde la tierra

21. Si el gobierno no me da subsidios, no me beneficia cuidar el bosque

16. Me conviene más invertir dinero en tener mejores pasturas que en tener más vacas

1. En las tierras que trabajo, trabajarán también mis hijos y nietos

9. Me conviene más producir mi propia comida que comprarla

15. Es necesario que me den más subsidios para que mis hijos no tengan que ir a vivir a otro sitio

3. Lo que más me interesa de los programas es aprender para ganar más dinero

5. Con los programas de plantar árboles recibo más dinero por mi trabajo

4. Puedo mantener a mi familia con mi propio trabajo. Los subsidios sólo ayudan

12. Mis terrenos se están cansando

22. Pruebo cosas nuevas en mi trabajo

19. Con más capacitación, podría mejorar mucho mi trabajo con el ganado



# Example of warming up questions

**D. Lazaro**

DESACUERDO .....  
NEUTRAL/NO RELEVANTE .....  
DE ACUERDO .....

en desacuerdo

de acuerdo

muy en desacuerdo

muy de acuerdo

E. La milpa es cada vez más rentable	C. Quiero que mis hijos puedan trabajar en lo que yo trabajo	A. Los bosques dan aire fresco
D. Cada vez hay menos gente en Los Angeles		
B. Sin los subsidios, no podría cultivar mi milpa		



# Practical!

Respond to the **online** Q survey at  
<http://aiorazabala.net/learnQ/demo>

Or get in pairs and use the **printed** board and cards,  
and introduce the data

~20 minutes

# Practical!

*Think of the flaws and strengths of the statements*

*What would you change if you were the researcher?*

*How would you reformulate one of the questions to adapt it to your research topic?*

Hall et al (2012)

**Improving student learning in the communication classroom: Q-methodology and learner preferences. *Asia Pacific Media Educator***

**22(2):179-197**

## **Abstract**

Instructors, challenged by traditional student learning, desire to gain a deeper understanding of how students learn. Utilization of Q-method provides an effective methodology to improve instructor understanding of human subjectivity. This research depicts how Q-methodology can provide the educator a rich tool to identify and assess student learning styles. This paper reports the adaptation of an existing learning styles instrument to a Q-method analysis in three upper-division communication classes. Four learning groups emerged from the analysis: Global Conceptualizer, Verbal Learner, Realistic Visualizer, and Ambiguous Conceptualizer. These four learning groups are discussed with implications for teaching and learning. The paper concludes that the use of Q-method can deepen understanding of students' learning preferences by strengthening existing approaches of learning styles and improve instructor understanding of students.

## **Keywords**

Q-method, education, student-centred learning, learning styles

# H. Data introduction

- Raw data

	A	B	C	D	E	F	G	H	
1									
2	<b>0</b>	---	--	-	=	+	++	+++	
3	Juan Martinez				22				
4	(ejemplo)			20	19	26			
5				14	21	16			
6			23	17	25	15	10		
7		7	5	13	3	18	6	24	
8		12	4	11	2	8	9	1	
9	<b>1</b>	---	--	-	=	+	++	+++	
10	nombre								
11									
12									
13									
14									
15									
16	<b>2</b>	---	--	-	=	+	++	+++	

# H. Data introduction

- A matrix where rows are Q-sorts, statements are columns, and cell values correspond to the value given in the distribution

Q		St 1	St 2	St 3	St 4	St 5	St 6	St 7	St 8	St 9	St 10	St 11	St 12
3	qsor												
4	S01	1	2	2	0	1	1	-2	-3	1	2	0	-
5	S02	1	0	1	-3	-1	-3	0	0	1	-1	2	
6	S03	1	-1	1	0	-1	0	-1	-1	0	0	-1	
7	S04	3	-1	-1	-2	-1	1	-2	-3	3	1	1	
8	S05	2	1	-2	0	-1	-1	-1	0	3	2	-1	
9	S06	3	0	0	-2	-2	2	-3	1	2	2	-1	-
10	S07	1	3	3	1	-2	0	-1	1	2	1	0	-

# Summary of this session

*The process at a glance:*

**A. Research question**

**B. Q-set – statements**

**C. Shape of the distribution**

**D. Condition of instruction**

**E. P-set – participants**

**F. Piloting**

**G. Administering**

**H. Data introduction**

**I. Analysis (What criteria to use to decide in each step of the analysis)**

**J. Interpretation of the perspectives (\*\*\*)**

**K. Report a QM study**

*Key terms:*

- ***Concourse***
- ***Q-set***
- ***P-set***
- ***Condition of instruction***
- ***Shape of the distribution***
- ***Q-sort***
- ***Q-sorting***

# For the next session

- If you haven't done so, please respond the 'survey':
  - Online at <http://aiorazabala.net/learnQ> , or
  - Paper-based, and introduce the data in a spreadsheet. Email me the spreadsheet
- **Install R** from here: <http://cran.r-project.org/>
  - If you don't know how to use R, don't worry, **we will use a visual interface**
  - We won't do installation troubleshooting in class, so please bring R installed
- See optional readings in the next slide

# Reading

- Suggested to complement the content of this session:
  - \* Watts & Stenner (2012) *Doing Q Methodological Research: Theory, Method & Interpretation*. Sage. Chapters 2 and 3. Partially on google books
  - Zabala, Sandbrook & Mukherjee (2018) When and how to use Q methodology to understand perspectives in conservation research *Conservation Biology*, 32(5):1185–1194. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1111/cobi.13123> (OA)
  - Van Exel & de Graaf (2005). Q methodology: A sneak preview (27 pages). Available at: <https://qmethod.org/portfolio/van-exel-and-de-graaf-a-q-methodology-sneak-preview/>
  - Zabala (2014) qmethod: A Package to Explore Human Perspectives Using Q Methodology. First two sections: *Introduction* and *The Q methodology* (4 pages). Available at: <http://journal.r-project.org/archive/2014-2/zabala.pdf> (OA)
  - McKeown & Thomas (2013) *Q methodology* (Quantitative Applications in the Social Sciences series, Vol. 66). London: Sage. Chapters 1-3, Ebook available from Sage. Partially on google books
- Suggested for the next session:
  - Zabala (2014). Section '*Analytical process*' (1 page).  
*And one of either of these:*
  - Watts & Stenner (2012) Chapters 4 and 5
  - McKeown & Thomas (2013) Chapter 4
  - The *qmethod* package, a Cookbook and much more on Github: <https://github.com/aiorazabala/qmethod/wiki>

# The **analytical process** at a glance

1. Correlation matrix between Q-sorts, *need to decide on:*
  - [A] *Method* for factor extraction
2. Factors, *need to decide on:*
  - [B] **How many** factors
  - [C] Which type of *rotation*
3. Factor loadings (*relate Q-sorts with the factors*)
4. 'Flag' Q-sorts (*indicate which ones are the most representative of the factor*)
5. Statements scores (*average response*)
6. Distinguishing & consensus statements (*to help define and **interpret** each factor*)

*factor = perspective*



A photograph of a forest floor covered in a dense carpet of purple bellflowers. Several large, mature trees with thick trunks and green foliage stand in the background, creating a dappled light effect on the flowers. The text "Thank you" and the email address "Aiora.Zabala@gmail.com" are overlaid in white on the upper portion of the image.

**Thank you**  
Aiora.Zabala@gmail.com